Appendix A. Literature Search Strings

June 7, 2010

AMED (Allied and Complementary Medicine)

knee osteoarthritis.mp. or exp Osteoarthritis Knee	446

Health and Psychosocial Instruments

knee osteoarthritis.mp. or exp Osteoarthritis Knee	34

Ovid Medline (R)

1	exp Treatment Outcome/ or exp Physical Therapy Modalities/ or exp "Outcome Assessment (Health Care)"/ or exp Questionnaires/		761338
2	knee osteoarthritis.mp. or exp Osteoarthritis, Knee/		6740
3	1 and 2		2296
4	limit 3 to (abstracts and english language and full text and journal article and ("therapy (sensitivity)" or "therapy (specificity)" or "therapy (optimized)" or "diagnosis (sensitivity)" or "diagnosis (specificity)" or "diagnosis (optimized)" or "prognosis (sensitivity)" or "prognosis (specificity)" or "prognosis (optimized)") and last 15 years)	Ovid 1	309

PubMed Medline

Search "Physical Therapy Modalities"[Mesh] AND "Osteoarthritis, Knee"[Mesh] Limits: Humans, Journal Article, English	373
Search "Physical therapy" AND knee osteoarthritis Limits: Humans, Journal Article, English	336

July 22, 2010

Search Disability AND "knee osteoarthritis" Limits: Humans, Journal Article, English	472
Search "Disability Evaluation"[Mesh] AND "knee osteoarthritis" Limits: English	208

Cochrane Library "Physical Therapy Modalities and Osteoarthritis, Knee in Cochrane Database of Systematic Reviews" -75 records
Ovid Technologies, Inc. Email Service

Search for: limit 19 to (english language and yr="1990 -Current")
Database: Ovid Medline (R) <1950 to May Week 4 2010>
Search Strategy:

1	exp Osteoarthritis, Knee/rh, th [Rehabilitation, Therapy]	921
2	exp Pain/rh, th [Rehabilitation, Therapy]	36659
3	exp osteoarthritis, knee/	6253
4	2 and 3	155
5	1 or 4	947
6	exp Physical Therapy Modalities/	97923
7	3 and 6	467
8	5 or 7	1012
9	exp "Outcome and Process Assessment (Health Care)"/	494044
10	exp Pain Measurement/	43738
11	exp "Quality of Life"/	82913
12	exp "Activities of Daily Living"/	40273
13	exp Patient Satisfaction/	43917
14	exp Muscle Strength/	9567
15	exp "Recovery of Function"/	18157
16	outcome$.mp.	937806
17	exp "Range of Motion, Articular"/	23800
18	9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17	1110826
19	8 and 18	685
20	limit 19 to (english language and yr="1990 -Current")	619)

June 10 PubMed, Medline

Search Osteoarthritis[Corporate Author]	24

October 25, 2010

Search predictor disability knee osteoarthritis Limits: Humans, Journal Article, English	20
Search specificity AND knee osteoarthritis Limits: Humans, Journal Article, English	439

November 12, 2010

Search Manual AND "knee osteoarthritis"	71

December 10 2010

Search patient acceptable symptom state	46

July 14, 2011
Ovid, Medline

1	Osteoarthritis, Knee/rh, th [Rehabilitation, Therapy]	1089
2	exp Osteoarthritis, Knee/	7250
3	exp Health Education/	121363
4	exp Patient Education as Topic/	62111
5	exp Health Knowledge, Attitudes, Practice/	55919
6	exp Counseling/	28798
7	3 or 4 or 5 or 6	188826
8	2 and 7	109
9	limit 8 to english language	98
10	limit 9 to (case reports or editorial)	6
11	9 not 10	92
12	exp Osteoarthritis, Knee/	7250
13	exp Exercise Therapy/	23285
14	exp Exercise/	56182
15	exp Exercise Movement Techniques/	4172
16	exp Physical Endurance/	20397
17	(aerobic capacity or aerobic endurance).mp.	2845
18	(conditioning or reconditioning).mp.	78552
19	propulsion.mp.	2246
20	aquatic.mp.	16488
21	(gait training or locomotor training).mp.	549
22	increased workload.mp.	355
23	exp "Range of Motion, Articular"/	26254
24	muscle lengthening.mp.	143
25	stretching.mp.	11962
26	locomotion training.mp.	9
27	exp Physical Therapy Modalities/	104002
28	(implement training or device training or perceptual training).mp.	140
29	exp Muscle Strength/	11677
30	(strength training or power training or endurance training).mp.	4712
31	exp Postural Balance/	11197
32	body mechanics.mp.	153
33	(balance training or coordination training or agility training).mp.	412
34	exp Relaxation Therapy/	6332
35	13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34	322420
36	12 and 35	1564
37	limit 36 to english language	1435
38	limit 37 to humans	1419
39	limit 38 to (case reports or editorial)	59
40	38 not 39	1360
41	exp Osteoarthritis, Knee/rh, th [Rehabilitation, Therapy]	1089
42	exp Self Care/	33911
43	exp "Activities of Daily Living"/	43159

44	exp Orthopedic Equipment/	67082
45	functional training.mp.	161
46	exp "Wounds and Injuries"/pc [Prevention & Control]	39788
47	42 or 43 or 44 or 45 or 46	180570
48	41 and 47	227
49	limit 48 to english language	208
50	limit 49 to (case reports or editorial)	10
51	49 not 50	198
52	exp Osteoarthritis, Knee/rh, th [Rehabilitation, Therapy]	1089
53	(assistive device$ or adaptive device$).mp.	894
54	equipment training.mp.	65
55	device training.mp.	26
56	exp Occupational Therapy/	8942
57	exp Leisure Activities/	123365
58	exp Accidents, Occupational/pc [Prevention & Control]	4338
59	exp Occupational Diseases/pc [Prevention & Control]	17424
60	53 or 54 or 55 or 56 or 57 or 58 or 59	153349
61	52 and 60	113
62	limit 61 to english language	100
63	limit 62 to (case reports or editorial)	4
64	62 not 63	96
65	exp Osteoarthritis, Knee/rh, th [Rehabilitation, Therapy]	1089
66	manual therap$.mp.	782
67	(mobilization or manipulation).mp.	82551
68	exp Traction/	5318
69	exp Musculoskeletal Manipulations/	10444
70	exp Manipulation, Orthopedic/	3183
71	exp "Range of Motion, Articular"/	26254
72	passive range of motion.mp.	491
73	66 or 67 or 68 or 69 or 70 or 71 or 72	118016
74	65 and 73	144
75	limit 74 to english language	136
76	limit 75 to (case reports or editorial)	6
77	75 not 76	130
78	exp Osteoarthritis, Knee/rh, th [Rehabilitation, Therapy]	1089
79	exp Self-Help Devices/	7276
80	exp Orthopedic Equipment/	67082
81	exp Bandages/	17549
82	(adaptive device$ or assistive device$).mp.	894
83	orthotic device$.mp.	4469
84	protective device$.mp.	10325
85	supportive device$.mp.	39
86	79 or 80 or 81 or 82 or 83 or 84 or 85	101256
87	78 and 86	128
88	limit 87 to english language	115
89	limit 88 to (case reports or editorial)	7
90	88 not 89	108
91	exp osteoarthritis, knee/	7250
92	exp Iontophoresis/	6454
93	exp Electric Stimulation/	111391
94	exp Electric Stimulation Therapy/	50317
95	92 or 93 or 94	165802
96	91 and 95	80
97	(ems or fes or hvpc or nmes or tens).mp.	14879
98	91 and 97	25
99	96 or 98	82
100	limit 99 to english language	70
101	limit 100 to (case reports or editorial)	3
102	100 not 101	67

103	exp osteoarthritis, knee/	7250
104	exp Physical Therapy Modalities/	104002
105	exp Magnetic Field Therapy/	4751
106	exp Cryotherapy/	18562
107	exp Hydrotherapy/	16153
108	exp Ultrasonic Therapy/	7694
109	exp Hot Temperature/tu [Therapeutic Use]	2591
110	exp Hyperthermia, Induced/	20568
111	exp Bandages/	17549
112	exp Intermittent Pneumatic Compression Devices/	286
113	exp Stockings, Compression/	661
114	exp Motion Therapy, Continuous Passive/	485
115	104 or 105 or 106 or 107 or 108 or 109 or 110 or 111 or 112 or 113 or 114	159321
116	103 and 115	633
117	limit 116 to english language	556
118	limit 117 to (case reports or editorial)	28
119	117 not 118	528
120	exp osteoarthritis, knee/	7250
121	exp Treatment Outcome/	499636
122	treatment duration.mp.	3753
123	treatment intensity.mp.	567
124	exp Patient Care Team/	47915
125	exp Patient Care Planning/ or exp "Continuity of Patient Care"/ or exp Case Management/	57332
126	coordinated care.mp.	412
127	exp Combined Modality Therapy/	174206
128	exp Interdisciplinary Communication/	6510
129	interdisciplinary.mp.	20982
130	121 or 122 or 123 or 124 or 125 or 126 or 127 or 128 or 129	747717
131	120 and 130	1936
132	limit 131 to english language	1727
133	limit 132 to (case reports or editorial)	73
134	132 not 133	1654
135	exp osteoarthritis, knee/	7250
136	lower extremity functional scale.mp.	54
137	lefs.mp.	56
138	arthritis impact measurement scale.mp.	108
139	patient specific functional scale.mp.	40
140	psfs.mp.	143
141	outpatient physical therapy improvement in movement assessment log.mp.	2
142	(optimal and log).mp.	1320
143	gait speed.mp.	899
144	single leg stance.mp.	213
145	tandem stance.mp.	74
146	manual muscle test.mp.	126
147	manual therapy.mp. or exp musculoskeletal manipulations/	10730
148	exp synovitis/us	260
149	muscle relaxation.mp. or exp muscle relaxation/	27533
150	quadriceps strengthening.mp.	70
151	exp quadriceps muscle/	1335
152	strengthening.mp.	10222
153	151 and 152	35
154	150 or 153	91
155	patellar taping.mp.	52
156	exp patella/	7389
157	taping.mp.	716
158	156 and 157	55
159	155 or 158	71
160	functional training.mp.	161
161	medical device$.mp.	5440

162	exp "equipment and supplies"/	991094
163	device$.mp.	192212
164	162 and 163	100683
165	161 or 164	103180
166	patient education.mp. or exp patient education/	68929
167	exp hydrotherapy/ or aquatic therapy.mp.	16169
168	136 or 137 or 138 or 139 or 140 or 141 or 142 or 143 or 144 or 145 or 146 or 147 or 148 or 149 or 154 or 159 or 160 or 165 or 166 or 167	227807
169	135 and 168	408
170	limit 169 to english language	370

Appendix B. Excluded Studies

Not Eligible Outcomes

1. Helmark IC, Mikkelsen UR, Borglum J, et al. Exercise increases interleukin-10 levels both intraarticularly and peri-synovially in patients with knee osteoarthritis: a randomized controlled trial. Arthritis Research & Therapy 2010; 12(4):R126.
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Not Eligible Exposure

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No Associative Hypothesis Tested

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Appendix C. Ongoing Studies of Physical Therapy Interventions

NCT ID Design Recruitment	Interventions	Outcome Measures	Study description
NCT00613678 Design: RCT Recruitment: Active, not recruiting	Behavioral: Activity Strategy Training, Behavioral: Education	Self-reported pain	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Single Blind (Investigator), Primary Purpose: Supportive Care
NCT00522106 Design: RCT Recruitment: Active, not recruiting	Behavioral: Behavioral graded activity, Other: Exercise therapy	Pain, Physical function, Patient global assessment, Tiredness, Stiffness, Joint mobility, Muscle strength, Patient-specific physical function, Walking test, Pain coping, Locus of control, Quality of life, Exercise adherence, Social support, Level of performed activities	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Single Blind (Outcomes Assessor), Primary Purpose: Treatment
NCT00324857 Design: RCT Recruitment: Active, not recruiting	Behavioral: Decision Aid Video, Behavioral: Motivational Interviewing	Effectiveness of the proposed intervention among AA patients to improve willingness to consider knee replacement, to improve understanding of its risks, benefits and expected outcomes, and to increase primary care referrals for surgical evaluation. To examine and compare the effectiveness of the proposed intervention strategies to increase AA patient likelihood of receiving knee replacement within 12 months of the intervention.	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Factorial Assignment, Masking: Single Blind (Outcomes Assessor), Primary Purpose: Health Services Research
NCT00381290 Design: RCT Recruitment: Active, not recruiting	Behavioral: Diet, Behavioral: Exercise	Inflammatory biomarkers, Knee joint loads, Bone marrow lesions, Articular cartilage, Function, Pain, Mobility, Change in quadriceps' strength and disease progression as a function of knee alignment	Allocation: Randomized, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Single Blind (Outcomes Assessor), Primary Purpose: Treatment
NCT00655941 Design: RCT Recruitment: Active, not recruiting	Behavioral: Dietary instruction, Other: Exercise	Pain, OMERACT-OARSI response criterion, Weight change, Gait analysis, MRI, Ultrasound, Collagen markers, Metabolic syndrome, KOOS	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Single Blind (Outcomes Assessor), Primary Purpose: Treatment
NCT00197977 Design: RCT Recruitment: Active, not recruiting	Behavioral: Educational program to address patients' expectations	The primary outcome is the within-patient change between pre and post program scores measured by the Hospital for Special Surgery Total Knee Replacement Expectations Survey. The secondary outcome is to compare	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Single Blind, Primary Purpose: Educational/Counseling/Training

NCT ID Design Recruitment	Interventions	Outcome Measures	Study description
		patient-reported symptoms with radiographic ratings of disease activity.	
NCT00305890 Design: RCT Recruitment: Active, not recruiting	Behavioral: Lifestyle Behavioral Weight Management Program, Behavioral: Pain-Coping Skills Training, Other: Standard Care	Psychological impairment, Physical disability, Joint stiffness, Activity level, Physical activities, Physiological measures of disease activity, Gait measures	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Open Label, Primary Purpose: Treatment
NCT00248105 Design: RCT Recruitment: Active, not recruiting	Behavioral: Lifestyle Physical Activity Management	Function, Quality of Life	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Open Label, Primary Purpose: Treatment
NCT00465660 Design: RCT Recruitment: Active, not recruiting	Behavioral: Progressive resistance training	Articular cartilage morphology following 6 months high intensity progressive resistance training, Muscle and fat cross-sectional area (CSA) (pre and post),Muscle strength, power, endurance, and contraction velocity (pre, 3 months, & post), Medications (pre, 3 months, & post), Body composition (pre, 3 months, & post),Balance; Physical function (pre, 3 months, & post), Questionnaires (pre, 3 months, & post):Habitual exercise (PASE), WOMAC index (pain, stiffness and functional ability), Depressive symptoms (Depression Scale), Quality of life (SF36), Confidence performing physical activity (Ewart) Demographics	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Single Blind, Primary Purpose: Treatment
NCT01003925 Design: RCT Recruitment: Active, not recruiting	Behavioral: Standard of care for osteoarthritis treatment, Behavioral: Conjoint Analysis for Osteoarthritis	Change in osteoarthritis treatment (for instance, change from an NSAID to capsaicin cream) as measured by follow-up telephone interview, Ease of use, understandability, and suggestions for improvement of the computer decision aid	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Single Blind (Subject), Primary Purpose: Treatment
NCT00123994 Design: RCT Recruitment: Active, not recruiting	Behavioral: Tai Chi classes, Behavioral: Hydrotherapy classes	Self-reported pain and function (WOMAC),General health status (SF-36),Psychological well being (DASS),Patient global assessment (100mm visual analogue scale [VAS]),Physical performance: 50 feet walk time, stair time	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Single Blind, Primary Purpose: Treatment
NCT00763386 Design: RCT Recruitment: Active, not	Device: NexGen LPS-Flex Fixed Bearing Knee,	Postoperative range of motion, Return to function	Allocation: Randomized, Endpoint Classification: Safety, Efficacy Study, Intervention

NCT ID Design Recruitment	Interventions	Outcome Measures	Study description
recruiting	Device: NexGen Legacy Posterior Stabilized Knee		Model: Parallel Assignment Masking: Single Blind (Subject), Primary Purpose: Treatment
NCT00381563 Design: RCT Recruitment: Active, not recruiting	Device: Patellofemoral realigning knee brace, Device: Non-aligning knee brace	Change in pain on the visual analog scale (VAS),Western Ontario and McMaster Osteoarthritis Index (WOMAC),Knee Injury and Osteoarthritis Outcome Score (KOOS),Physical function, Pain with activity, Patient assessment, Short Form (36) Health Survey (SF-36), Analgesic use, Blinded knee, Physician assessment, Functional performance, X-ray, Physical activity, Physical Activity Scale for the Elderly (PASE), Knee strength	Allocation: Randomized, Control: Placebo Control, Endpoint Classification: Efficacy Study, Intervention Model: Crossover Assignment, Masking: Double Blind (Subject, Caregiver, Investigator, Outcomes Assessor), Primary Purpose: Treatment
NCT00199914 Design: RCT Recruitment: Active, not recruiting	Device: Shortwave diathermy	The change in Western Ontario and McMaster Universities Osteoarthritis (WOMAC) Index| The changes in the following parameters:|gait speed (calculated from the time spending for 100-meter walk), global improvement| patient's satisfaction to the treatment	Allocation: Randomized, Control: Placebo Control, Endpoint Classification: Safety/Efficacy Study, Intervention Model: Parallel Assignment, Masking: Double-Blind, Primary Purpose: Treatment
NCT01099371 Design: RCT Recruitment: Active, not recruiting	Other: exercise	Pain assessed on a 10-point numeric pain scale, Disability assessed on WOMAC, Quality of life assessed on the SF-36,Six-minute walk test	Allocation: Randomized, Control: Placebo Control, Endpoint Classification: Safety/Efficacy Study, Intervention Model: Parallel Assignment, Masking: Single Blind (Outcomes Assessor), Primary Purpose: Treatment
NCT00844558 Design: RCT Recruitment: Active, not recruiting	Other: Gait Training, Other: Power Training, Other: Control	Advanced Lower Limb Function: Late Life Function and Disability Instrument, Impairment: knee pain, stair climb power, Functional limitation: timed stair climb, summary performance score, long distance corridor walk, Knee-Related Quality of Life	Allocation: Randomized, Control: Placebo Control, Endpoint Classification: Safety/Efficacy Study, Intervention Model: Parallel Assignment, Masking: Double Blind (Subject, Caregiver, Investigator, Outcomes Assessor), Primary Purpose: Treatment
NCT00586300 Design: RCT Recruitment: Active, not recruiting	Other: Physical training program, Behavioral: Self-management training program, Other: Physical training and self-management training programs	Knee function, as measured by the ERGOS machine, Pain, as measured by the visual analogue scale (VAS) and the Pain Subscale of the Western Ontario and MacMasters Universities (WOMAC), Coping efficacy, self-efficacy, and health-related quality of life, as measured by the Client Satisfaction Questionnaire (CSQ), Arthritis self-efficacy scale, Positive and Negative Affect Schedule (PANAS,, SF-36 Health Survey, EuroQuol,Medical	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Open Label, Primary Purpose: Treatment

NCT ID Design Recruitment	Interventions	Outcome Measures	Study description
		Outcomes Social Support Survey	
NCT00970008 Design: RCT Recruitment: Active, not recruiting	Other: Swedish Massage 30 min 2x/wk x4 wks then 1x/wk x4 wks, Other: Swedish massage 60 min 2x/wk for 4 wks then 1x/wk for 4 wks, Other: Swedish Massage 30 min sessions 1x/wk for 8 wks, Other: Swedish Massage 60 min session 1x/wk for 8 wks	Improvement in WOMAC (Western Ontario Multipurpose Arthritis Centers) Knee and Hip Osteoarthritis Index Safety, Improvement in range of motion as measured by a goniometer. Improvement in physical function as measured by time in seconds to walk fifty (50) feet on a level straight surface. Reduction in pain as measured by the Visual Analog Scale (VAS) for pain.	Allocation: Randomized, Control: Dose Comparison, Endpoint Classification: Safety/Efficacy Study, Intervention Model: Parallel Assignment, Masking: Single Blind (Outcomes Assessor), Primary Purpose: Treatment
NCT00061490 Design: RCT Recruitment: Completed	Behavioral: Behavioral weight control and lifestyle exercise	Pain	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Factorial Assignment, Masking: Open Label, Primary Purpose: Treatment
NCT00979043 Design: RCT Recruitment: Completed	Behavioral: Dietary Weight-loss, Behavioral: Exercise	Self-reported physical function (WOMAC scale),6-minute walking distance, timed stair climbing, weight-loss, self-reported pain, progression of knee osteoarthritis, measured radiographically, chronic inflammation, measured according to CRP, IL-6, IL-6 soluble receptor, TNF-alpha, TNF alpha receptors 1 and 2,total mortality	Allocation: Randomized, Control: Active Control, Intervention Model: Parallel Assignment, Masking: Single Blind (Outcomes Assessor). Primary Purpose: Treatment
NCT00462319 Design: RCT Recruitment: Completed	Behavioral: Education, weight reduction and physical exercise	Weight, Physical Exercise in Leisure	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Open Label, Primary Purpose: Educational/Counseling/Training
NCT00951990 Design: RCT Recruitment: Completed	Behavioral: Ergometer Cycling, Behavioral: No ergometer cycling	WOMAC Physical Function, WOMAC Pain and Stiffness,SF-36,Patient satisfaction, Lequesne Hip or Knee Score	Allocation: Randomized, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Open Label, Primary Purpose: Treatment
NCT00000434 Design: RCT Recruitment: Completed	Behavioral: Fit and Strong!	Adherence to exercise, Pain and stiffness	Allocation: Randomized, Control: Active Control, Endpoint Classification: Safety, Efficacy Study, Intervention Model: Single Group Assignment, Masking: Open Label, Primary Purpose: Prevention

NCT ID Design Recruitment	Interventions	Outcome Measures	Study description
NCT00708734 Design: Control: Uncontrolled, Endpoint Classification: Safety/Efficacy Study, Intervention Model: Single Group Assignment, Masking: Open Label, Primary Purpose: Treatment Recruitment: Completed	Behavioral: functional exercise training	Gait and balance measures	Control: Uncontrolled, Endpoint Classification: Safety/Efficacy Study, Intervention Model: Single Group Assignment, Masking: Open Label, Primary Purpose: Treatment
NCT00288912 Design: RCT Recruitment: Completed	Behavioral: Health Education, Behavioral: Osteoarthritis Self-Management	Pain, Physical function, Affect (mood), Arthritis Self-Efficacy	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Single Group Assignment, Masking: Single Blind (Outcomes Assessor), Primary Purpose: Health Services Research
NCT00427843 Design: Allocation: Non-Randomized, Control: Uncontrolled, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Open Label, Primary Purpose: Treatment Recruitment: Completed	Behavioral: home exercise program for the hip abductor muscles	Walking variables: hip and knee abductor and adductor moments, Muscle strength measures: isometric and isokinetic peak torque measures for the hip abductor and adductor muscles, Radiographs: lower limb frontal plane alignment measures - limb alignment in degrees; grading of knee osteoarthritis severity (total score out of 13),Speed of performance on the Five-Times-Sit-to-Stand Test, Total score on the WOMAC pain subscale and the WOMAC physical function subscale, Total score obtained for the physical activity scale (PASE)	Allocation: Non-Randomized, Control: Uncontrolled, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Open Label, Primary Purpose: Treatment
NCT00265447 Design: RCT Recruitment: Completed	Behavioral: self-directed exercise, Behavioral: 3 months of aerobic conditioning	WOMAC Pain scale, WOMAC physical function scale, muscle performance flexibility, aerobic capacity, self-reported health status,AIMS2	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Open Label, Primary Purpose: Treatment
NCT00687726 Design: RCT Recruitment: Completed	Behavioral: Standing balance exercise, Behavioral: Isometric knee extension exercise	Knee osteoarthritis outcome scores (KOOS),Knee muscle peak torqu, Aggregate functional performance time	Allocation: Randomized, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Single Blind (Subject), Primary Purpose: Treatment
NCT00222300 Design: RCT Recruitment: Completed	Behavioral: Strength training program	Lower limb strength using a step test, Pain, stiffness and function using the WOMAC questionnaire. Function using the Timed Up-and-Go Test. Quality of life using the AQoL, Spatiotemporal measures of walking using an	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Single Blind, Primary Purpose: Treatment

NCT ID Design Recruitment	Interventions	Outcome Measures	Study description
		instrumented mat. Hip joint torques using 3-D motion analysis.	
NCT00049816 Design: RCT Recruitment: Completed	Behavioral: Walking exercise, Behavioral: Cycling Exercise	VAS, SF-36, WOMAC, and Activity Index questionnaires, Weight-bearing anterior-posterior (AP) and lateral x-rays of the knee, MRI imaging of the knee, Measurements of gait during level walking and stair climbing, Change in consumption of analgesics, reflecting the level of joint pain	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Open Label, Primary Purpose: Treatment
NCT00124462 Design: RCT Recruitment: Completed	Device: Brace and Shoe Insert, Device: Knee brace and shoe insert	Western Ontario and McMaster Osteoarthritis Index (WOMAC) Pain and Function Subscales (Most symptomatic treated knee),WOMAC Stiffness Subscale, Knee Injury and Osteoarthritis Outcome Score, Patient Global Assessment, Overall Knee Pain Visual Analogue Scale (V.A.S.) (Knee specific),SF36,Analgesic use (Medication log),Blinded knee exam by physician, Physician Global Assessment, Functional performance measures, Proprioception	Allocation: Randomized, Control: Placebo Control, Endpoint Classification: Efficacy Study, Intervention Model: Crossover Assignment, Masking: Double Blind (Subject, Caregiver, Investigator, Outcomes Assessor), Primary Purpose: Treatment
NCT00698412 Design: RCT Recruitment: Completed	Device: Cane	Pain - visual analogue scale, Function - Lequesne index, Function - WOMAC questionnaire, Quality of life - SF-36,Energy consumption (VO2)-gas analysis with and without cane during the 6MWT	Allocation: Randomized, Control: Active Control, Intervention Model: Parallel Assignment, Masking: Single Blind (Outcomes Assessor), Primary Purpose: Treatment
NCT00076453 Design: RCT Recruitment: Completed	Device: Lateral wedge orthotic shoe inserts, Device: Standard orthotic shoe inserts	Pain reduction, Reduction in loading of the medial knee	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Double Blind (Subject, Caregiver, Investigator, Outcomes Assessor), Primary Purpose: Treatment
NCT00331110 Design: RCT Recruitment: Completed	Device: Laterally-Wedged Insole with Ankle Strapping, Device: Laterally-Weged Insole	Hip-Knee-Ankle Alignment, Talar Tilt Angle, External Knee Adduction Moment, Pain Assessment, Gait Velocity, Center of Pressure, Foot Progression Angle	Allocation: Randomized, Control: Active Control, Intervention Model: Crossover Assignment, Masking: Open Label, Primary Purpose: Treatment
NCT00931749 Design: RCT Recruitment: Completed	Device: Low intensity pulsed ultrasound therapy, Device: Sham Low intensity pulsed	Medial compartment knee cartilage thickness and volume, Western Ontario and McMaster Osteoarthritis Index Score (WOMAC, Lower Extremity Functional Scale (LEFS),6	Allocation: Randomized, Control: Placebo Control, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Double Blind (Subject,

NCT ID Design Recruitment	Interventions	Outcome Measures	Study description
	ultrasound therapy	minutes walk test, Patient Â´s global assessment of disease severity (Likert scale 0- 5), Semi quantitative scoring of the knee joint, Pain at the end of the 6 minute walk test	Caregiver, Investigator, Outcomes Assessor), Primary Purpose: Treatment
NCT00375544 Design: Allocation: Non-Randomized, Control: Uncontrolled, Endpoint Classification: Safety/Efficacy Study, Intervention Model: Single Group Assignment, Masking: Open Label, Primary Purpose: Treatment Recruitment: Completed	Device: Low level light therapy	Decreased pain scores on the visual analog scale (VAS), Improved Western Ontario and McMaster Universities Osteoarthritis index (WOMAC) scores, Reduced use of over the counter (OTC) analgesics post therapy, Improved functionality as determined by measurable increases in knee range of motion (ROM), Increased exercise ability, No, or decreased knee effusion, Subject satisfaction, Durability of the Clinical Response	Allocation: Non-Randomized, Control: Uncontrolled, Endpoint Classification: Safety, Efficacy Study, Intervention Model: Single Group Assignment, Masking: Open Label, Primary Purpose: Treatment
NCT00653432 Design: RCT Recruitment: Completed	Device: MONOVISC	WOMAC Pain, Global Assessment	Allocation: Randomized, Endpoint Classification: Safety, Efficacy Study, Intervention Model: Parallel Assignment, Masking: Double Blind (Subject, Outcomes Assessor), Primary Purpose: Treatment
NCT00500448 Design: RCT Recruitment: Completed	Device: Neuromuscular Electrical Stimulation (Vectra Genisys 4 Channel Electrotherapy System)	Quadriceps Central Activation Ratio, Score on the WOMAC, Gait Measures (% time in double support, walking velocity, stride length, knee kinematics and kinetics)	Allocation: Randomized, Control: Placebo Control, Intervention Model: Parallel Assignment, Masking: Open Label, Primary Purpose: Treatment
NCT00417313 Design: RCT Recruitment: Completed	Device: periosteal electro-acupuncture (osteopuncture).	Changes in pain and disability, measured with the Western Ontario and McMaster Universities Osteoarthritis Index, changes in physical performance, psychosocial function (mood, self-efficacy, coping, fear, self-rated health),sleep and appetite	Allocation: Randomized, Control: Placebo Control, Endpoint Classification: Safety/Efficacy Study, Intervention Model: Parallel Assignment, Masking: Single Blind, Primary Purpose: Treatment
NCT00823888 Design: Non-Randomized Recruitment: Completed	Device: pneumatic brace	To undertake a clinical trial in patients with medial knee OA to determine whether provision of a pneumatic knee brace leads to a reduced adduction moment during the time of this treatment than during the use of a control treatment. To undertake a clinical trial in patients with medial knee OA to determine whether provision of a pneumatic knee brace leads to a lower pain score and improved function during the time of this treatment than during the use of a control treatment.	Endpoint Classification: Safety/Efficacy Study, Intervention Model: Crossover Assignment, Masking: Open Label, Primary Purpose: Treatment

NCT ID Design Recruitment	Interventions	Outcome Measures	Study description
NCT00105365 Design: Non-Randomized Recruitment: Completed	Device: Shoe insert	WOMAC pain scale	Allocation: Non-Randomized, Control: Uncontrolled, Endpoint Classification: Efficacy Study, Intervention Model: Single Group Assignment, Masking: Open Label, Primary Purpose: Treatment
NCT00032240 Design: RCT Recruitment: Completed	Device: Shoe Insert		Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Crossover Assignment, Masking: Double-Blind, Primary Purpose: Treatment
NCT00154765 Design: RCT Recruitment: Completed	Device: sling suspension exercises	Significant difference on joint reposition test (p<.05).No difference on functional ambulating test and WOMAC index (p>.05) between the 2 groups. In the training group, all measurements got significant improvement (p<.05) except one of the functional ambulating tests.	Allocation: Randomized, Control: Active Control, Endpoint Classification: Safety Study, Intervention Model: Parallel Assignment, Masking: Open Label, Primary Purpose: Educational/Counseling/Training
NCT01137266 Design: RCT Recruitment: Completed	Device: TENS	Determine the effect of TENS on pain and mobility for each treatment group separately. Also determine the differences of the effect of TENS by comparing different stimulation sites; relationship between skin resistance values before stimulation with the sensations during TENS. Explore whether there is a relation between physiological or psychological characteristics of patients and outcome of TENS and user satisfaction questionnaire	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Factorial Assignment, Masking: Double Blind (Subject, Investigator), Primary Purpose: Treatment
NCT00976079 Design: RCT Recruitment: Completed	Device: Transcutaneous electrical nerve stimulation (TENS)|Device: Placebo TENS	Quadriceps central activation ratio, Quadriceps torque production, WOMAC score, Visual analog pain score, Knee joint kinetics and kinematics	Allocation: Randomized, Control: Placebo Control, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Single Blind (Outcomes Assessor), Primary Purpose: Treatment
NCT00223795 Design: RCT Recruitment: Completed	Device: Walking with a cane or without a cane (Guardian offset handled cane)	Pain	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Crossover Assignment, Masking: Open Label, Primary Purpose: Treatment
NCT00420147 Design: RCT Recruitment: Completed	Device: wedged in shoe orthosis	knee abduction moment at baseline and one year, WOMAC at baseline and one year, 6 minute walk and stair climb pain and functional at baseline and one year	Allocation: Randomized, Control: Placebo Control, Endpoint Classification: Efficacy Study, Intervention Model: Single Group Assignment, Masking: Single Blind, Primary

NCT ID Design Recruitment	Interventions	Outcome Measures	Study description
			Purpose: Treatment
NCT00904319 Design: Non-Randomized Recruitment: Completed	Other: Aquatic Power Training	400 meter walk time, Lower limb function (LLFDI), Quality of life (KOOS), Knee osteoarthritis pain (KOOS pain scores, Vastus lateralis muscle bulk	Allocation: Non-Randomized, Control: Uncontrolled, Endpoint Classification: Safety/Efficacy Study, Intervention Model: Single Group Assignment, Masking: Open Label, Primary Purpose: Treatment
NCT00726492 Design: RCT Recruitment: Completed	Other: Continuous short wave diathermy (CSWD), Other: Hydrotherapy	Six-minute walk test, Visual analogue pain scale (10 cm line), Knee range of motion, Arthritis Impact Measurement Scale 2 (AIMS 2), Patient interview	Allocation: Randomized, Control: Dose Comparison, Endpoint Classification: Efficacy Study, Intervention Model: Factorial Assignment, Masking: Open Label, Primary Purpose: Treatment
NCT00917618 Design: Non-Randomized Recruitment: Completed	Other: Exercise, Other: Control	Preferred gait speed, WOMAC, KOS	Control: Placebo Control, Endpoint Classification: Safety/Efficacy Study, Intervention Model: Parallel Assignment, Masking: Open Label, Primary Purpose: Treatment
NCT01090375 Design: Non-Randomized Recruitment: Completed	Other: Exercise|Other: Non Exercise		Intervention Model: Parallel Assignment, Primary Purpose: Basic Science
NCT00581841 Design: Observational Recruitment: Completed	Other: Gait analysis, knee x-ray, and knee MRI	Day-to-day and inter/intra examiner repeatability of the techniques to be used in NIH grant R01 AR48768	Observational Model: Cohort, Time Perspective: Prospective
NCT00583245 Design: Non-Randomized Recruitment: Completed	Other: Gait Training	Changes in functional limitation assessed by the A) Summary Performance Score which includes balance tests, timed 4-meter walk, and timed chair stand test B) Timed stair climb C) Late Life Function and Disability Instrument (LLFDI) Questionnaire, Changes in the disability measure, a timed 400 meter walk, Changes in impairments assessed using the Knee and Osteoarthritis Outcome Score (KOOS) questionnaire	Allocation: Non-Randomized, Control: Uncontrolled, Endpoint Classification: Safety/Efficacy Study, Intervention Model: Single Group Assignment, Masking: Open Label, Primary Purpose: Treatment
NCT00642772 Design: Uncontrolled, Health Services Research Recruitment: Completed	Other: Group Physical Therapy	Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), which assesses pain, stiffness, and function	Control: Uncontrolled, Endpoint Classification: Safety/Efficacy Study, Intervention Model: Single Group Assignment, Masking: Open Label, Primary Purpose: Health Services Research
NCT00519922 Design: RCT Recruitment: Completed	Other: Kinesthesia, Balance, and Agility (KBA) Exercise, Other: Standard LE Strength Training	WOMAC Osteoarthritis Scale; Function subscale change pre to post intervention - KBA vs. standard strength training, WOMAC subscale change in Pain and in Stiffness pre to post intervention, Walking speed change in a timed Get Up & Go	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Open Label, Primary Purpose: Supportive Care

NCT ID Design Recruitment	Interventions	Outcome Measures	Study description
		Test pre to post intervention, Stair climbing and descending speed change pre to post intervention, Gait quality measures with the GAITRite walking mat and EMG, pre to post intervention, Spontaneous engagement in physical activity - change pre to post intervention as measured by the Human Activity Profile, Efficacy for exercise change pre to post intervention as measured by the Self-Efficacy for Exercise scale.	
NCT00979914 Design: RCT Recruitment: Completed	Other: Patient education programme	EQ5D,Arthritis self-efficacy scale, One-leg rising from sitting to standing, Grip Ability Test, Bipedal rising from sitting to standing, One-legged jump, Standing on one leg with eyes open and standing on one leg with eyes closed	Allocation: Randomized, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Single Blind (Outcomes Assessor), Primary Purpose: Treatment
NCT00759512 Design: RCT Recruitment: Completed	Other: Therapeutic Touch	SF36, WOMAC	Allocation: Randomized, Intervention Model: Parallel Assignment, Masking: Single Blind (Caregiver), Primary Purpose: Supportive Care
NCT00450606 Design: RCT Recruitment: Completed	Procedure: Balneotherapy and hydrotherapy	Quality of life evaluation at one, three and six months, Functional state of the patient at one, three and six months, Osteoarthritis severity at one, three and six months	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Single Blind, Primary Purpose: Treatment
NCT00322244 Design: RCT Recruitment: Completed	Procedure: Massage Therapy	Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) pain and functional scores, Visual Analog Scale (VAS),Range of motion, Time to walk 50 feet	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Single Group Assignment, Masking: Double-Blind, Primary Purpose: Treatment
NCT00000406 Design: RCT Recruitment: Completed	Procedure: Progressive resistance exercise		Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Single Group Assignment, Masking: Single Blind, Primary Purpose: Treatment
NCT00414557 Design: RCT Recruitment: Completed	Procedure: Quadriceps strengthening	Adduction moment, Time points: 0 and 13 weeks, Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) questionnaire, Numerical rating scales for pain, Quadriceps and hamstrings strength, Self-selected walking speed, Dynamic balance using step test, Physical function using stair climb test, Time points: 0 and 13 weeks	Allocation: Randomized, Control: Placebo Control, Endpoint Classification: Efficacy Study, Intervention Model: Factorial Assignment, Masking: Single Blind, Primary Purpose: Treatment

NCT ID Design Recruitment	Interventions	Outcome Measures	Study description
NCT01274546 Design: Observational Recruitment: Enrolling by invitation	Device: cruciate-retaining Foundation Knee system	Survivorship of the Device, Knee Society Score Evaluation, Short Form - 36,Oxford Knee Score Assessment, WOMAC Osteoarthritis Index, Range of Motion, Radiographic failure	Observational Model: Case-Only, Time Perspective: Prospective
NCT01017445 Design: RCT Recruitment: Enrolling by invitation	Other: Boonme stick exercise	VAS score, WOMAC, number of analgesic used	Allocation: Randomized, Control: Active Control, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Single Blind (Outcomes Assessor), Primary Purpose: Treatment
NCT01050465 Design: RCT Recruitment: Enrolling by invitation	Other: health information prescription	Seeking information using Medline Plus	Allocation: Randomized, Control: Active Control, Intervention Model: Parallel Assignment, Masking: Open Label
NCT01096524 Design: RCT Recruitment: Enrolling by invitation	Other: Standard Physiotherapy, Device: Kneehab	Efficacy of Kneehab in promoting early recovery of quadriceps performance following knee arthoplasty .Determine the effect of Kneehab in promoting quality of life measures and health economic outcomes, compared to controls.	Allocation: Randomized, Control: Active Control, Endpoint Classification: Safety/Efficacy Study, Intervention Model: Parallel Assignment, Masking: Single Blind (Outcomes Assessor), Primary Purpose: Treatment
NCT00988468 Design: RCT Recruitment: Terminated	Procedure: Manual Therapy, Behavioral: Therapeutic Exercise Behavioral: Video Observation	Suprapatellar effusion measured via diagnostic ultrasound, Pain Visual Analog Scale, Goniometric knee arc range of motion, Western Ontario and McMaster Universities Index of osteoarthritis of the knee	Allocation: Randomized, Control: Placebo Control, Intervention Model: Parallel Assignment, Masking: Double Blind (Investigator, Outcomes Assessor), Primary Purpose: Treatment
NCT00467337 Design: RCT Recruitment: Terminated	Procedure: Medial-Wedge Insole intervention	To assess symptoms, Visual Analog Scale (VAS) will be used for night pain, pain at rest and on movement. Lequesne index score and the WOMAC questionnaire will be applied at baseline and after 8 weeks by a blinded examiner. Antero-posterior conventional X-ray of knees and ankles were both performed under monopodalic load with and without insoles in order to measure femorotibial, talocalcaneal, and talus tilt angles.	Allocation: Randomized, Control: Placebo Control, Endpoint Classification: Safety/Efficacy Study, Intervention Model: Parallel Assignment, Masking: Double-Blind, Primary Purpose: Treatment
NCT00378339 Design: RCT Recruitment: Withdrawn	Device: gold berlocks	VAS|WOMAC	Allocation: Randomized, Control: Placebo Control, Endpoint Classification: Efficacy Study, Intervention Model: Single Group Assignment, Masking: Double-Blind, Primary Purpose: Treatment
NCT00300326 Design: RCT	Device: LPS Flex knee system	Gait kinetic and kinematic parameters at the knee (knee	Allocation: Randomized, Control: Historical Control,

NCT ID Design Recruitment	Interventions	Outcome Measures	Study description
Recruitment: Withdrawn		forces, moments and angles),knee pain, stiffness and function	Intervention Model: Parallel Assignment, Masking: Open Label, Primary Purpose: Treatment
ACTRN12606000224527 Design: RCT Recruitment: Completed	Water exercise, joint mobilization	Arthritis-specific quality of life, measured using the Arthritis Impact Measurement Scales version 2 (AIMS2). Primary timepoint week 9 of 10 week intervention. Pain: measured using short-form McGill Pain Questionnaire, returns scores for sensory pain, affective pain, total pain, present pain index, and visual analogue pain scale. Primary timepoint week 9 of 10 week intervention.	The effects of joint mobilization and water exercise on health-related quality of life in people with osteoarthritis
ACTRN12606000226505 Design: RCT Recruitment: Completed	Massage adjunct to usual care, joint mobilization adjunct to usual care	Arthritis-specific quality of life, measured using the Arthritis Impact Measurement Scales version 2 (AIMS2). Primary timepoint week 9 of 10 week intervention. Pain: measured using short-form McGill Pain Questionnaire, returns scores for sensory pain, affective pain, total pain, present pain index, and visual analogue pain scale. Primary timepoint week 9 of 10 week intervention.	Massage and joint mobilization for improving quality of life in people with osteoarthritis
ACTRN12606000524594 Design: RCT Recruitment: Completed	Quadriceps strengthening exercises by a project physiotherapist to be performed five days a week for twelve weeks at home	Adduction moment; Dynamic balance using step test; Numerical rating scales for pain; Physical function using stair climb test; Quadriceps and hamstrings strength; Self-selected walking speed; Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) questionnaire	The effects of knee malalignment and quadriceps strengthening on increasing the adduction moment in individuals with medial knee osteoarthritis
ACTRN12607000492459 Design: RCT Recruitment: Completed	Pulsed electrical stimulation	Pain (100 mm visual analogue scale); Function (Western Ontario and McMaster Universities Osteoarthritis Index); Patient global assessment (100 mm visual analogue scale)	A randomized placebo-controlled trial to determine the effectiveness of pulsed electrical stimulation (E-PES) in the management of osteoarthritis of the knee as measured by changes in pain, function and patient global assessment
ACTRN12609000395235 Design: RCT Recruitment: Not yet recruiting	Quadrapolar Neuromagnetic device, Magnetic Flux Generator (MFG), (Qmagnets tm)	Knee pain Visual Analogue scale; knee function WOMAC knee assessment	Effect and effect mechanisms of neuromagnetic treatment for pain of knee osteoarthritis QMOAK Trial
IRCT201008114549N1 Design: RCT Recruitment: Completed	Ultrasound in medial and lateral joint line that gradually was increased;	Pain with VAS scale Quality of life with WOMAC scale	The effect of Swedish massage on knee osteoarthritis

NCT ID Design Recruitment	Interventions	Outcome Measures	Study description
	trans-cutaneous electrical nerve stimulation; strengthening exercises for quadriceps Swedish massage: tapping, petrissage, traction, Eflurage.		
ISRCTN12912789 Design: RCT Recruitment: Completed	TENS intervention	Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) function subscale; Total Western Ontario and McMaster Universities Osteoarthritis Index score and pain and stiffness subscale scores	Effects of Transcutaneous Electrical Nerve Stimulation (TENS) and exercise on knee Osteoarthritis
ISRCTN18518978 Design: RCT Recruitment: Completed	MagnaMax® static magnetic device	Not provided at time of registration	Application of static magnetic fields versus copper for the relief of pain in osteoarthritis: a randomised double-blind placebo controlled trial MACROPOD (Magnetic And Copper therapy for the Relief Of Pain in Osteoarthritis: a randomised Double-blind placebo-controlled trial)
ISRCTN85231954 Design: RCT Recruitment: Completed	Home-based exercise program, with particular emphasis on strengthening the quadriceps femoris muscle. Home-based quadriceps femoris neuromuscular electrical stimulation.	36-item Short Form Health Survey (SF-36) and Western Ontario McMaster University Arthritis index (WOMAC) scores; Isometric quadriceps strength ; Isokinetic strength at 60 degrees per second in knee extension and flexion measured bilaterally ; functional testing including a timed 25-metre walking test, a timed stair climbing test and a timed up/down seated test; Quadriceps femoris cross-sectional area on MRI imaging	The effects of resistance training and neuromuscular electrical stimulation (NMES) in advanced knee osteoarthritis - a comparison of the outcomes of a 6-week program of resistance training versus a 6-week program of NMES versus controls: a prospective, single blinded, randomized, interventional/treatment, efficacy study
ISRCTN93462890 Design: RCT Recruitment: Completed	A valgus knee brace which is classed as a direct orthotic ; a lateral wedged insole which is classed as an indirect orthotic	Knee adduction moment and knee kinematics and kinetics	Biomechanical assessment of medial compartment knee osteoarthritis before and after surgery

Appendix D. Review Questions According to Population Intervention Comparator Outcomes Timing Settings (PICOTS) Framework

Question 1

What are the effectiveness and comparative effectiveness of available physical therapy interventions (without drug treatment) for adult patients with chronic knee pain due to OA on intermediate and patient-centered outcomes when compared to no active treatment or another active physical therapy modality?

a. Which patient characteristics are associated with the benefits of examined interventions of physical therapy on intermediate and patient-centered outcomes?
b. Do changes in intermediate and patient-centered outcomes differ by the dose, duration, intensity, and frequency of examined interventions of physical therapy?
c. Do changes in intermediate and patient-centered outcomes differ by duration of examined interventions of physical therapy and the time of followup?

- **Population**
  - Adults with knee pain secondary to knee osteoarthritis in outpatient settings, including home-based therapy.
  - Chronic OA is defined as meeting diagnostic criteria and having symptoms of OA for >2 months.

  Excluded:
  - Adults with knee OA who had knee arthroplasty on the "study limb" within 6 months before the study
  - Adults with osteonecrosis
  - Adults with acute knee injuries
  - Adults with inflammatory arthritis
  - Adults with arthritis secondary to systemic disease
  - Adults with physical therapy treatment combined with drug treatment

  Relevant population characteristics that may modify treatment effects:
  - Age
  - Gender
  - Race
  - Baseline activities of daily living (ADL)/instrumental activities of daily living (IADL)
  - Disability
  - Comorbidity
  - Obesity
  - Concomitant/prior treatments including history of prior knee surgery or injury
  - Presence of significant skeletal abnormality
  - Activity level
  - Occupation

- **Intervention**
  Physical therapy (monotherapy with one physical therapy intervention or combined physical therapy interventions). Studies examining the marginal effects of drugs combined with physical therapy will be excluded.

Physical therapy interventions eligible for review

General Modality	Specific Intervention	Definition
Patient/client-related instruction		
Instruction, education, and training of patients/clients and caregivers	Current condition Enhancement of performance Health, wellness, and fitness Plan of care Risk factors for pathology/ pathophysiology, impairments, functional limitations, or disabilities	
Therapeutic exercise	Aerobic capacity/endurance conditioning or reconditioning	Increased workload over time Walking programs Aquatic therapy
	Flexibility exercises	Muscle lengthening Range of motion Stretching
	Gait and locomotion training	Gait training Implement and device training
	Strength, power, and endurance training for limb muscles	Active assistive, active, and resistive exercises Quadriceps strengthening Aquatic programs Standardized, programmatic, complementary exercise approaches Task-specific performance training Body mechanics and postural stabilization Body mechanics training
	Balance, coordination, and agility training	Neuromuscular education or re-education Posture awareness training
	Muscle relaxation technique for pain management	
Functional training in self-care, home management, work, community, and leisure integration or reintegration (including ADL, IADL, work hardening, and work conditioning)	ADL training	
	Devices and equipment use and training	Assistive and adaptive device or equipment training during ADL and IADL Orthotic, protective, or supportive device or equipment training during ADL and IADL
	Functional training programs	Simulated environments and tasks Task adaptation
	IADL training	
	Injury prevention or reduction	Injury prevention education during self-care, home management, work, community, and leisure integration or reintegration Injury prevention or reduction with use of devices and equipment Safety awareness training during self-care, home management, work, community, and leisure integration and reintegration

General Modality	Specific Intervention	Definition
Manual therapy techniques (Including mobilization/ manipulation)	Detailed examination to reveal impaired movements	
	Manual techniques with reinforcing exercise to improve movement	
	Manual traction	
	Massage	Connective tissue massage Therapeutic massage
	Mobilization/manipulation	Soft tissue Knee joint, other joints
	Passive range of motion	
Prescription, application of devices and equipment	Adaptive devices	Raised toilet seats
	Assistive devices	Canes Crutches Walkers Long-handled reachers Power devices Static and dynamic splints Grab bars and tub chairs
	Orthotic devices	Braces Shoe inserts Splints
	Protective devices	Braces Protective patellar taping
	Supportive devices	Supportive taping
Electrotherapeutic interventions	Electrotherapeutic delivery of medications	Iontophoresis
	Electrical stimulation	Electrical muscle stimulation Functional electrical stimulation High-voltage pulsed current Neuromuscular electrical stimulation Transcutaneous electrical nerve stimulation
Physical agents and mechanical interventions	Nonthermal agents	Pulsed electromagnetic fields
	Aquatic therapy	Pools
	Sound agents	Ultrasound
	Thermotherapy	Dry heat Hot packs Diathermy Cold modalities
	Cryotherapy	Cold packs Ice massage

Abbreviations: ADL = activities of daily living; IADL = instrumental activities of daily living.

- **Comparator**
  Analysis of efficacy:
  - No active treatment (sham stimulation)

  Analysis of comparative effectiveness:
  - Active control as above
  - Monotherapy with one physical therapy intervention compared to combined therapy of more than physical therapy interventions

- **Outcomes**
  Patient-centered outcomes:
  - Pain
  - Independence in ADL and IADL, with or without devices and equipment
  - Ability to assume or resume required self-care, home management, work, community, and leisure roles
  - Walking, general physical activity
  - Patient satisfaction global assessment
  - Time to return to work/activities
  - Quality of life

  Intermediate outcomes:
  - Joint swelling, inflammation, or restriction
  - Impaired physical performance
  - Tolerance of positions and activities

Question 2

What is the association between changes in intermediate outcomes with changes in patient-centered outcomes after physical therapy interventions?

a. What is the validity of the tests and measures used to determine intermediate outcomes of physical therapy on OA in association with patient-centered outcomes?
b. Which intermediate outcomes meet the criteria of surrogates for patient-centered outcomes?
c. What are minimal clinically important differences of the tests and measures used to determine intermediate outcomes?

- **Population**
  Same as KQ1

- **Interventions**
  Tests and measurements (intermediate outcomes of physical therapy):
  - Muscle performance or strength tests:
    - Manual muscle test
    - Hand-held dynamometer
    - Isokinetic dynamometer
    - Knee goniometry
    - Lower extremity activity profile
    - Measure of balance including single-leg stance test or tandem stance
    - Aerobic capacity
  - Markers of inflammation:
    - Girth measurements for swelling/edema
  - Self-reported patient scales and questionnaires:
    - Knee Pain Screening Tool (KNEST)
    - Extra Short Musculoskeletal Function Assessment questionnaire (XSMFA-D)
    - 12-item Oxford Knee Score

- **Comparator**
  - Normal ranges of the tests and measurements described above
- **Outcomes**

  Patient-centered outcomes:
  - Independence in activities of daily living (Activities of Daily Living Scale of the Knee Outcome Survey)
    - 6 Minute Walk Test
    - Gait Speed (potential surrogate for clinical outcomes)
    - Functional Status Index
    - Timed Get Up and Go Test
    - Fifty-foot Timed Walk Measure
    - Aggregate Functional Performance Time Measure
    - Lequesne Index for Knee Osteoarthritis
    - Algofunctional Index for Knee Osteoarthritis
    - Lower Extremity Functional Scale (LEFS)
  - Time to return to work/activities
  - Quality of life measured with:
    - Short Form 36 (SF-36)
    - Mapping the Osteoarthritis Knee and Hip Quality of Life (OAKHQOL)
  - Pain measured with:
    - Anterior Knee Pain Questionnaire
    - Knee pain osteoarthritis Visual Analogue Scale (VAS)
    - Knee Pain Scale (KPS)
    - Western Ontario McMaster Osteoarthritis Index (WOMAC) Pain subscale
    - Patient Global Assessment
    - Arthritis Impact Measurement Scales
    - Outcome Measures in Rheumatology
    - OMERACT outcome measures including:
      - Pain
      - Physical function
      - Patient global assessment
      - Joint imaging (for studies of 1 year or longer)
      - Health-related quality of life measure
      - Physician global assessment
  - Patient Specific Functional Scale (PSFS)
  - Knee Injury and Osteoarthritis Outcome Score (KOOS)
  - Outpatient Physical Therapy Improvement in Movement Assessment Log (OPTIMAL)

Question 3

What are the harms from physical therapy interventions available for adult patients with chronic knee pain due to osteoarthritis when compared to no active treatment or active controls?

a. Which patient characteristics are associated with the harms of examined physical therapy interventions?
b. Do harms differ by the duration of the treatment and time of followup?

- **Population**
  Same as KQ 1
- **Interventions**
  Same as KQ 1
- **Comparators**
  Same as KQ 1
- **Outcomes**
  All reported adverse events

Questions 1–3:

- **Timing**
  - At the end of the treatment
  - Short-term outcomes (0-6 weeks up to 3 months)
  - Long-term outcomes (3-6 months or >6 mpnths)
- **Settings**
  Outpatient and home-based care settings

Appendix E. Data Abstraction Forms

Abstraction Form for Questions 1-3

What are the effectiveness and comparative effectiveness of physical therapy interventions available for adult patients with chronic knee pain due to osteoarthritis on intermediate and patient-centered outcomes when compared to no active treatment or another active physical therapy modality?
What are the harms from physical therapy interventions available for adult patients with chronic knee pain due to osteoarthritis when compared to no active treatment or active controls?

(Complete for each study)

Number of the study in the database (PubMed ID, Cochrane accession number, ISBN)_____
First author_____
Year of the publication_____
Purpose/aim of study_____
Sponsorship_____
Conflict of interest_____

Variable label	**Format**
Year the event occurred	1960-2010
Journal of the publication	PubMed abbreviation
Database to identify study	Database to identify study
Multicenter study	Check if multicenter
Country of the study	As reported
How project was funded	Industry, government, industry+government, other, or not reported
Ethical approval of study	Ethical approval of study by the local or federal IRB
Consent of participants	Consent of participants
How long was the treatment	Weeks
Time to measure the outcome from randomization in weeks to reflect off treatments measures	Weeks
Type to measure length of followup	Median or mean, preferably median
Total length of followup	Months (median or mean)
Total length of followup	Range
Eligibility criteria of age	Eligibility criteria for age
Inclusion criteria	As reported all inclusion criteria
Exclusion criteria	Exclusion criteria as reported
Masking of the treatment status	Double-blind, single blind, triple blind, open label, not reported
Intention to treat analysis preplanned	Preplanned ITT Executed ITT (all patients were analyzed)
Allocation concealment	Not reported, unclear, adequate if
Adequacy of allocation concealment	Adequate - Centralized or pharmacy-controlled randomization; Serially-numbered identical containers; on-site computer based system with a randomization sequence that is not readable until allocation Unclear - Uncertainty about whether the allocation was adequately concealed allocation was adequately concealed Not adequate - The allocation was definitely not adequately concealed (open random number lists or quasi-randomization such as alternate days, odd/even date of birth, or hospital number, serially numbered envelopes)

Variable label	Format
Randomization scheme	Central computerized randomization, simple table with random numbers, stratified
Details on randomization scheme	Permuted blocks, stratified ratios, other
Reporting of baseline data of the subjects	Reporting of baseline data of the subjects
Adequacy of randomization	Patients did not differ at baseline by primary set of confounding
Details on crossover cases	As reported or not available
Baseline status of subjects	Age (mean or median)
Baseline range of age in the study	Range of age groups in the study
Baseline status of subjects	% of disabled; baseline ADL/IADL disability
Baseline status of subjects	Other joint diseases, other diseases, as reported
Baseline status of subjects	Prior surgery, prior drug treatments, prior physiotherapy
Baseline status of subjects	Baseline restrictions in activity
Baseline status of subjects	As reported
Health care setting	Primary care; physiotherapy clinic, pain clinic, as reported
% of loss of follow p totally	Empty if not reported
% of loss of followup in active group	Empty if not reported
% of loss of followup in control group	Empty if not reported
Sample size of the study	
Size of subgroup	
Racial groups	White-% Black-% Asian-%
Ethnic groups	Proportion of African Americans Arabs Asian Americans Hispanic Americans Mexican Americans Jews
Type of treatment in active group	Ultrasound, etc
Type of treatment in control group	Shame or no specific intervention
Characteristics of treatment in active group	
Treatment group	Exercise, ultrasound, etc
Monotherapy or combined treatment in active group	Monotherapy or combined
Monotherapy or combined treatment in control group	Monotherapy or combined
Description of treatment in active group	Physio+drug+education….
Description of treatment in control group	Physio+drug+education….
Intensity of treatment in active group	How many times per week
Intensity of treatment in control group	How many times per week
Dose of treatment in active group	How long per treatment
Dose of treatment in control group	How long per treatment
Type of comparison	After treatment, after vs. baseline
Type of analysis: total sample, subgroup	Total, post hoc subgroup, planned subgroup
Education	As reported
Walking programs, Aquatic therapy, Gait and locomotor training, Increased workload over time	WALK, AQUATIC
Stretching, Range of motion, Muscle lengthening	STRETCH, ROM, LENGTHEN
Gait training, Implement and device training	GAIT
Aquatic programs, Quadriceps strengthening, Active assistive, active, and resistive exercises, Standardized, programmatic, complementary exercise approaches, Task-specific performance training, Body mechanics and postural stabilization, Body mechanics training	QUATIC,STRENGTHEN, ACTIVE, RESISTIVE
Posture awareness training, Neuromuscular education or re-education	BALANCE, POSTURE
Muscle relaxation technique	RELAXATION
Biofeedback	BIOFEEDBACK
Any of 7 above	Y or N

Variable label	Format
Functional Training in Self-Care, Home Management, Work, Community, and Leisure Integration	Functional Training in Self-Care, Home Management
Massage, Manual traction, Mobilization/manipulation	Massage, Manual traction, Mobilization/manipulation
Canes, Crutches, Walkers, Shoe inserts, Splints, Braces, Taping	Canes, Crutches, Walkers, Shoe inserts, Splints, Braces, Taping
Electrical muscle stimulation (EMS), Functional electrical stimulation (FES), High voltage pulsed current (HVPC), Neuromuscular electrical stimulation (NMES), Transcutaneous electrical nerve stimulation (TENS)	TENS, EMS, NMES
Pulsed electromagnetic fields, Aquatic therapy, Ultrasound, Thermotherapy, Diathermy, Ice massage	PEMF, Aquatic therapy, Ultrasound, Thermotherapy, Diathermy, Ice massage
	PEMF, US, Diathermy, NA, other
Grouping variable that could modify the effect of the treatment	As reported
Type of grouping variable: patient characteristics or severity	Patient characteristics or severity
Number of subjects in active group	Number of subjects in active group
Number of subjects in control group	Number of subjects in control group
Type of outcome	Pain, function, adverse event
Definition of outcomes	As reported
Type of categorical outcomes (events)	As reported with all details including type of the outcomes, measure of the outcomes
Number of events in active group	Number of events in active group
Number of events in control group	Number of events in control group
Number of subjects in active group with no events	Number of subjects in active group with no events
Number of subjects in control group with no events	Number of subjects in control group with no events
Type of relative risk estimation	Type of relative risk estimation that is reported: OR, RR, HR, mean difference
Mean of the outcome in active group	As reported
Mean of the outcome in control group	As reported
Standard deviation in active group	As reported
Standard deviation in control group	As reported
Relative risk of outcome	Relative risk of outcome as reported
Relative risk of outcome	Relative risk of outcome by calculation
SE of regression coefficient	SE of regression coefficient
Low 95% CI of relative risk	Low 95% CI of relative risk
Upper 95% CI of relative risk	Upper 95% CI of relative risk
Number needed to treat to achieve one outcome	Number needed to treat to achieve one outcome
Low 95% CI NNT to achieve one outcome	Low 95% CI NNT to achieve one outcome
Upper 95% CI NNT to achieve one outcome	Upper 95% CI NNT to achieve one outcome
Number of attributable events/1000 treated	Number of attributable events/1000 treated
Low 95% CI of number of attributable events/1000 treated	Low 95% CI of numer of attributable events/1000 treated
Upper 95% CI of number of attributable events/1000 treated	Upper 95% CI of number of attributable events/1000 treated

Abstraction Form for question 2

What is the association between changes in intermediate outcomes with changes in patient-centered outcomes after physical therapy interventions?

a. What is the validity of the tests and measures used to determine intermediate outcomes of PT on OA in association with patient-centered outcomes?
b. Which intermediate outcomes meet the criteria of surrogates for patient-centered outcomes?
c. What are minimal clinically important differences of the tests and measures used to determine intermediate outcomes?

(Complete for each study)

Number of the study in the database (PubMed ID, Cochrane accession number, ISBN)_____
First author_____
Year of the publication_____
Purpose/aim of study_____
Sponsorship_____
Conflict of interest_____

Variable label	**Format**
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Consent of participants	Consent of participants
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Time to measure the outcome from randomization in weeks to reflect off treatments measures	Weeks
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Total length of followup	Months(median or mean)
Total length of followup	Range
Eligibility criteria of Age	Eligibility criteria for age
Inclusion criteria	As reported all inclusion criteria
Exclusion criteria	Exclusion criteria as reported
Masking of the treatment status	Double-blind, single blind, triple blind, open label, not reported
Intention to treat analysis preplanned	Preplanned ITT Executed ITT (all patients were analyzed)
Allocation concealment	Not reported, unclear, adequate if
Adequacy of allocation concealment	Adequate - Centralized or pharmacy-controlled randomization; Serially-numbered identical containers; on-site computer based system with a randomization sequence that is not readable until allocation Unclear - uncertainty about whether the allocation was adequately concealed allocation was adequately concealed Not adequate - the allocation was definitely not adequately concealed (open random number lists or quasi-randomization such as alternate days, odd/even date of birth, or hospital number, serially numbered envelopes)

Randomization scheme	Central computerized randomization,simple table with random numbers, stratified
Details on randomization scheme	Permuted blocks, stratified ratios, other
Reporting of baseline data of the subjects	Reporting of baseline data of the subjects
Adequacy of randomization	Patients did not differ at baseline by primary set of confounding
Details on crossover cases	As reported or not available
Baseline status of subjects	Age (mean or median)
Baseline range of age in the study	Range of age groups in the study
Baseline status of subjects	% of disabled; baseline ADL /IADL disability
Baseline status of subjects	Other joint diseases, other diseases, as reported
Baseline status of subjects	Prior surgery, prior drug treatments, prior physiotherapy
Baseline status of subjects	Baseline restrictions in activity
Baseline status of subjects	As reported
Health care setting	Primary care; physiotherapy clinic, pain clinic, as reported
% of loss of followup totally	Empty if not reported
% of loss of followup in active group	Empty if not reported
% of loss of followup in control group	Empty if not reported
Sample size of the study	
Size of subgroup	
Racial groups	White-% Black-% Asian-%
Ethnic groups	Proportion of African Americans Arabs Asian Americans Hispanic Americans Mexican Americans Jews
Index diagnostic Methods	As reported
Label for index test	
Reference standard	As reported
Label for reference standard	
Condition to test	Score from worse to best for each scale
Sample size for each hypothesis	
True positive	
False positive	
False negative	
True negative	
Sensitivity	
Specificity	
Positive predictive value	
Lower 95% CI positive predictive value	
Upper 95% CI positive predictive value	
Negative predictive value	
Accuracy	
Prevalence of tested condition	
Reported sensitivity	
Reported specificity	
ROC curve	
Testing of reliability or validity	
Test-retest reliability	
Correlation	
P value	
Intermediate outcome	
Clinical outcomes	
Type of regression	
Regression coefficient and standard error in log scale	
Conditions	

Domain	
Clinical outcome	
Methods to consider minimal clinically important differences	
Definition of minimal clinically important difference	

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Appendix Table F1. FDA review of medical devices for physical therapy interventions in adults with knee OA

Review ID	Medical device	Year	Link
K983228	Bionicare Stimulator System, Model BIO-1000 510(K) Summary	1998	http://www.accessdata.fda.gov/cdrh_docs/pdf/K983228.pdf
K971437	510(K) Summary - Bionicare Stimulator System, Model BIO-1000	1997	http://www.accessdata.fda.gov/cdrh_docs/pdf/K971437.pdf
K062325	510(K) Summary RS-4i Sequential Stimulator	2007	http://www.accessdata.fda.gov/cdrh_docs/pdf6/K062325.pdf
K052625	BioniCare®, Stimulator Model BIG-IOOO TM	2005	http://www.accessdata.fda.gov/cdrh_docs/pdf5/K052625.pdf
K042912	510(k) Summary- InterX5000	2008	http://www.accessdata.fda.gov/cdrh_docs/pdf4/K042912.pdf
K032652	510(K) Summary RS-4i Muscle Stimulator	2003	http://www.accessdata.fda.gov/cdrh_docs/pdf3/K032652.pdf
K030332	510(K) Summary BioniCare Stimulator, Model BIO- 1OOO	2003	http://www.accessdata.fda.gov/cdrh_docs/pdf3/K030332.pdf

Appendix Table F2. Registered in clinicaltrials.gov closed studies of physical therapy interventions in adults with knee OA

NCT ID Design Recruitment	Interventions	Outcome Measures	Publications
NCT00613678 Design: RCT Recruitment: Active, not recruiting	Behavioral: Activity Strategy Training|Behavioral: Education	Self-reported pain	Murphy, 2008[1]
NCT00522106 Design: RCT Recruitment: Active, not recruiting	Behavioral: Behavioral graded activity,Other: Exercise therapy	Pain, Physical function, Patient global assessment, Tiredness, Stiffness, Joint mobility, Muscle strength, Patient-specific physical function, Walking test ,Pain coping,L ocus of control, Quality of life, Exercise adherence, Social support, Level of performed activities	Pisters, 2010[2], Pisters, 2010[3]
NCT00324857 Design: RCT Recruitment: Active, not recruiting	Behavioral: Decision Aid Video,Behavioral: Motivational Interviewing	Effectiveness of the proposed intervention among AA patients to improve willingness to consider knee replacement, to improve understanding of its risks, benefits and expected outcomes, and to increase primary care referrals for surgical evaluation. To examine and compare the effectiveness of the proposed intervention strategies to increase AA patient likelihood of receiving knee replacement within 12 months of the intervention.	
NCT00381290 Design: RCT Recruitment: Active, not recruiting	Behavioral: Diet,Behavioral: Exercise	Inflammatory biomarkers, Knee joint loads, Bone marrow lesions, Articular cartilage, Function,Pain, Mobility, Change in quadriceps' strength and disease progression as a function of knee alignment	Messier, 2009[4]
NCT00655941 Design: RCT Recruitment: Active, not recruiting	Behavioral: Dietary instruction, Other: Exercise	Pain|OMERACT-OARSI response criterion, Weight change, Gait analysis, MRI, Ultrasound,Collagen markers, Metabolic syndrome, KOOS	Riecke, 2010[5]
NCT00197977 Design: RCT Recruitment: Active, not recruiting	Behavioral: Educational program to address patients' expectations	The primary outcome is the within-patient change between pre and post program scores measured by the Hospital for Special Surgery Total Knee Replacement Expectations Survey. The secondary outcome is to compare patient-reported symptoms with radiographic ratings of disease activity.	
NCT00305890 Design: RCT Recruitment: Active, not recruiting	Behavioral: Lifestyle Behavioral Weight Management Program,Behavioral: Pain-Coping Skills Training,Other: Standard Care	Psychological impairment, Physical disability, Joint stiffness, Activity level, Physical activities, Physiological measures of disease activity, Gait measures	
NCT00248105 Design: RCT Recruitment: Active, not recruiting	Behavioral: Lifestyle Physical Activity Management	Function, Quality of Life	
NCT00465660 Design: RCT Recruitment: Active, not recruiting	Behavioral: Progressive resistance training	Articular cartilage morphology following 6 months high intensity progressive resistance training,Muscle and fat cross-sectional area (CSA) (pre and post), Muscle strength, power, endurance, and	

Appendix Table F2. Registered in clinicaltrials.gov closed studies of physical therapy interventions in adults with knee OA (continued)

NCT ID Design Recruitment	Interventions	Outcome Measures	Publications
		contraction velocity (pre, 3 months, & post), Medications (pre, 3 months, & post), Body composition (pre, 3 months, & post), Balance; Physical function (pre, 3 months, & post), Questionnaires (pre, 3 months, & post): Habitual exercise (PASE), WOMAC index (pain, stiffness and functional ability), Depressive symptoms (Depression Scale), Quality of life (SF36), Confidence performing physical activity (Ewart) Demographics	
NCT01003925 Design: RCT Recruitment: Active, not recruiting	Behavioral: Standard of care for osteoarthritis treatment, Behavioral: Conjoint Analysis for Osteoarthritis	Change in osteoarthritis treatment (for instance, change from an NSAID to capsaicin cream) as measured by follow-up telephone interview, Ease of use, understandability, and suggestions for improvement of the computer decision aid	
NCT00123994 Design: RCT Recruitment: Active, not recruiting	Behavioral: Tai Chi classes, Behavioral: Hydrotherapy classes	Self-reported pain and function (WOMAC), General health status (SF-36), Psychological well being (DASS),Patient global assessment (100mm visual analogue scale [VAS]), Physical performance: 50 feet walk time, stair time	Fransen, 2007[6]
NCT00763386 Design: RCT Recruitment: Active, not recruiting	Device: NexGen LPS-Flex Fixed Bearing Knee, Device: NexGen Legacy Posterior Stabilized Knee	Postoperative range of motion, Return to function	
NCT00381563 Design: RCT Recruitment: Active, not recruiting	Device: Patellofemoral realigning knee brace, Device: Non-aligning knee brace	Change in pain on the visual analog scale (VAS),Western Ontario and McMaster Osteoarthritis Index (WOMAC), Knee Injury and Osteoarthritis Outcome Score (KOOS), Physical function, Pain with activity, Patient assessment, Short Form (36) Health Survey (SF-36), Analgesic use, Blinded knee, Physician assessment, Functional performance, X-ray, Physical activity, Physical Activity Scale for the Elderly (PASE), Knee strength	Hunter, 2011[7]
NCT00199914 Design: RCT Recruitment: Active, not recruiting	Device: Shortwave diathermy	The change in Western Ontario and McMaster Universities Osteoarthritis (WOMAC) Index. The changes in the following parameters: gait speed (calculated from the time spending for 100-meter walk), global improvement, patient's satisfaction to the treatment	Rattanachaiyanont, 2008[8]
NCT01099371 Design: RCT Recruitment: Active, not recruiting	Other: exercise	Pain assessed on a 10-point numeric pain scale, Disability assessed on WOMAC, Quality of life assessed on the SF-36, Six-minute walk test	
NCT00844558 Design: RCT Recruitment: Active, not recruiting	Other: Gait Training, Other: Power Training, Other: Control	Advanced Lower Limb Function: Late Life Function and Disability Instrument, Impairment: knee pain, stair climb power, Functional limitation: timed stair climb, summary performance score, long distance corridor walk,Knee-Related Quality of Life	
NCT00586300 Design: RCT	Other: Physical training program, Behavioral:	Knee function, as measured by the ERGOS machine, Pain, as measured by	McKnight, 2010[9], Farr, 2010[10], Farr,

Appendix Table F2. Registered in clinicaltrials.gov closed studies of physical therapy interventions in adults with knee OA (continued)

NCT ID Design Recruitment	Interventions	Outcome Measures	Publications
Recruitment: Active, not recruiting	Self-management training program, Other: Physical training and self-management training programs	the visual analogue scale (VAS) and the Pain Subscale of the Western Ontario and MacMasters Universities (WOMAC), Coping efficacy, self-efficacy, and health-related quality of life, as measured by the Client Satisfaction Questionnaire (CSQ), Arthritis self-efficacy scale, Positive and Negative Affect Schedule (PANAS, SF-36 Health Survey, EuroQuol, Medical Outcomes Social Support Survey	2008[11]
NCT00970008 Design: RCT Recruitment: Active, not recruiting	Other: Swedish Massage 30 min 2x/wk x4 wks then 1x/wk x4 wks,Other: Swedish massage 60 min 2x/wk for 4 wks then 1x/wk for 4 wks,Other: Swedish Massage 30 min sessions 1x/wk for 8 wks,Other: Swedish Massage 60 min session 1x/wk for 8 wks	Improvement in WOMAC (Western Ontario Multipurpose Arthritis Centers) Knee and Hip Osteoarthritis Index Safety. Improvement in range of motion as measured by a goniometer.Improvement in physical function as measured by time in seconds to walk fifty (50) feet on a level straight surface. Reduction in pain as measured by the Visual Analog Scale (VAS) for pain.	
NCT00061490 Design: RCT Recruitment: Completed	Behavioral: Behavioral weight control and lifestyle exercise	Pain	
NCT00979043 Design: RCT Recruitment: Completed	Behavioral: Dietary Weight-loss,Behavioral: Exercise	Self-reported physical function (WOMAC scale), 6-minute walking distance|timed stair climbing,weight-loss, self-reported pain, progression of knee osteoarthritis, measured radiographically,chronic inflammation, measured according to CRP, IL-6, IL-6 soluble receptor, TNF-alpha, TNF alpha receptors 1 and 2,total mortality	
NCT00462319 Design: RCT Recruitment: Completed	Behavioral: Education, weight reduction and physical exercise	Weight|Physical Exercise in Leisure	Ravaud, 2009[12]
NCT00951990 Design: RCT Recruitment: Completed	Behavioral: Ergometer Cycling|Behavioral: No ergometer cycling	WOMAC Physical Function,WOMAC Pain and Stiffness,SF-36,Patient satisfaction,Lequesne Hip or Knee Score	
NCT00000434 Design: RCT Recruitment: Completed	Behavioral: Fit and Strong!	Adherence to exercise,Pain and stiffness	
NCT00708734 Design: Control: Uncontrolled,Endpoint Classification: Safety/Efficacy Study, Intervention Model: Single Group Assignment, Masking: Open Label, Primary Purpose: Treatment Recruitment: Completed	Behavioral: functional exercise training	Gait and balance measures	

Appendix Table F2. Registered in clinicaltrials.gov closed studies of physical therapy interventions in adults with knee OA (continued)

NCT ID Design Recruitment	Interventions	Outcome Measures	Publications
NCT00288912 Design: RCT Recruitment: Completed	Behavioral: Health Education, Behavioral: Osteoarthritis Self-Management	Pain, Physical function, Affect (mood), Arthritis Self-Efficacy	Allen, 2010[13]
NCT00427843 Design: Allocation: Non-Randomized, Control: Uncontrolled, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Open Label, Primary Purpose: Treatment Recruitment: Completed	Behavioral: home exercise program for the hip abductor muscles	Walking variables: hip and knee abductor and adductor moments, Muscle strength measures: isometric and isokinetic peak torque measures for the hip abductor and adductor muscles, Radiographs: lower limb frontal plane alignment measures - limb alignment in degrees; grading of knee osteoarthritis severity (total score out of 13), Speed of performance on the Five-Times-Sit-to-Stand Test,Total score on the WOMAC pain subscale and the WOMAC physical function subscale,Total score obtained for the physical activity scale (PASE)	Sled, 2010[14]
NCT00265447 Design: RCT Recruitment: Completed	Behavioral: self-directed exercise, Behavioral: 3 months of aerobic conditioning	WOMAC Pain scale,WOMAC physical function scale, muscle performance,flexibility, aerobic capacity, self-reported health status, AIMS2	
NCT00687726 Design: RCT Recruitment: Completed	Behavioral: Standing balance exercise, Behavioral: Isometric knee extension exercise	Knee osteoarthritis outcome scores (KOOS), Knee muscle peak torqu, Aggregate functional performance time	
NCT00222300 Design: RCT Recruitment: Completed	Behavioral: Strength training program	Lower limb strength using a step test, Pain, stiffness and function using the WOMAC questionnaire. Function using the Timed Up-and-Go Test.Quality of life using the AQoL, Spatiotemporal measures of walking using an instrumented mat.Hip joint torques using 3-D motion analysis.	
NCT00049816 Design: RCT Recruitment: Completed	Behavioral: Walking exercise, Behavioral: Cycling Exercise	VAS, SF-36, WOMAC, and Activity Index questionnaires, Weight-bearing anterior-posterior (AP) and lateral x-rays of the knee, MRI imaging of the knee, Measurements of gait during level walking and stair climbing, Change in consumption of analgesics, reflecting the level of joint pain	
NCT00124462 Design: RCT Recruitment: Completed	Device: Brace and Shoe Insert, Device: Knee brace and shoe insert	Western Ontario and McMaster Osteoarthritis Index (WOMAC) Pain and Function Subscales (Most symptomatic treated knee), WOMAC Stiffness Subscale,Knee Injury and Osteoarthritis Outcome Score, Patient Global Assessment,Overall Knee Pain Visual Analogue Scale (VAS) (Knee specific), SF36, Analgesic use (Medication log), Blinded knee exam by physician, Physician Global Assessment, Functional performance measures, Proprioception	
NCT00698412 Design: RCT Recruitment: Completed	Device: Cane	Pain - visual analogue scale, Function - Lequesne index, Function - WOMAC questionnaire, Quality of life - SF-36, Energy consumption (VO2)- gas analysis with and without cane during the 6MWT	

Appendix Table F2. Registered in clinicaltrials.gov closed studies of physical therapy interventions in adults with knee OA (continued)

NCT ID Design Recruitment	Interventions	Outcome Measures	Publications
NCT00076453 Design: RCT Recruitment: Completed	Device: Lateral wedge orthotic shoe inserts, Device: Standard orthotic shoe inserts	Pain reduction, Reduction in loading of the medial knee	
NCT00331110 Design: RCT Recruitment: Completed	Device: Laterally-Wedged Insole with Ankle Strapping,Device: Laterally-Weged Insole	Hip-Knee-Ankle Alignment,Talar Tilt Angle, External Knee Adduction Moment, Pain Assessment, Gait Velocity, Center of Pressure, Foot Progression Angle	
NCT00931749 Design: RCT Recruitment: Completed	Device: Low intensity pulsed ultrasound therapy, Device: Sham Low intensity pulsed ultrasound therapy	Medial compartment knee cartilage thickness and volume,Western Ontario and McMaster Osteoarthritis Index Score (WOMAC, Lower Extremity Functional Scale (LEFS), 6 minutes walk test, Patien tÂ´s global assessment of disease severity (Likert scale 0- 5), Semi quantitative scoring of the knee joint, Pain at the end of the 6 minute walk test	
NCT00375544 Design: Allocation: Non-Randomized, Control: Uncontrolled, Endpoint Classification: Safety/ Efficacy Study, Intervention Model: Single Group Assignment, Masking: Open Label, Primary Purpose: Treatment Recruitment: Completed	Device: Low level light therapy	Decreased pain scores on the visual analog scale (VAS), Improved Western Ontario and McMaster Universities Osteoarthritis index (WOMAC) scores, Reduced use of over the counter (OTC) analgesics post therapy,Improved functionality as determined by measurable increases in knee range of motion (ROM), Increased exercise ability, No, or decreased knee effusion, Subject satisfaction, Durability of the Clinical Response	
NCT00653432 Design: RCT Recruitment: Completed	Device: MONOVISC	WOMAC Pain, Global Assessment	
NCT00500448 Design: RCT Recruitment: Completed	Device: Neuromuscular Electrical Stimulation (Vectra Genisys 4 Channel Electrotherapy System)	Quadriceps Central Activation Ratio, Score on the WOMAC, Gait Measures (% time in double support, walking velocity, stride length, knee kinematics and kinetics)	Palmieri-Smith, 2010[15]
NCT00417313 Design: RCT Recruitment: Completed	Device: periosteal electro-acupuncture (osteopuncture).	Changes in pain and disability, measured with the Western Ontario and McMaster Universities Osteoarthritis Index, changes in physical performance, psychosocial function (mood, self-efficacy, coping, fear, self-rated health), sleep and appetite	
NCT00823888 Design: Non-Randomized Recruitment: Completed	Device: pneumatic brace	To undertake a clinical trial in patients with medial knee OA to determine whether provision of a pneumatic knee brace leads to a reduced adduction moment during the time of this treatment than during the use of a control treatment. To undertake a clinical trial in patients with medial knee OA to determine whether provision of a pneumatic knee brace leads to a lower pain score and improved function during the time of this treatment than during the use of a control treatment.	
NCT00105365 Design: Non-	Device: Shoe insert	WOMAC pain scale	

Appendix Table F2. Registered in clinicaltrials.gov closed studies of physical therapy interventions in adults with knee OA (continued)

NCT ID Design Recruitment	Interventions	Outcome Measures	Publications
Randomized Recruitment: Completed			
NCT00032240 Design: RCT Recruitment: Completed	Device: Shoe Insert		Baker, 2007[16]
NCT00154765 Design: RCT Recruitment: Completed	Device: sling suspension exercises	Significant difference on joint reposition test (p<.05). No difference on functional ambulating test and WOMAC index (p>.05) between the 2 groups. In the training group, all mea-surements got significant improvement (p<.05) except one of the functional ambulating tests.	
NCT01137266 Design: RCT Recruitment: Completed	Device: TENS	Determine the effect of TENS on pain and mobility for each treatment group separately. Also determine the differences of the effect of TENS by comparing different stimulation sites; relationship between skin resistance values before stimulation with the sensations during TENS.Explore whether there is a relation between physiological or psychological characteristics of patients and outcome of TENS and user satisfaction questionnaire	
NCT00976079 Design: RCT Recruitment: Completed	Device: Transcutaneous electrical nerve stimulation (TENS), Device: Placebo TENS	Quadriceps central activation ratio, Quadriceps torque production, WOMAC score, Visual analog pain score, Knee joint kinetics and kinematics	
NCT00223795 Design: RCT Recruitment: Completed	Device: Walking with a cane or without a cane (Guardian offset handled cane)	Pain	
NCT00420147 Design: RCT Recruitment: Completed	Device: wedged inshoe orthosis	Knee abduction moment at baseline and one year, WOMAC at baseline and one year, 6 minute walk and stair climb pain and functional at baseline and one year	
NCT00904319 Design: Non-Randomized Recruitment: Completed	Other: Aquatic Power Training	400 meter walk time, Lower limb function (LLFDI), Quality of life (KOOS), Knee osteoarthritis pain (KOOS pain scores, Vastus lateralis muscle bulk	
NCT00726492 Design: RCT Recruitment: Completed	Other: Continuous short wave diathermy (CSWD), Other: Hydrotherapy	Six-minute walk test, Visual analogue pain scale (10 cm line), Knee range of motion, Arthritis Impact Measurement Scale 2 (AIMS 2), Patient interview	
NCT00917618 Design: Non-Randomized Recruitment: Completed	Other: Exercise, Other: Control	Preferred gait speed, WOMAC, KOS	
NCT01090375 Design: Non-Randomized Recruitment: Completed	Other: Exercise|Other: Non Exercise		Helmark, 2010[17]

Appendix Table F2. Registered in clinicaltrials.gov closed studies of physical therapy interventions in adults with knee OA (continued)

NCT ID Design Recruitment	Interventions	Outcome Measures	Publications
NCT00581841 Design: Observational Recruitment: Completed	Other: Gait analysis, knee x-ray, and knee MRI	Day-to-day and inter/intra examiner repeatability of the techniques to be used in NIH grant R01 AR48768	
NCT00583245 Design: Non-Randomized Recruitment: Completed	Other: Gait Training	Changes in functional limitation assessed by the A) Summary Performance Score which includes balance tests, timed 4-meter walk, and timed chair stand test B) Timed stair climb C) Late Life Function and Disability Instrument (LLFDI) Questionnaire, Changes in the disability measure, a timed 400 meter walk, Changes in impairments assessed using the Knee and Osteoarthritis Outcome Score (KOOS) questionnaire	
NCT00642772 Design: Uncontrolled|Health Services Research Recruitment: Completed	Other: Group Physical Therapy	Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), which assesses pain, stiffness, and function	
NCT00519922 Design: RCT Recruitment: Completed	Other: Kinesthesia, Balance, and Agility (KBA) Exercise, Other: Standard LE Strength Training	WOMAC Osteoarthritis Scale; Function subscale change pre to post intervention - KBA vs. standard strength training, WOMAC subscale change in Pain and in Stiffness pre to post intervention, Walking speed change in a timed Get Up & Go Test pre to post intervention, Stair climbing and descending speed change pre to post intervention, Gait quality measures with the GAITRite walking mat and EMG, pre to post intervention, Spontaneous engagement in physical activity - change pre to post intervention as measured by the Human Activity Profile, Efficacy for exercise change pre to post intervention as measured by the Self-Efficacy for Exercise scale.	
NCT00979914 Design: RCT Recruitment: Completed	Other: Patient education programme	EQ5D,Arthritis self-efficacy scale,One-leg rising from sitting to standing, Grip Ability Test, Bipedal rising from sitting to standing, One-legged jump,Standing on one leg with eyes open and standing on one leg with eyes closed	Hansson, 2010[18]
NCT00759512 Design: RCT Recruitment: Completed	Other: Therapeutic Touch	SF36,WOMAC	
NCT00450606 Design: RCT Recruitment: Completed	Procedure: Balneotherapy and hydrotherapy	Quality of life evaluation at one, three and six months, Functional state of the patient at one, three and six months, Osteoarthritis severity at one, three and six months	
NCT00322244 Design: RCT Recruitment: Completed	Procedure: Massage Therapy	Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) pain and functional scores,Visual Analog Scale (VAS), Range of motion, Time to walk 50 feet	Perlman, 2006[19]
NCT00000406 Design: RCT	Procedure: Progressive resistance		

Appendix Table F2. Registered in clinicaltrials.gov closed studies of physical therapy interventions in adults with knee OA (continued)

NCT ID Design Recruitment	Interventions	Outcome Measures	Publications
Recruitment: Completed	exercise		
NCT00414557 Design: RCT Recruitment: Completed	Procedure: Quadriceps strengthening	Adduction moment,Time points: 0 and 13 weeks,Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) questionnaire, Numerical rating scales for pain, Quadriceps and hamstrings strength, Self-selected walking speed, Dynamic balance using step test, Physical function using stair climb test, Time points: 0 and 13 weeks	Lim, 2008[20]
NCT01274546 Design: Observational Recruitment: Enrolling by invitation	Device: cruciate-retaining Foundation Knee system	Survivorship of the Device,Knee Society Score Evaluation,Short Form - 36,Oxford Knee Score Assessment, WOMAC Osteoarthritis Index, Range of Motion, Radiographic failure	
NCT01017445 Design: RCT Recruitment: Enrolling by invitation	Other: Boonme stick exercise	VAS score, WOMAC, number of analgesic used	
NCT01050465 Design: RCT Recruitment: Enrolling by invitation	Other: health information prescription	Seeking information using MedlinePlus	
NCT01096524 Design: RCT Recruitment: Enrolling by invitation	Other: Standard Physiotherapy, Device: Kneehab	Efficacy of Kneehab in promoting early recovery of quadriceps performance following knee arthoplasty.Determine the effect of Kneehab in promoting quality of life measures and health economic outcomes, compared to controls.	
NCT00988468 Design: RCT Recruitment: Terminated	Procedure: Manual Therapy, Behavioral: Therapeutic Exercise, Behavioral: Video Observation	Suprapatellar effusion measured via diagnostic ultrasound, Pain Visual Analog Scale, Goniometric knee arc range of motion, Western Ontario and McMaster Universities Index of osteoarthritis of the knee	
NCT00467337 Design: RCT Recruitment: Terminated	Procedure: Medial-Wedge Insole intervention	To assess symptoms, Visual Analog Scale (VAS) will be used for night pain, pain at rest and on movement. Lequesne index score and the WOMAC questionnaire will be applied at baseline and after 8 weeks by a blinded examiner.Antero-posterior conventional X-ray of knees and ankles were both performed under monopodalic load with and without insoles in order to measure femorotibial, talocalcaneal, and talus tilt angles.	Rodrigues, 2008[21]
NCT00378339 Design: RCT Recruitment: Withdrawn	Device: gold berlocks	VAS|WOMAC	
NCT00300326 Design: RCT Recruitment: Withdrawn	Device: LPS Flex knee system	Gait kinetic and kinematic parameters at the knee (knee forces, moments and angles), knee pain, stiffness and function	

Appendix Table F3. Scientific Information Package requests

Company	SIP Letter Sent	Response
3M Innovative Properties Company	3/3/2011	None
AlignMed, LLC	3/3/2011	None
AMREX	3/3/2011	None
Anatomical Concepts, Inc.	3/3/2011	None
Biometrics Ltd.	3/3/2011	None
Bledsoe Brace Systems	3/3/2011	None
BSN medical, Inc.	3/3/2011	None
CASTEC CORPORATION	3/3/2011	None
Chattanooga Group	3/3/2011	None
CIR Systems, Inc.	3/3/2011	None
Cybex International, Inc.	3/3/2011	None
EBI, L.P.	3/3/2011	None
EMPI	3/3/2011	None
Engineering Fitness International, Inc.	3/3/2011	None
EPAMERICA, LLC	3/3/2011	None
Hewlett-Packard USA	3/3/2011	None
HRL Laboratories, LLC	3/3/2011	None
Innovation Sports	3/3/2011	None
Kneebourne Therapeutic	3/3/2011	None
Lenjoy Medical Engineering, Inc.	3/3/2011	None
LGMedSupply	3/3/2011	None
Neuro Resource Group, Inc.	3/3/2011	None
Omnitek Partners LLC	3/3/2011	None
OrthoCor Medical, Inc.	3/3/2011	None
Össur Americas	3/3/2011	None
RAM Plus, LLC	3/3/2011	None
Relieve Pain Today	3/3/2011	None
Robert Bosch LLC	3/3/2011	None
Robert Bosch LLC	3/3/2011	None
RS Medical	3/3/2011	None
Science & Technology Corporation @ UNM	3/3/2011	None
Sigmedics, Inc.	3/3/2011	None
Taketora USA Inc.	3/3/2011	None
Thera-Band	3/3/2011	None
Tibion Corporation	3/3/2011	None
EMAIL ONLY/International		None
Absolute Aromas		None
Axiom Worldwide		None
Biometer A/S		None
BioniCare Medical Technologies, Inc.		None
Bosch Rexroth		None
Byonic Medical Systems		None
Eisai Co, Ltd		None
EMHI		None
Enraf-Nonius B.V.		None
Enraf-Nonius B.V.		None
ITO Co. Ltd		None
iWALKFree Inc.		None
KneeWalkerCentral.com		None
KOBAYASHI Healthcare, LLC		None
Össur Prosthetics		None
Snowden Healthcare Ltd		None
Socie´ te´ FranCaise d'Orthopodie		None
Generic/No Contact/Not Found/No address, etc.		None
Biofields Aps, Copenhagen, Denmark		None
Bio-Magnetic therapy systems, Inc. (Danbury, CT)		None
Brown & Company of Pensacola, Inc.		None

Appendix Table F3. Scientific Information Package requests (continued)

Company	SIP Letter Sent	Response
Dynamic Medical Instruments Ltd (Wigan, UK)		None
Egro-Crutch, LLC (Minneapolis, MN)		None
Hammer Corporation (Cincinnati, OH)		None
Kinetecs, Inc. (Lincoln, NE)		None
Kineticure, Inc. (Helfet, DL)		None
Medi Bayreuth Weihermuller & Voightman GmbH & Co. KG (Bayreuth, DE)		None
Neuromuscular Gain Inc.		None
OrthoRehab, Inc. (Lowell, MA)		None
Otto Bock Healthcare GmbH (Duderstadt, DE)		None
Petson® .250 ultrasound equipment (Petas, Turkey)		None
ProMDX Technology, Inc. (New York, NY)		None
Sanshinkousan Co. Ltd.		None
Sigmedics, Inc. of Delaware (Northfield, IL)		None
Staodyn Inc. (Longmont, CO)		None
Taketora Co. Ltd., Tokyo, Japan		None
Taketoraa Co. Ltd.		None
Technology Research Association of Medical and Welfare Apparatus (Tokyo, Japan)		None
TerapiMaster, Nordisk Terapi AS, Norway		None
The Han Acupoint Nerve Stimulation, model LH204H (Beijing. China)		None
Thermal mineral water of Nagybaracska, Hungary		None
Thuasne (Levallois Perret, France)		None
Unknown stimulator, Endomed-CV 405 electrodes and Enraf Myomed-432 superficial electrodes		None

Appendix Table F4. Poorly reported RCT and nonrandomized studies

Intervention	Author, year	Country	Sample	Design
Aquatic exercise	Lin, 2004[22]	England	106	Clinical Trial
Aquatic exercise	Foley, 2003[23]	Australia	105	RCT
Aquatic exercise	Wang, 2007[24]	Taiwan	38	RCT
Balneotherapy	Forestier, 2000[25]	France	51	Case-series
Balneotherapy	Guillemin, 2001[26]	France	102	Clinical Trial
Balneotherapy	Gaal, 2008[27]	Hungary	81	Clinical Trial
Balneotherapy	Evcik, 2007[28]	Turkey	80	Clinical Trial
Balneotherapy	Yilmaz, 2004[29]	Turkey	50	Comparative Study
Diathermy	Jan, 2006[30]	Taiwan	30	Clinical Trial
Diathermy	Quirk, 1985[31]			
Education	Dalury, 2003[32]	USA	20	Case series
Education	Emery, 2006[33]	USA	62	Case-series
Epidemiology, risk factors	Blagojevic, 2008[34]	England	1577	Prospective cohort
Epidemiology, risk factors	Ettinger, 1994[35]		4059	Prospective cohort
Epidemiology, risk factors	Dunlop, 2010[36]	USA	2274	Prospective cohort
Exercise	Fitzgerald, 2002[37]	USA		Case reports
Exercise	Roddy, 2005[38]	England		Case reports
Exercise	Scopaz, 2009[39]	USA	111	Case series
Exercise	Aglamis, 2009[40]	Turkey	30	Case series
Exercise	Schank, 1986[41]	USA	70	Case series
Exercise	Diracoglu, 2008[42]		60	Case-series
Exercise	Focht, 2002[43]	USA	964	Case-series
Exercise	Toda, 2001[44]	Japan	128	Clinical Trial
Exercise	Damush, 2005[45]	USA	191	Clinical Trial
Exercise	Konishi, 2009[46]	Japan	42	Clinical Trial
Exercise	Coupe, 2007[47]	The Netherlands.	200	Cost effectiveness
Exercise	Foy, 2005[48]	USA	584	Prospective evaluation of the subjects from RCT
Exercise	French, 2010[49]	Ireland	27	RCT
Exercise	Dias, 2003[50]	Brazil.	50	RCT
Exercise	Bulthuis, 2007[51]	The Netherlands	98	RCT
Exercise	Iwamoto, 2007[52]	Japan	26	
Exercise	Cooper, 1999[53]			
Exercise	Fisher, 1991[54]			
Exercise+device	Goldman, 2003[55]	USA	113	Evaluation Studies; Phase I
Heat	Seto, 2008[56]	Japan	41	RCT
Joint mobilization	Courtney, 2010[57]		10	Case series
Joint mobilization	Cliborne, 2004[58]	USA	22	Comparative Study
Magnet	Chen, 2008[59]	Taiwan	50	RCT
Manual therapy	Chen, 2000[60]	China		Case Reports
Orthotics	Hewitt, 2002[61]	Australia	20	Case control
Orthotics	Draper, 2000[62]	England	30	Case control
Orthotics	Dennis, 2006[63]	USA	40	Case reports
Orthotics	Giori, 2004[64]	USA	46	Case reports
Orthotics	Keating, 1993[65]	USA	85	Case series
Orthotics	Lindenfeld, 1997[66]	USA	11	Case series
Orthotics	Powers, 2004[67]	USA	15	Case series

Appendix Table F4. Poorly reported RCT and nonrandomized studies (continued)

Intervention	Author, year	Country	Sample	Design
Orthotics	Hewett, 1998[68]	USA	18	Case series
Orthotics	Butler, 2009[69]	England	30	Case series
Orthotics	Finger, 2002[70]	USA	28	Case-series
Orthotics	Pollo, 2002[71]	USA	11	Case-series
Orthotics	Birmingham, 2001[72]	Canada	14	Case-series
Orthotics	Chan, 2005[73]	China	14	Case-series
Orthotics	Gaasbeek, 2007[74]		15	Case-series
Orthotics	Fang, 2006[75]		28	Case-series
Orthotics	Rubin, 2005[76]		30	Case-series
Orthotics	Draganich, 2006[77]	USA	10	Clinical trial
Orthotics	Butler, 2007[78]	USA	20	Clinical Trial
Orthotics	Matsuno, 1997[79]	USA	20	Clinical Trial
Orthotics	Katsuragawa, 1999[80]	Japan	14	Clinical Trial
Orthotics	Pascual, 2003[81]	Spain		Comment, Case reports
Orthotics	Kemp, 2008[82]	USA	40	Comparative Study
Orthotics	Hinman, 2008[83]	Australia	13	Comparative Study
Orthotics	Barnes, 2002[84]	USA	30	Evaluation Studies
Orthotics	Barrios, 2009[85]	USA	66	RCT
Orthotics	Kirkley, 1999[86]	Canada	119	RCT analyzed as one arm study
Orthotics	Felson, 2009[87]	USA	2,243	the Multicenter Osteoarthritis Study
Orthotics	Bal, 2007[88]			
Orthotics	Foxworth, 2006[89]			
Orthotics	Kuo, 2006[90]			
Orthotics	Richards, 2006[91]			
Physical Therapy, not specified	Lankhorst, 1982[92]	Sweden	24	Case series
PT	Jamtvedt, 2010[93]	Norway	297	Case-series
PT	Clarke, 1974[94]	England	45	Comparative Study
PT	Axford, 2008[95]	England	170	RCT
Pulsed electrical stimulation	Fary, 2009[96]	Australia		Case Reports
Pulsed electrical stimulation	Pfeiffer, 2001[97]	Germany		Case Reports
Pulsed electrical stimulation	Picaza, 1975[98]	USA	100	Case series
Pulsed electrical stimulation	Mont, 2006[99]	USA	23	Clinical Trial
Pulsed electrical stimulation	Farr, 2006[100]	USA	288	Clinical Trial
Pulsed electrical stimulation	Smith, 1983[101]	England	32	Clinical Trial
Pulsed electrical stimulation	Lewis, 1994[102]	Australia	36	Clinical Trial
Pulsed electrical stimulation	Fransen, 1997[103]	England	40	Clinical Trial
Pulsed electrical stimulation	Mont, 2006[99]	USA	266	Clinical Trial
Pulsed electrical stimulation	Lewis, 1984[104]	England	30	RCT
Pulsed electrical stimulation	Danao-Camara, 2001[105]	USA		
Pulsed electrical stimulation	Paul, 2006[106]			
Self management	Allen, 2010[13]	USA	515	RCT
Tai Chi	Adler, 2007[107]			
Ultrasound	Lindahl, 1952[108]			Case series
Yoga	Bukowski, 2006[109]	USA	15	Case series
Bracing	Ramsey, 2007[110]	USA	16	Case-series

Appendix Table F5. Therapeutic studies of physical therapy interventions that did not contribute to synthesis of evidence due to poor quality or inclusion of patients with hip OA

Author, year Country Sample size	Tested physical therapy intervention Design Mean age % of women	Planned intention to treat	Allocation concealment	Adequacy of randomization	Risk of bias
Belza, 2002[111] Country: US Sample: 249	Aquatic exercise program RCT Mean age: 65.7 % of women: 86.3	na	na	yes	Risk of bias: low (poor reporting)
Moffett,1996[112] Country: UK Sample: 60	Diathermy RCT Mean age: 63 % of women: 63	no	yes	yes	Risk of bias: medium either hip or knee OA
Bansil, 1975[113] Country: India Sample: 100	Diathermy vs. US Non-RCT Mean age: na % of women: 66.6	no	na	na	Risk of bias: high
Hansson, 2010[18] Country: Sweden Sample: 114	Education program for osteoarthritis RCT Mean age: 62.5 % of women: 85	yes	unclear	yes	Risk of bias: low (hip or knee OA)
Fransen, 1997[103] Country: Australia Sample: 52	Exercise aerobic Non-RCT Mean age: 66.24 % of women: 80	no	na	na	Risk of bias: high Not RCT, poor quality
van Gool, 2005[114] Country: US Sample:	Exercise aerobic RCT Mean age: 68.7 % of women: 71.8	yes	yes	yes	Risk of bias: low (question 1a)
Domaille, 2006[115] Country: UK Sample: 120	Exercise aerobic Non-RCT Mean age: 66.9 % of women: 62	no	na	na	Risk of bias: high
Minor, 1989[116] Country: US Sample: 79	Exercise aquatic RCT Mean age: 60.6 % of women: 81.7	no	na	yes	Risk of bias: medium either hip or knee OA
Cochrane, 2005[117] Country: UK Sample: 312	Exercise aquatic RCT Mean age: 69.7 % of women: 62.8	yes	yes	yes	Risk of bias: low either hip or knee OA
Hinman, 2007[118] Country: Australia Sample: 71	Exercise aquatic RCT Mean age: 62.4 % of women: 67.6	yes	yes	yes	Risk of bias: low either hip or knee OA
Wang, 2007[24] Country: US Sample: 42	Exercise aquatic RCT Mean age: 66.2 % of women: 84.2	yes	na	yes	Risk of bias: low either hip or knee OA
Norton, 1999[119] Country: US Sample:	Exercise Aquatic Non-RCT Mean age: 66.6 % of women: 100	no	na	na	Risk of bias: high Poor quality
Fransen, 2007[6] Country: Australia Sample: 111	Exercise aquatic vs. tai chi RCT Mean age: 70.2 % of women: 73.7	yes	na	yes	Risk of bias: low either hip or knee OA

Appendix Table F5. Therapeutic studies of physical therapy interventions that did not contribute to synthesis of evidence due to poor quality or inclusion of patients with hip OA (continued)

Author, year Country Sample size	Tested physical therapy intervention Design Mean age % of women	Planned intention to treat	Allocation concealment	Adequacy of randomization	Risk of bias
Hopman-Rock, 2000[120] Country: Netherlands Sample: 200	Exercise ED RCT Mean age: 65 % of women: 83	no	na	yes	Risk of bias: medium either hip or knee OA
Halbert, 2001[121] Country: Australia Sample: 299	Exercise ED RCT Mean age: 68.9 % of women: 59.4	no	unclear	yes	Risk of bias: medium either hip or knee OA
Heuts, 2005[122] Country: Netherlands Sample: 297	Exercise ED RCT Mean age: 51.6 % of women: 59.7	yes	yes	yes	Risk of bias: low either hip or knee OA
Veenhof, 2006[123] Country: Netherlands Sample: 200	Exercise ED RCT Mean age: 65 % of women: 77	Yes	yes	yes	Risk of bias: low (hip or knee)
Wetzels, 2008[124] Country: Netherlands Sample: 104	Exercise ED RCT Mean age: 74.5 % of women: 75.9	no	unclear	yes	Risk of bias: medium either hip or knee OA
Pisters, 2010[125] Country: Netherlands Sample: 200	Exercise ED RCT Mean age: 64.791 % of women: 77	yes	yes	yes	Risk of bias: low either hip or knee OA
Barlow, 2000[126] Country: UK Sample: 544	Exercise ED RCT Mean age: 58.1 % of women: 84	yes	na	yes	Risk of bias: low either hip or knee OA
Coleman, 2008[127] Country: Australia Sample: 79	Exercise ED Non-RCT Mean age: 66 % of women: 75.9	no	na	na	Risk of bias: high Poor quality
de Jong, 2004[128] Country: Netherlands Sample: 157	Exercise NS Non-RCT Mean age: 69 % of women: 71	no	na	na	Risk of bias: high Not RCT, poor quality
van Baar, 2001[129] Country: Netherlands Sample: 201	Exercise strength RCT Mean age: 67.994 % of women: 78.5	yes	unclear	yes	Risk of bias: low either hip or knee OA
Ravaud, 2004[130] Country: France Sample: 1517	Exercise strength RCT Mean age: 66.7 % of women: 70.1	yes	na	na	Risk of bias: low patients were not randomized
Fisher, 1993[131] Country: US Sample: 40	Exercise strength Non-RCT Mean age: 63.9 % of women: 50	no	na	na	Risk of bias: high Not RCT, poor quality
King, 2008[132] Country: Canada Sample: 14	Exercise strength Non-RCT Mean age: 48.4 % of women: 14.3	na	na	na	Risk of bias: high Poor quality
Konishi, 2009[46] Country: Japan	Exercise strength Non-RCT	no	na	yes	Risk of bias: high

Appendix Table F5. Therapeutic studies of physical therapy interventions that did not contribute to synthesis of evidence due to poor quality or inclusion of patients with hip OA (continued)

Author, year Country Sample size	Tested physical therapy intervention Design Mean age % of women	Planned intention to treat	Allocation concealment	Adequacy of randomization	Risk of bias
Sample: 55	Mean age: 69.4 % of women: 100				Poor quality
Sled, 2010[14] Country: Canada Sample: 45	Exercise strength Non-RCT Mean age: 62.98 % of women: 57.5	na	na	na	Risk of bias: high Poor quality
Hurley, 1998[133] Country: UK Sample: 89	Exercise strength Non-RCT Mean age: 61.38 % of women: 70.1	no	na	yes	Risk of bias: high poor quality
Ozdincler, 2005[134] Country: Turkey Sample: 35	Exercise strength vs. strength Non-RCT Mean age: 54.5 % of women: 93.3	na	na	na	Risk of bias: high Poor quality
Swank, 2011[135] Country: US Sample: 73	Exercise training (pre rehabilitation) RCT Mean age: 62.9 % of women: 64.8	na	na	yes	Risk of bias: low, analyzed
Foley, 2003[23] Country: Australia Sample: 70	Hydrotherapy: warm-up + strengthening exercise RCT Mean age: 70.9 % of women: 49.5	yes	yes	yes	Risk of bias: low (hip or knee)
Harlow, 2004[136] Country: UK Sample: 129	Magnet therapy RCT Mean age: 66.56 % of women: 38.3	yes	unclear	yes	Risk of bias: low either hip or knee OA
Tohyama, 1991[137] Country: Japan Sample: 85	Orthotics Non-RCT Mean age: 57 % of women: 85.5	na	na	na	Risk of bias: high
Sasaki, 1987[138] Country: Japan Sample: 162	Orthotics Non-RCT Mean age: 59.2 % of women: 82.5	no	na	na	Risk of bias: high
Shimada, 2006[139] Country: Japan Sample: 23	Orthotics Non-RCT Mean age: 67 % of women: 73.9	na	na	na	Risk of bias: high, poor quality
Elbaz, 2010[140] Country: Israel Sample: 46	Orthotics Non-RCT Mean age: 62.5 % of women: na	no	na	na	Risk of bias: high Poor quality
Erhart, 2008[141] Country: US Sample: 79	Orthotics vs. orthotics Non-RCT Mean age: 60.2 % of women: 46.8	na	na	na	Risk of bias: high
Trock, 1993[142] Country: US Sample: 27	PEMF RCT Mean age: na % of women: NR	no	yes	yes	Risk of bias: medium hand or knee OA

Appendix Table F5. Therapeutic studies of physical therapy interventions that did not contribute to synthesis of evidence due to poor quality or inclusion of patients with hip OA (continued)

Author, year Country Sample size	Tested physical therapy intervention Design Mean age % of women	Planned intention to treat	Allocation concealment	Adequacy of randomization	Risk of bias
Hughes, 2006[143] Country: US Sample: 225	Resistance training + strengthening training RCT Mean age: 73.4 % of women: 83.1	na	unclear	yes	Risk of bias: low hip or knee OA
Allen, 2010[13] Country: US Sample: 349	Self-management support (Telephone-based) RCT Mean age: 60.1 % of women: 7	yes	yes	yes	Risk of bias: low hip or knee OA
Song, 2007[144] Country: South Korea Sample: 72	Tai Chi exercise (warm-up + 12 forms of Tai Chi movement + cool down) RCT Mean age: 63 % of women: 100	na	na	yes	Risk of bias: low OA is not specified
Quilty, 2003[145] Country: UK Sample: 87	Taping +exercise RCT Mean age: 67 % of women: NR	yes	yes	yes	Risk of bias: low patello-femoral OA
Svarcova, 1987[146] Country: Czechoslovakia Sample: 60	US Non-RCT Mean age: 63.4 % of women: NR	no	no	yes	Risk of bias: high

NR - not reported

Appendix Table F6. Consent of the subjects, sponsorship, and risk of bias in the studies of physical therapy interventions

Study characteristics	Category	Included in quantitative pooling analyses	Included in qualitative analyses	Included in quantitative analyses	Total
Ethical approval of the study	NR	52	5	8	65
Ethical approval of the study	Yes	155	24	12	191
Consent of the subjects	NR	25	4	11	40
Consent of the subjects	Yes	182	25	9	216
Funding	Government	50	8	3	61
Funding	Government + indudstry	1	0	0	1
Funding	Government + indudstry + others	2	0	0	2
Funding	Government + others	15	4	1	20
Funding	Hospital	1	0	0	1
Funding	Industry	14	3	0	17
Funding	Industry + others	1	0	0	1
Funding	NR	81	5	14	100
Funding	No funding	2	0	0	2
Funding	Other	36	9	2	47
Desing	Non-RCT	0	0	20	20
Desing	Randomized order design	3	0	0	3
Desing	RCT	204	29	0	233
Crossover	No	190	29	20	239
Crossover	Yes	17	0	0	17
Risk of bias	High	25	0	20	45
Risk of bias	Low	64	18	0	82
Risk of bias	Medium	110	11	0	121
Risk of bias	Unclear	8	0	0	8
Masking	Double blind	37	2	0	39
Masking	Not RCT	0	1	20	21
Masking	NR	24	0	0	24
Masking	Open label	44	9	0	53
Masking	Single blind	102	17	0	119
Allocation concealment	No	14	0	1	15
Allocation concealment	NR	125	16	19	160
Allocation concealment	Yes	68	13	0	81
Intention to treat	No	112	10	13	135
Intention to treat	NR	28	4	7	39
Intention to treat	Yes	67	15	0	82
Adequacy of randomization	NA	29	1	18	48
Adequacy of randomization	No	26	2	0	28
Adequacy of randomization	Yes	152	26	2	180
	Total	207	29	20	256
		80.86	11.33	7.81	100

Appendix Table F7. Sample size, proportion of women, and average BMI in adults with knee OA participating in the studies of physical therapy interventions

Study	Category	Mean	Median	Std Dev
Included in quantitative pooling analyses	Body mass index	29.3	29.4	2.7
	% women	73.2	72.5	17.8
	Length of followup	5.8	3.0	7.0
	Lost of followup	10.4	8.7	10.6
	Mean age	64.4	64.7	5.4
	Duration of treatment	15.9	8.0	23.6
Included in qualitative analyses	Body mass index	29.2	29.0	2.3
	% women	72.3	77.0	18.7
	Length of followup	8.9	6.0	11.2
	Lost of followup	15.8	10.9	13.8
	Mean age	66.1	66.0	4.8
	Duration of treatment	13.4	12.0	12.3
Included in quantitative analyses	Body mass index	28.6	29.1	2.5
	% women	69.7	72.5	21.0
	Length of followup	11.6	3.0	27.4
	Lost of followup	17.8	20.0	10.9
	Mean age	63.4	63.9	5.8
	Duration of treatment	10.3	8.0	8.5

Appendix Table F8. Risk of bias in therapeutic studies of physical therapy for adults with pain secondary to knee OA

Author, year	Masking	Planned intention to treat	Allocation concealment	Adequacy of randomization	Risk of bias
Akyol, 2010[147]	SB	No ITT planned, all patients analysed	NR	YES	low
Ay, 2009[148]	SB	No ITT planned, all patients analysed	NR	YES	low
Barrios, 2009[85]	SB	YES	NR	YES	low
Battisti, 2004[149]	Open	No ITT planned, all patients analysed	NR	YES	low
Bennell, 2005[150]	DB	YES	YES	YES	low
Bennell, 2010[151]	SB	YES	YES	YES	low
Penninx, 2002[152]	SB	YES	YES	YES	low
Cantarini, 2007[153]	SB	No ITT planned, all patients analysed	NR	YES	low
Chua, 2008[154]	SB	NO	YES	YES	medium
Chuang, 2007[155]	Open	No ITT planned, all patients analysed	NR	YES	low
Cushaghan, 1994[156]	SB	No ITT planned, all patients analysed	NR	NR	low
Durmus, 2007[157]	Open	No ITT planned, all patients analysed	NR	YES	low
Erhart, 2010[158]	SB	NO	NR	YES	medium
Ettinger, 1997[159]	SB	YES	YES	YES	low
Fioravanti, 2010[160]	SB	YES	NR	YES	low
Forestier, 2010[161]	Open	ITT planned, but not executed	YES	YES	medium
Fransen, 2001[162]	SB	YES	YES	YES	low
Garland, 2007[163]	DB	YES	NR	YES	low
Hinman, 2003[164]	SB	YES	YES	YES	low
Hinman, 2004[165]	SB	YES	YES	YES	low
Huang, 2000[166]	Not RCT	NA	NA	NA	high
Hurley, 2007[167]	SB	YES	NR	YES	low
Jan, 1991[168]	Not RCT	NA	NA	NA	high
Jan, 2008[169]	SB	ITT planned, but not executed	NR	YES	medium
Jan, 2009[170]	SB	YES	NR	YES	low
Jensen, 1991[171]	Open	No ITT planned, all patients analysed	NR	YES	Low
Kerrigan, 2002[172]	randomized order design	unclear	NR	NR	NA
Ko, 2009[173]	Open	No ITT planned, all patients analysed	NR	YES	low
Lee, 2009[174]	SB	YES	NR	YES	low
Lim, 2008[20]	SB	YES	NR	YES	low
Lin, 2009[175]	SB	YES	NO	YES	medium
Lund, 2009[176]	SB	No ITT planned, all patients analysed	NR	YES	low
Maillefert, 2001[177]	Open	YES	NR	YES	low
Mangani, 2006[178]	SB	NO	YES	YES	medium
Mazzuca, 2004[179]	DB	NO	NR	YES	medium
McKnight, 2010[9]	Open	YES	NR	YES	Low
Messier, 2000[180]	SB	YES	YES	YES	low
Ng, 2003[181]	SB	No ITT planned, all patients analysed	NR	YES	low
Odabasi, 2008[182]	SB	YES	NR	YES	low

Appendix Table F8. Risk of bias in therapeutic studies of physical therapy for adults with pain secondary to knee OA (continued)

Author, year	Masking	Planned intention to treat	Allocation concealment	Adequacy of randomization	Risk of bias
Ozgonenel, 2009[183]	DB	No ITT planned, all patients analysed	NR	YES	low
Pajareya, 2003[184]	SB	ITT planned, but not executed	YES	YES	medium
Palmieri-Smith, 2010[15]	Open	YES	YES	YES	low
Patrick, 2001[185]	Open	NO	NR	YES	medium
Penninx, 2001[186]	SB	YES	YES	YES	low
Petrella, 2000[187]	DB	YES	NR	YES	low
Pietrosimone, 2010[188]	SB	unclear	NR	YES	low
Pisters, 2010[3]	SB	YES	YES	YES	low
Rejeski, 1997[189]	SB	YES	YES	YES	low
Rejeski, 1998[190]					
Rejeski, 2002[191]	SB	ITT planned, but not executed	YES	YES	low
Rodrigues, 2008[21]	SB	No ITT planned, all patients analysed	NR	YES	low
Rooks, 2006[192]	SB	ITT planned, but not executed	NR	YES	medium
Selfe, 2008[193]	SB	unclear	YES	YES	low
Shakoor, 2007[194]	Open	No ITT planned, all patients analysed	NR	YES	Low
Silva, 2008[195]	SB	YES	NR	YES	low
Thamsborg, 2005[196]	DB	YES	NR	YES	low
Thomas, 2002[197]	SB	YES	NR	YES	low
Thomas, 2005[198]	SB	YES	NR	YES	low
Tok, 2009[199]	Open	No ITT planned, all patients analysed	NR	YES	low
Topp, 2002[200]	Open	No ITT planned, all patients analysed	NR	YES	Low
van Raaij, 2010[201]	Open	YES	NR	YES	low
Wang, 2009[202]	SB	YES	YES	NR	low
Weiner, 2007[203]	SB	YES	NR	YES	low
Weng, 2009[204]	SB	ITT planned, but not executed	YES	YES	medium
Williamson, 2007[205]	SB	YES	YES	YES	low
Yurtkuran, 1999[206]	SB	No ITT planned, all patients analysed	NR	YES	low
Adedoyin, 2005[207]	SB	NO	NO	YES	high
Alcidi, 2007[208]	Open	NO	NR	NR	medium
An, 2008[209]	Open	NO	NR	YES	medium
Aoki, 2009[210]	SB	No ITT planned, all patients analysed	NR	YES	low
Baker, 2001[211]	SB	NO	YES	YES	medium
Baker, 2007[16]	DB	NO	YES	YES	medium
Bezalel, 2010[212]	SB	YES	NR	NO	medium
Borjesson, 1996[213]	Open	NO	NR	YES	medium
Brismee, 2007[214]	SB	NO	NR	YES	medium
Brouwer, 2006[215]	Open	YES	NO	NO	high
Callaghan, 2005[216]	DB	NO	NR	YES	medium
Cetin, 2008[217]	SB	NO	NR	YES	medium
Cheing, 2003[218]	Open	NO	NR	YES	medium
Cheing, 2002[219]	Open	NO	NR	YES	medium

Appendix Table F8. Risk of bias in therapeutic studies of physical therapy for adults with pain secondary to knee OA (continued)

Author, year	Masking	Planned intention to treat	Allocation concealment	Adequacy of randomization	Risk of bias
Defrin, 2005[220]	SB	No ITT planned, all patients analysed	NR	NO	medium
Denegar, 2010[221]	randomized order	NO	NR	YES	medium
Deyle, 2000[222]	SB	NO	YES	YES	medium
Deyle, 2005[223]	SB	NO	YES	YES	medium
Doi, 2008[224]	Open	NO	NR	YES	medium
Eyigor, 2004[225]	SB	NO	NR	YES	medium
Falconer, 1992[226]	SB	NO	NR	YES	medium
Fargas-Babjak, 1989[227]	DB	NO	NR	NR	medium
Farr, 2010[10]	Open	NO	NO	YES	high
Fitzgerald, 2011[228]	SB	YES	YES	NO	medium
Focht, 2005[229]	SB	YES	YES	NO	medium
Gordon, 1998[230]	SB	NO	NR	YES	medium
Gremion, 2009[231]	DB	NO	NR	YES	medium
Grimmer, 1992[232]	DB	NO	NR	NR	medium
Gur, 2002[233]	Open	No ITT planned, all patients analysed	NR	YES	low
Hassan, 2002[234]	Open	NO	NR	NR	medium
Hay, 2006[235]	SB	ITT planned, but not executed	YES	YES	medium
Hinman, 2002[236]	DB	NO	NR	YES	medium
Hinman, 2003[237]	randomized order	NO	NR	NR	medium
Huang, 2003[238]	Open	NO	YES	NR	medium
Huang, 2006[239]	SB	NO	YES	NR	medium
Huang, 2005[240]	SB	NO	YES	NR	medium
Hughes, 2004[241]	Open	NO	NR	YES	medium
Itoh, 2008[242]	Open	NO	NR	YES	medium
Jan, 2008[243]	SB	NO	NR	YES	medium
Jessep, 2009[244]	SB	YES	YES	YES	low
Kang, 2007[245]	SB	NO	NR	YES	medium
Karagulle, 2007[246]	SB	YES	NR	YES	low
Keefe, 2004[247]	Open	NO	NR	YES	medium
Kirkley, 1999[86]	Open	NO	NR	YES	medium
Kitay, 2009[248]	SB	NO	YES	YES	medium
Kovacs, 2002[249]	DB	NO	YES	NR	medium
Laufer, 2005[250]	DB	NO	NO	YES	high
Law, 2004[251]	DB	NO	NO	YES	high
Law, 2004[252]	DB	NO	NO	YES	high
Lim, 2002[253]	Open	NO	NR	YES	medium
Lin, 2007[254]	SB	NO	NR	YES	medium
Lund, 2008[255]	SB	YES	YES	NO	medium
Mangione, 1999[256]	Open	NO	NR	YES	medium
McCarthy, 2004[257]	SB	NO	NR	YES	medium
Messier, 2004[258]	SB	YES	YES	YES	low

Appendix Table F8. Risk of bias in therapeutic studies of physical therapy for adults with pain secondary to knee OA (continued)

Author, year	Masking	Planned intention to treat	Allocation concealment	Adequacy of randomization	Risk of bias
Messier, 1997[259]	SB	NO	NR	YES	medium
Mikesky, 2006[260]	SB	NO	NR	YES	medium
Moss, 2007[261]	randomized order	NO	NR	YES	medium
Ni, 2010[262]	SB	NO	YES	YES	medium
Nicklas, 2004[263]	SB	NO	NR	YES	medium
Nicolakis, 2002[264]	DB	NO	YES	YES	medium
Nigg, 2006[265]	SB	NO	NR	YES	medium
O'Reilly, 1999[266]	Open	NO	NO	YES	high
Ozguclu, 2010[267]	DB	No ITT planned, all patients analysed	NR	YES	low
Patrick, 2001[185]	Open	YES	NR	NO	medium
Perlman, 2006[19]	Open	NO	NR	YES	medium
Pham, 2004[268]	DB	YES	NR	NO	medium
Rattanachaiyanont, 2008[8]	DB	YES	YES	NO	medium
Ravaud, 2009[12]	Open	YES	NR	NO	medium
Richards, 2005[269]	Open	NO	NR	NR	medium
Rogind, 1998[270]	SB	NO	NR	YES	medium
Schilke, 1996[271]	Open	NO	NR	YES	medium
Segal, 2009[272]	SB	NO	NR	YES	medium
Sen, 2004[273]	Not RCT	NA	NA	NA	high
Sherman, 2009[274]	SB	NO	NR	YES	medium
Smith, 1983[101]	SB	NO	NO	NR	high
Song, 2003[275]	SB	NO	YES	YES	medium
Song, 2010[276]	SB	NO	NR	YES	medium
Talbot, 2003[277]	Open	NO	NR	YES	medium
Tascioglu, 2010[278]	DB	NO	NR	YES	medium
Taylor, 1981[279]	DB	NO	NR	NR	medium
Chamberlain, 1982[280]	SB	NO	NR	NO	high
Thorstensson, 2005[281]	Open	NO	NO	YES	high
Tishler, 2004[282]	SB	NO	NR	YES	medium
Toda, 2001[283]	Open	No ITT planned, all patients analysed	NO	YES	medium
Toda, 2002[284]	Open	No ITT planned, all patients analysed	NO	YES	medium
Toda, 2004[285]	Open	No ITT planned, all patients analysed	NO	YES	medium
Toda, 2004[286]	Open	NO	NO	YES	high
Toda, 2005[287]	Open	No ITT planned, all patients analysed	NO	YES	medium
Toda, 2006[288]	Open	NO	NO	YES	high
Toda, 2008[289]	SB	YES	NO	YES	medium
Trock, 1994[290]	DB	NO	YES	YES	medium
Tuzun, 2004[291]	Open	No ITT planned, all patients analysed	NR	YES	low
Victor, 2005[292]	SB	NO	NR	NR	medium
Wolsko, 2004[293]	DB	No ITT planned, all patients analysed	YES	NO	medium
Wyatt, 2001[294]	SB	NO	NR	NR	medium

Appendix Table F8. Risk of bias in therapeutic studies of physical therapy for adults with pain secondary to knee OA (continued)

Author, year	Masking	Planned intention to treat	Allocation concealment	Adequacy of randomization	Risk of bias
Yilmaz, 2010[295]	Open	NO	NR	YES	medium
Yip, 2007[296]	Open	YES	NR	YES	low
Yip, 2007[297]	Open	YES	NR	YES	low
Yip, 2008[298]	DB	NO	NO	YES	high
Yip, 2008[299]	Open	ITT planned, but not executed	NR	YES	medium
Yurtkuran, 2006[300]	DB	NO	NR	YES	medium
Zizic, 1995[301]	DB	NO	NR	YES	medium
Adedoyin, 2005[302]	SB	NO	NR	NO	high
Aglamis, 2009[40]	Open	NO	NR	NO	high
Balint, 2007[303]	DB	NO	NR	NR	medium
Bar-Ziv, 2010[304]	SB	NO	NR	NR	medium
Bautch, 1997[305]	Open	NO	NR	NO	high
Burch, 2008[306]	SB	NO	NR	NO	high
Callaghan, 1995[307]	SB	NO	NR	NR	medium
Cheing, 2004[308]	Open	NO	NR	NO	high
Diracoglu, 2005[309]	SB	NO	NR	YES	medium
Evcik, 2002[310]	Not RCT	NA	NA	NA	high
Gaines, 2004[311]	Open	NO	NR	NO	high
Kovar, 1992[312]	Open	NO	NR	YES	medium
Kreindler, 1989[313]	Open	No ITT planned, all patients analysed	NO	YES	medium
Kuptniratsaikul, 2002[314]	Open	NO	NR	YES	medium
Peloquin, 1999[315]	SB	NO	YES	NO	high
Peterson, 1993[316]	Open label	No	No	Yes	high
Pipitone, 2001[317]	Double blind	No	Yes	No	high
Sullivan, 1998[318]	SB	NO	NR	NO	high
Talbot, 2003[319]	Open	NO	YES	NO	high
Tsauo, 2008[320]	SB	NO	NR	NO	high
French, 2010[49]	SB	NO	NR	NR	medium
Hinman, 2008[321]	randomized order	NO	NR	NR	medium
Hinman, 2009[322]	randomized order design	NO	NO	NR	high
Horlick, 1993[323]	SB	NO	NR	YES	medium
Jacobson, 2001[324]	DB	NO	NR	NR	medium
Kuroyanagi, 2007[325]	randomized order	unclear	NR	NR	NA
Maly, 2002[326]	randomized order	No ITT planned, all patients analysed	NR	NR	low
Oldham, 1995[327]	DB	NO	NR	NR	medium

Appendix Table F9. Characteristics of the included subjects in the studies of physical therapy interventions

Study characteristics	Category	Included in quantitative pooling analyses	Included in qualitative analyses	Included in quantitative analyses	Total
	No	18	1	10	29
Reporting subjec charateristics	Yes	189	28	10	227
Country	Australia	15	5	2	22
Country	Austria	1	0	0	1
Country	Bangladesh	1	0	0	1
Country	Brazil	3	0	0	3
Country	Canada	7	0	2	9
Country	China	6	0	0	6
Country	Czechoslovakia	0	0	1	1
Country	Denmark	5	0	0	5
Country	France	4	2	0	6
Country	Hong Kong	8	0	0	8
Country	Hungary	2	0	0	2
Country	India	0	0	1	1
Country	Ireland	1	0	0	1
Country	Israel	6	0	1	7
Country	Italy	5	0	0	5
Country	Japan	10	0	4	14
Country	Korea	1	0	0	1
Country	Netherlands	3	7	1	11
Country	Nigeria	2	0	0	2
Country	Norway	1	0	0	1
Country	Singapore	1	0	0	1
Country	South Korea	3	1	0	4
Country	Sweden	2	1	0	3
Country	Switzerland	1	0	0	1
Country	Taiwan	10	1	1	12
Country	Thailand	4	0	0	4
Country	Turkey	22	0	1	23
Country	UK	18	4	3	25
Country	USA	65	8	3	76
Concomitant drug use	NA	91	16	18	125
Concomitant drug use	No	18	0	0	18
Concomitant drug use	Yes	98	13	2	113
Prior surgery for OA	NA	181	27	20	228
Prior surgery for OA	No	20	1	0	21
Prior surgery for OA	Yes	6	1	0	7
	Total	207	29	20	256
	%	80.86	11.33	7.81	100

Appendix Table F10. Sample size and intensity of examined physical therapy interventions

Physical therapy interventions	N studies	SIZE	SIZE	SIZE	N studies with reported intensity	Intensity/week
		Mean	Std Dev	Sum		Mean
Exercise aerobic	23	172	158	3948	3	1.67
Exercise strength	17	136	196	2315	15	3.87
Orthotics vs orthotics	15	86	56	1287	8	7.00
Exercise strength vs strength	14	75	41	1044	11	3.45
Education	6	169	87	1016	3	2.33
Balneotherapy	9	106	131	954	7	4.29
Estim	21	45	20	939	16	4.69
Exercise ED	3	243	81	729	1	7.00
Exercise aerobic vs aerobic	4	143	71	572	1	3.00
PEMF	7	80	47	558	6	5.17
Exercise NS	2	239	67	477	17	2.59
Brace	4	104	36	414	1	7.00
Exercise aerobic vs strength	1	357	.	357	1	3.00
Diathermy	5	66	39	330	5	3.00
Exercise aquatic	2	147	144	294	3	2.67
Orthotics	6	44	43	264	3	7.00
Tai chi	4	60	20	239	3	2.67
Ultrasound	3	67	7	201	2	5.00
Exercise aerobic vs ed	1	193	.	193	1	3.00
Exercise aquatic vs aerobic	3	63	17	189		
Exercise proprioception	3	61	25	183	3	3.00
Massage	4	45	22	181	2	2.50
Brace vs brace	4	43	24	172	1	7.00
EstimEstim vs exercise	4	37	9	149	1	5.00
EstimEstim vs Estim	2	74	50	147	2	6.00
Taping+massage+exercise	1	140	.	140		
Joint mobilization+exercise	1	134	.	134	1	2.00
Acupuncture+exercise	1	121	.	121	1	1.00
Exercise proprioception vs strength	1	108	.	108	1	3.00
Taping	2	53	49	105		
Pulsed Signal Therapy vs massage	1	95	.	95	1	5.00
Orthotics vs brace	1	91	.	91	1	7.00
EMF	1	90	.	90	1	7.00
Tai chi vs stretching	2	38	4	75	1	2.00
Heat t+vibration	1	71	.	71	1	7.00
Magnet therapy	2	35	12	69	2	7.00
Exercise balance	1	66	.	66	1	3.00
Mud Pack	1	60	.	60	1	5.00
Diathermy vs exercise	1	50	.	50	1	1.00
EMF vs Estim	1	40	.	40	1	5.00
Diathermy + heat	1	40	.	40	1	3.00
Joint mobilization	1	38	.	38		
Exercise stretching	1	36	.	36	1	7.00
Heat	1	34	.	34	1	5.00
Taping vs taping	2	16	3	32	1	4.00
Therapeutic touch	1	31		31		
Estim+acupuncture	1	24	.	24	1	4.00

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Diathermy	Disability	medium	Callaghan, 2005[216] 2 weeks 9/9	5.10±2.30 5.10±1.70	0.00 (-0.92; 0.92)	6.3	0.00 (-0.92; 0.92)	6.2
Diathermy	Disability	medium	Callaghan, 2005[216] 2 weeks 9/9	5.50±3.00 5.10±1.70	0.16 (-0.76; 1.09)	6.3	0.16 (-0.77; 1.08)	6.1
Diathermy	Disability	medium	Fukuda, 2011[328] 3 weeks 29/21	-63.20±16.50 -51.50±17.50	-0.69 (-1.27; -0.11)	15.2	-0.68 (-1.26; -0.10)	15.2
Diathermy	Disability	medium	Fukuda, 2011[328] 3 weeks 30/21	-61.50±20.30 -51.50±17.50	-0.52 (-1.09; 0.05)	15.8	-0.51 (-1.08; 0.05)	15.7
Diathermy	Disability	medium	Laufer, 2005[250] 3 weeks 32/33	4.40±3.44 4.63±3.54	-0.07 (-0.55; 0.42)	20.8	-0.07 (-0.55; 0.42)	21.0
Diathermy	Disability	medium	Laufer, 2005[250] 3 weeks 38/33	4.93±3.63 4.63±3.54	0.08 (-0.38; 0.55)	22.3	0.08 (-0.38; 0.55)	22.6
Diathermy	Disability	low	Akyol, 2010[147] 4 weeks 20/20	-52.75±25.10 -46.00±21.92	-0.29 (-0.91; 0.34)	13.3	-0.28 (-0.90; 0.34)	13.2
		Studies: 4; Subjects: 250			-0.21 (-0.447, 0.027)	I-squared=0.085, p=0.364	-0.206 (-0.438, 0.026)	I-squared=0.053, p=0.387
Diathermy	Disability	medium	Laufer, 2005[250] 6 weeks 32/33	4.56±3.31 4.60±3.58	-0.01 (-0.50; 0.47)	37.1	-0.01 (-0.50; 0.47)	37.1
Diathermy	Disability	medium	Laufer, 2005[250] 6 weeks 38/33	4.82±3.71 4.60±3.58	0.06 (-0.41; 0.53)	40.3	0.06 (-0.41; 0.53)	40.3
Diathermy	Disability	low	Akyol, 2010[147] 6 weeks 20/20	-51.75±29.74 -44.00±23.26	-0.29 (-0.91; 0.33)	22.6	-0.28 (-0.91; 0.34)	22.6

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
		Studies: 2; Subjects: 143			-0.046 (-0.342, 0.251)	I-squared=0, p=0.667	-0.044 (-0.341, 0.252)	I-squared=0, p=0.677
Diathermy	Pain	medium	Callaghan, 2005[216] 2 weeks 9/9	5.50±2.70 6.30±1.90	-0.34 (-1.27; 0.59)	10.8	-0.33 (-1.26; 0.61)	10.7
Diathermy	Pain	medium	Callaghan, 2005[216] 2 weeks 9/9	5.00±3.20 6.30±1.90	-0.49 (-1.43; 0.45)	10.7	-0.47 (-1.41; 0.47)	10.6
Diathermy	Pain	medium	Fukuda, 2011[328] 3 weeks 29/21	4.60+/-2.50 6.90+/-2.00	-1.00 (-1.59; -0.40)	15.2	-0.98 (-1.58; -0.39)	15.2
Diathermy	Pain	medium	Fukuda, 2011[328] 3 weeks 30/21	3.80+/-2.20 6.90+/-2.00	-1.46 (-2.09; -0.83)	14.7	-1.44 (-2.07; -0.81)	14.7
Diathermy	Pain	medium	Laufer, 2005[250] 3 weeks 32/33	4.03±3.30 4.44±3.51	-0.6 (-0.61; 0.37)	16.8	-0.6 (-0.61; 0.37)	16.9
Diathermy	Pain	medium	Laufer, 2005[250] 3 weeks 38/33	4.73±3.48 4.44±3.51	0.08 (-0.38; 0.55)	17.1	0.08 (-0.38; 0.55)	17.2
Diathermy	Pain	low	Akyol, 2010[147] 4 weeks 20/20	3.30±2.00 4.25±1.77	-0.50 (-1.13; 0.13)	14.7	-0.49 (-1.6; 0.14)	14.7
		Studies: 4; Subjects: 250			-0.537 (-0.973, -0.101)	I-squared=0.701, p=0.003	-0.525 (-0.954, -0.095)	I-squared=0.691, p=0.004
Diathermy	Pain	medium	Cetin, 2008[217] 8 weeks 18/17	3.36±1.33 3.49±1.28	-0.10 (-0.76; 0.56)	16.6	-0.10 (-0.76; 0.57)	16.6
Diathermy	Pain	medium	Laufer, 2005[250] 6 weeks 32/33	4.09±3.49 4.33±3.69	-0.07 (-0.55; 0.42)	30.9	-0.07 (-0.55; 0.42)	30.9
Diathermy	Pain	medium	Laufer, 2005[250] 6 weeks 38/33	4.48±3.58 4.33±3.69	0.04 (-0.43; 0.51)	33.6	0.04 (-0.43; 0.51)	33.6

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Diathermy	Pain	low	Akyol, 2010[147] 6 weeks 20/20	4.65±3.67 4.35±2.54	0.10 (-0.53; 0.72)	19.0	0.09 (-0.53; 0.71)	19.0
		Studies: 3; Subjects: 178			-0.005 (-0.275, 0.265)	I-squared=0, p=0.964	-0.005 (-0.275, 0.265)	I-squared=0, p=0.966
Diathermy	Function composite	medium	Fukuda, 2011[328] 3 weeks 29/21	-62.70+/-18.60 -44.80+/-16.30	-1.01 (-1.61; -0.42)	19.2	-1.00 (-1.59; -0.40)	15.2
Diathermy	Function composite	medium	Fukuda, 2011[328] 3 weeks 30/21	-66.50+/-20.30 -44.80+/-16.30	-1.16 (-1.76; -0.55)	19.1	-1.14 (-1.74; -0.54)	14.7
Diathermy	Function composite	medium	Laufer, 2005[250] 3 weeks 32/33	4.61±3.43 4.89±3.44	-0.08 (-0.57; 0.40)	21.3	-0.08 (-0.57; 0.41)	21.3
Diathermy	Function composite	medium	Laufer, 2005[250] 3 weeks 38/33	5.06±3.54 4.89±3.44	0.05 (-0.42; 0.52)	21.7	0.05 (-0.42; 0.51)	21.7
Diathermy	Function composite	low	Akyol, 2010[147] 4 weeks 20/20	21.60±6.55 24.55±11.24	-0.25 (-0.87; 0.37)	18.7	-0.24 (-0.87; 0.38)	18.7
		Studies: 3; Subjects: 223			-0.468 (-0.952, 0.015)	I-squared=0.742, p=0.004	-0.46 (-0.936, 0.016)	I-squared=0.734, p=0.005
Diathermy	Function composite	medium	Cetin, 2008[217] 8 weeks 18/17	6.81±2.69 6.87±2.58	-0.02 (-0.69; 0.64)	16.6	-0.02 (-0.69; 0.64)	16.6
Diathermy	Function composite	medium	Laufer, 2005[250] 6 weeks 32/33	4.80±3.25 4.82±3.42	-0.01 (-0.49; 0.48)	30.9	-0.01 (-0.49; 0.48)	30.9
Diathermy	Function composite	medium	Laufer, 2005[250] 6 weeks 38/33	4.98±3.61 4.82±3.42	0.05 (-0.42; 0.51)	33.5	0.04 (-0.42; 0.51)	33.5
Diathermy	Function composite	low	Akyol, 2010[147] 6 weeks 20/20	24.10±17.61 24.30±14.39	-0.01 (-0.63; 0.61)	19.0	-0.01 (-0.63; 0.61)	19.0

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
		Studies: 3; Subjects: 178			0.007 (-0.263, 0.277)	I-squared=0, p=0.998	0.007 (-0.263, 0.277)	I-squared=0, p=0.998
Diathermy	Function joint	medium	Laufer, 2005[250] 3 weeks 32/33	3.69±3.79 2.98±3.26	0.20 (-0.29; 0.69)	37.2	0.20 (-0.29; 0.69)	37.2
Diathermy	Function joint	medium	Laufer, 2005[250] 3 weeks 38/33	4.39±3.66 2.98±3.26	0.41 (-0.07; 0.88)	39.7	0.40 (-0.07; 0.87)	39.8
Diathermy	Function joint	low	Akyol, 2010[147] 4 weeks 20/20	1.80±1.73 2.05±1.27	-0.16 (-0.79; 0.46)	23.2	-0.16 (-0.78; 0.46)	22.9
		Studies: 2; Subjects: 143			0.197 (-0.104, 0.499)	I-squared=0.026, p=0.358	0.197 (-0.101, 0.494)	I-squared=0, p=0.368
Diathermy	Function joint	medium	Laufer, 2005[250] 6 weeks 32/33	3.81±3.28 3.60±3.78	0.06 (-0.43; 0.55)	37.1	0.06 (-0.43; 0.54)	37.1
Diathermy	Function joint	medium	Laufer, 2005[250] 6 weeks 38/33	4.43±3.85 3.60±3.78	0.22 (-0.25; 0.69)	40.2	0.22 (-0.25; 0.68)	40.2
Diathermy	Function joint	low	Akyol, 2010[147] 6 weeks 20/20	2.15±1.75 1.80±1.19	0.23 (-0.39; 0.86)	22.7	0.23 (-0.39; 0.85)	22.7
		Studies: 2; Subjects: 143			0.162 (-0.134, 0.459)	I-squared=0, p=0.871	0.16 (-0.136, 0.457)	I-squared=0, p=0.875
Diathermy	Gait function	medium	Callaghan, 2005[216] 2 weeks 9/9	13.30±2.80 13.90±3.60	-0.19 (-1.11; 0.74)	8.5	-0.18 (-1.10; 0.75)	8.5
Diathermy	Gait function	medium	Callaghan, 2005[216] 2 weeks 9/9	14.70±6.80 13.90±3.60	0.15 (-0.78; 1.07)	8.5	0.14 (-0.79; 1.07)	8.5
Diathermy	Gait function	medium	Laufer, 2005[250] 3 weeks 32/33	-146.41±36.30 -137.21±43.44	-0.23 (-0.72; 0.26)	30.6	-0.23 (-0.71; 0.26)	30.6

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Diathermy	Gait function	medium	Laufer, 2005[250] 3 weeks 38/33	-138.08±37.54 -137.21±43.44	-0.02 (-0.49; 0.44)	33.5	-0.02 (-0.49; 0.45)	33.5
Diathermy	Gait function	low	Akyol, 2010[147] 4 weeks 20/20	-469.65±115.75 -460.65±81.04	-0.09 (-0.71; 0.53)	18.9	-0.09 (-0.71; 0.53)	18.9
		Studies: 3; Subjects: 170			-0.098 (-0.368, 0.172)	I-squared=0, p=0.953	-0.096 (-0.366, 0.174)	I-squared=0, p=0.957
Diathermy	Gait function	medium	Cetin, 2008[217] 8 weeks 18/17	39.90±6.47 40.60±6.04	-0.11 (-0.78; 0.55)	16.6	-0.11 (-0.77; 0.55)	16.6
Diathermy	Gait function	medium	Laufer, 2005[250] 6 weeks 32/33	-144.53±30.06 -133.62±49.32	-0.27 (-0.75; 0.22)	30.7	-0.26 (-0.75; 0.23)	30.7
Diathermy	Gait function	medium	Laufer, 2005[250] 6 weeks 38/33	-135.42±34.40 -133.62±49.32	-0.04 (-0.51; 0.42)	33.7	-0.04 (-0.51; 0.42)	33.7
Diathermy	Gait function	low	Akyol, 2010[147] 6 weeks 20/20	-460.60±103.92 -447.45±101.58	-0.13 (-0.75; 0.49)	19.0	-0.13 (-0.75; 0.50)	19.0
		Studies: 3; Subjects: 178			-0.139 (-0.41, 0.132)	I-squared=0, p=0.934	-0.137 (-0.408, 0.134)	I-squared=0, p=0.936
Estim vs. exercise	Pain	high	Cheing, 2002[219] 4 weeks 16/15	42.20±27.00 63.20±64.00	-0.43 (-1.15; 0.28)	49.9	-0.42 (-1.13; 0.29)	49.9
Estim vs. exercise	Pain	low	Durmus, 2007[157] 4 weeks 25/25	0.60±0.10 1.04±0.27	-2.16 (-2.86; -1.46)	50.1	-2.13 (-2.83; -1.42)	50.1
		Studies: 2; Subjects: 81			-1.298 (-2.992, 0.396)	I-squared=0.913, p=0.001	-1.275 (-2.947, 0.396)	I-squared=0.91, p=0.001
Estim vs. exercise	Gait function	medium	Cheing, 2004[308] 4 weeks 16/15	-0.97±0.19 -0.89±0.10	-0.52 (-1.24; 0.20)	48.8	-0.51 (-1.23; 0.21)	48.8

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Estim vs. exercise	Gait function	low	Durmus, 2007[157] 4 weeks 25/25	49.92±2.69 48.10±1.10	0.89 (0.30; 1.47)	51.2	0.87 (0.29; 1.45)	51.2
		Studies: 2; Subjects: 81			0.198 (-1.181, 1.577)	I-squared=0.888, p=0.003	0.198 (-1.154, 1.55)	I-squared=0.883, p=0.003
Ed	Pain	low	Shakoor, 2007[194] 6 weeks 83/79	7.70±4.07 9.77±4.73	-0.47 (-0.78; -0.16)	29.5	-0.47 (-0.78; -0.16)	29.6
Ed	Pain	medium	Keefe, 2004[247] 6 weeks 16/16	4.00±1.56 4.03±2.08	-0.02 (-0.71; 0.68)	20.9	-0.02 (-0.71; 0.68)	20.9
Ed	Pain	medium	Keefe, 2004[247] 6 weeks 16/19	4.26±1.45 3.19±1.85	0.64 (-0.05; 1.32)	21.1	0.62 (-0.06; 1.31)	21.1
Ed	Pain	medium	Farr, 2010[10] 6 weeks 62/57	67.10±68.80 47.60±50.90	0.32 (-0.04; 0.68)	28.5	0.32 (-0.04; 0.68)	28.5
		Studies: 3; Subjects: 348			I-squared=0.8 , p=0.002	0.08 (-0.44; 0.60)	I-squared=0. 796, p=0.002	I-squared=0.8, p=0.002
Ed	Pain	medium	Farr, 2010[10] 36 weeks 62/57	56.20±75.30 48.60±61.30	-0.13 (-0.44; 0.18)	36.1	-0.13 (-0.44; 0.18)	36.2
Ed	Pain	low	Messier, 2004[258] 72 weeks 82/78	5.51±4.07 6.02±3.97	-0.28 (-0.60; 0.03)	35.2	-0.28 (-0.60; 0.04)	35.2
Ed	Pain	low	Messier, 2004[258] 72 weeks 76/80	5.07±4.10 6.24±4.20	0.11 (-0.25; 0.47)	28.7	0.11 (-0.25; 0.47)	28.6
		Studies: 2; Subjects: 435			-0.113 (-0.328, 0.101)	I-squared=0.226, p=0.275	-0.113 (-0.327, 0.1)	I-squared=0.217, p=0.279
Exercise proprioception	Pain	low	Weng, 2009[204] 8 weeks 62/66	2.70±1.90 4.40±1.40	-1.02 (-1.39; -0.65)	36.2	-1.02 (-1.39; -0.65)	36.2

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Exercise proprioception	Pain	low	Lin, 2009[175] 8 weeks 36/36	4.30±2.30 7.30±3.40	-1.03 (-1.53; -0.54)	32.6	-1.02 (-1.52; -0.53)	32.6
Exercise proprioception	Pain	high	Tsauo, 2008[320] 8 weeks 30/24	64.00±37.00 66.00±38.00	-0.05 (-0.59; 0.48)	31.2	-0.05 (-0.59; 0.48)	31.2
		Studies: 3; Subjects: 254			-0.724 (-1.36, -0.135)	I-squared=0.794, p=0.008	| (-0.718, -1.302)	I-squared=0.791, p=0.008
Exercise proprioception	Function composite	low	Weng, 2009[204] 8 weeks 31/33	4.20±0.50 6.90±1.30	-2.71 (-3.39; -2.03)	32.7	-2.68 (-3.36; -1.99)	32.7
Exercise proprioception	Function composite	low	Lin, 2009[175] 8 weeks 36/36	14.60±9.60 24.90±11.80	-0.96 (-1.45; -0.47)	33.8	-0.95 (-1.44; -0.46)	33.8
Exercise proprioception	Function composite	high	Tsauo, 2008[320] 8 weeks 30/24	322.00±216.00 273.00±186.00	0.24 (-0.30; 0.78)	33.5	0.24 (-0.30; 0.78)	33.5
		Studies: 3; Subjects: 190			-1.68 (-2.659, 0.402)	I-squared=0.955, p=0	-1.115 (-2.626, 0.396)	I-squared=0.953, p=0
Exercise proprioception	Gait function	medium	Jan, 2008[243] 6 weeks 20/23	26.50±2.30 33.10±3.40	-2.24 (-3.01; -1.47)	31.1	-2.20 (-2.98; -1.43)	31.0
Exercise proprioception	Gait function	low	Lin, 2009[175] 8 weeks 36/36	34.80±7.20 38.00±3.80	-0.56 (-1.03; -0.08)	34.8	-0.55 (-1.02; -0.08)	34.9
Exercise proprioception	Gait function	high	Tsauo, 2008[320] 8 weeks 30/24	40.40±6.70 41.70±6.50	-0.20 (-0.73; 0.34)	34.1	-0.19 (-0.73; 0.34)	34.1
		Studies: 3; Subjects: 169			-0.958 (-1.992, 0.076)	I-squared=0.895, p=0	-0.94 (-1.953, 0.073)	I-squared=0.891, p=0
Orthotics	Gait function	low	Hinman, 2009[322] 4 weeks 20/20	-1.27±0.24 -1.27±0.22	0.00 (-0.62; 0.62)	11.6	0.00 (-0.62; 0.62)	11.6

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Orthotics	Gait function	low	Maly, 2002[326] immediate after treatment 9/9	-0.92±0.16 -0.93±0.16	0.06 (-0.86; 0.99)	5.2	0.06 (-0.86; 0.98)	5.2
Orthotics	Gait function	low	Maly, 2002[326] immediate after treatment 9/9	-0.93±0.16 -0.93±0.16	0.00 (-0.92; 0.92)	5.2	0.00 (-0.92; 0.92)	5.2
Orthotics	Gait function	low	Kerrigan, 2002[172] immediate after treatment 15/15	-1.17±0.18 -1.17±0.19	0.00 (-0.72; 0.72)	8.7	0.00 (-0.72; 0.72)	8.7
Orthotics	Gait function	low	Kerrigan, 2002[172] immediate after treatment 15/15	-1.15±0.20 -1.17±0.19	0.10 (-0.61; 0.82)	8.7	0.10 (-0.62; 0.82)	8.7
Orthotics	Gait function	low	Kerrigan, 2002[172] immediate after weeks 15/15	-1.16±0.18 -1.17±0.19	0.05 (-0.66; 0.77)	8.7	0.05 (-0.66; 0.77)	8.7
Orthotics	Gait function	low	Kerrigan, 2002[172] immediate after treatment 15/15	-1.15±0.18 -1.17±0.19	0.11 (-0.61; 0.82)	8.7	0.11 (-0.61; 0.82)	8.7
Orthotics	Gait function	low	Kuroyanagi, 2007[325] immediate after treatment 37/37	-0.76±0.26 -0.73±0.23	-0.6 (-0.58; 0.33)	21.5	-0.6 (-0.58; 0.34)	21.5
Orthotics	Gait function	low	Kuroyanagi, 2007[325] immediate after treatment 37/37	-0.74±0.26 -0.73±0.23	-0.04 (-0.50; 0.41)	21.5	-0.04 (-0.50; 0.42)	21.5
		Studies: 4; Subjects: 262			-0.009 (-0.22, 0.203)	I-squared=0, p=1	-0.009 (-0.221, 0.202)	I-squared=0, p=1

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Orthotics	Function composite	medium	Toda, 2005[287] 2 weeks 21/22	6±4.8 7.5±5.1	-0.30 (-0.90, 0.30)	25.1	-0.30 (-0.90, 0.30)	25.2
Orthotics	Function composite	medium	Toda, 2005[287] 2 weeks 20/22	3±3.8 7.5±5.1	-0.99 (-1.64, -0.35)	24.3	-0.97 (-1.62, -0.33)	24.3
Orthotics	Function composite	medium	Toda, 2005[287] 2 weeks 18/22	8.3±5.2 7.5±5.1	0.16 (-0.47, 0.78)	24.7	0.15 (-0.47, 0.78)	24.7
Orthotics	Function composite	high	Bar-Ziv, 2010[304] 4 weeks 31/26	3.1±1.9 5.5±2.2	-1.18 (-1.74, -0.61)	25.9	-1.16 (-1.73, -0.59)	25.9
		Studies: 2; Subjects: 138			-0.583 (-1.191, 0.024)	I-squared = 0.75; p-value = 0.007	-0.574 (-1.172, 0.024)	I-squared = 0.742; p-value = 0.009
Elastic subtalar strapping	Function composite	medium	Toda, 2001[283] 8 weeks 46/44	8.2±5.4 8.8±5.3	-0.11 (-0.53, 0.30)	38.7	-0.11 (-0.52, 0.30)	38.7
Elastic subtalar strapping	Function composite	medium	Toda, 2004[286] 12 weeks 29/32	7.6±5.7 9.2±5.8	-0.28 (-0.78, 0.23)	26.0	-0.27 (-0.78, 0.23)	26.0
Elastic subtalar strapping	Function composite	medium	Toda, 2008[289] 12 weeks 41/43	6.8±5.1 9.1±5.3	-0.44 (-0.88, -0.01)	35.3	-0.44 (-0.87, -0)	35.3
		Studies: 3; Subjects: 235			-0.272 (-0.529, -0.014)	I-squared = 0; p-value = 0.558	-0.269 (-0.526, -0.012)	I-squared = 0; p-value = 0.564
Massage	Function composite	medium	Yip, 2008[298] 7 weeks 21/18	10.54±7.89 14.64±4.88	-0.61 (-1.26; 0.03)	34.6	-0.60 (-1.25; 0.04)	34.6
Massage	Function composite	medium	Yip, 2008[298] 7 weeks 20/18	10.61±5.97 14.64±4.88	-0.74 (-1.39; -0.08)	33.1	-0.72 (-1.38; -0.06)	33.1
Massage	Function composite	low	Ko, 2009[173] 8 weeks 17/18	41.73±7.58 44.09±6.19	-0.34 (-1.01; 0.33)	32.3	-0.33 (-1.00; 0.33)	32.3

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
		Studies: 2; Subjects: 94			-0.566 (-0.946, -0.187)	I-squared=0, p=0.703	-0.554 (-0.934, -0.175)	I-squared=0, p=0.76
Massage	Function joint	medium	Yip, 2008[298] 7 weeks 21/18	1.58±1.46 2.59±2.24	-0.54 (-1.18; 0.10)	32.8	-0.53 (-1.17; 0.11)	32.8
Massage	Function joint	medium	Yip, 2008[298] 7 weeks 20/18	1.01±1.03 2.59±2.24	-0.92 (-1.59; -0.25)	32.4	-0.90 (-1.58; -0.23)	32.4
Massage	Function joint	medium	Perlman, 2006[19] 8 weeks 34/34	21.60±26.99 4.29±24.18	0.68 (0.19; 1.16)	34.8	0.67 (0.18; 1.16)	34.8
		Studies: 2; Subjects: 127			-0.243 (-1.255, 0.769)	I-squared=0.884, p=0	-0.235 (-1.23, 0.76)	I-squared=0.88, p=0
Estim	Disability	low	Garland, 2007[163] 6 weeks 39/19	39.60±24.25 45.90±16.81	-0.28 (-0.84; 0.27)	58.0	-0.28 (-0.83; 0.27)	58.0
Estim	Disability	low	Selfe, 2008[193] 6 weeks 18/19	70.39±48.82 82.07±39.70	-0.26 (-0.91; 0.38)	42.0	-0.26 (-0.91; 0.39)	42.0
		Studies: 2; Subjects: 95			-0.276 (-0.695, 0.144)	I-squared=0, p=0.961	-0.271 (-0.691, 0.149)	I-squared=0, p=0.957
Estim	Pain	medium	Taylor, 1981[279] 2 weeks 10/10	-0.90±0.57 -0.30±0.95	-0.77 (-1.68; 0.15)	7.3	-0.73 (-1.65; 0.18)	7.2
Estim	Pain	medium	Law, 2004[251] 2 weeks 13/10	1.40±1.50 4.10±2.60	-1.32 (-2.24; -0.40)	7.3	-1.27 (-2.19; -0.35)	7.1
Estim	Pain	medium	Law, 2004[251] 2 weeks 12/10	0.70±0.70 4.10±2.60	-1.87 (-2.89; -0.85)	6.2	-1.80 (-2.82; -0.77)	5.9
Estim	Pain	medium	Law, 2004[251] 2 weeks 13/10	1.10±1.70 4.10±2.60	-1.41 (-2.33; -0.48)	7.1	-1.36 (-2.29; -0.43)	6.9

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Estim	Pain	high	Cheing, 2002[219] 4 weeks 16/14	42.20±27.00 50.40±42.40	-0.23 (-0.95; 0.49)	10.2	-0.23 (-0.95; 0.49)	10.3
Estim	Pain	high	Cheing, 2002[219] 4 weeks 13/15	55.60±50.60 63.20±64.00	-0.13 (-0.87; 0.61)	9.7	-0.13 (-0.87; 0.62)	9.8
Estim	Pain	low	Selfe, 2008[193] 4 weeks 18/19	15.33±10.99 19.63±9.09	-0.43 (-1.08; 0.22)	11.5	-0.42 (-1.07; 0.23)	11.9
Estim	Pain	medium	Itoh, 2008[242] 5 weeks 6/6	38.80±13.30 54.50±8.70	-1.40 (-2.68; -0.11)	4.2	-1.29 (-2.58; 0.01)	3.9
Estim	Pain	medium	Itoh, 2008[242] 5 weeks 6/6	33.30±11.70 41.70±10.60	-0.75 (-1.93; 0.43)	4.9	-0.69 (-1.88; 0.49)	4.6
Estim	Pain	medium	Pietrosimone, 2009[329] 1 week 10/12	11.65+/-16.71 20.96+/-18.44	-0.53 (-1.38; 0.33)	8.0	-0.51 (-1.36; 0.35)	7.9
Estim	Pain	medium	Grimmer, 1992[232] immediate after treatment 20/20	2.20±2.80 3.50±2.90	-0.46 (-1.08; 0.17)	12.0	-0.45 (-1.08; 0.18)	12.5
Estim	Pain	medium	Grimmer, 1992[232] immediate after treatment 20/20	1.50±1.80 3.50±2.90	-0.83 (-1.48; -0.18)	11.6	-0.81 (-1.46; -0.16)	12.0
		Studies: 7; Subjects: 289			-0.741 (-1.026, -0.456)	I-squared=0.295, p=0.156	-0.704 (-0.975, -0.433)	I-squared=0.224, p=0.223
Estim	Pain	high	Cheing, 2002[219] 8 weeks 16/14	43.70±30.30 48.60±42.20	-0.13 (-0.85; 0.58)	10.9	-0.13 (-0.85; 0.59)	10.9
Estim	Pain	high	Cheing, 2002[219] 8 weeks 13/15	61.10±57.90 95.20±118.00	-0.36 (-1.11; 0.39)	10.0	-0.35 (-1.10; 0.40)	10.0

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Estim	Pain	medium	Cetin, 2008[217] 8 weeks 17/17	3.52±1.18 3.49±1.28	0.02 (-0.65; 0.70)	12.5	0.02 (-0.65; 0.70)	12.5
Estim	Pain	medium	Itoh, 2008[242] 10 weeks 6/6	53.50±9.70 49.30±20.20	0.27 (-0.87; 1.40)	4.4	0.24 (-0.89; 1.38)	4.3
Estim	Pain	medium	Itoh, 2008[242] 10 weeks 6/6	41.30±20.20 43.00±21.20	-0.08 (-1.21; 1.05)	4.4	-0.08 (-1.21; 1.06)	4.4
Estim	Pain	high	Gaines, 2004[311] 6 weeks 20/18	5.18±2.11 5.99±2.40	-0.36 (-1.00; 0.28)	13.7	-0.35 (-0.99; 0.29)	13.7
Estim	Pain	low	Garland, 2007[163] 6 weeks 39/19	37.40±23.60 41.80±16.59	-0.20 (-0.75; 0.35)	18.6	-0.20 (-0.75; 0.35)	18.6
Estim	Pain	low	Selfe, 2008[193] 6 weeks 18/19	14.17±10.68 15.89±8.92	-0.18 (-0.82; 0.47)	13.5	-0.17 (-0.82; 0.47)	13.5
Estim	Pain	medium	Talbot, 2003[277] 6 weeks 18/16	16.33±13.35 11.60±8.00	0.47 (-0.22; 1.15)	12.1	0.46 (-0.23; 1.14)	12.1
		Studies: 7; Subjects: 283			-0.094 (-0.331, 0.143)	I-squared=0, p=0.814	-0.093 (-0.33, 0.145)	I-squared=0, p=0.837
Estim	Pain	high	Gaines, 2004[311] 16 weeks 20/18	19.38±13.66 10.44±5.25	0.85 (0.18; 1.51)	50.8	0.83 (0.16; 1.50)	50.9
Estim	Pain	medium	Talbot, 2003[277] 24 weeks 18/16	16.14±6.03 6.42±9.66	0.34 (-0.34; 1.02)	49.2	0.33 (-0.35; 1.01)	49.1
		Studies: 2; Subjects: 72			0.597 (0.099, 1.095)	I-squared=0.088, p=0.295	0.584 (0.096, 1.072)	I-squared=0.051, p=0.305
Estim	Global assessment	low	Selfe, 2008[193] 8 weeks 18/19	3.11±1.78 4.32±1.83	-0.67 (-1.33; -0.01)	40.8	-0.66 (-1.32; 0.01)	40.8

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Estim	Global assessment	low	Garland, 2007[163] 6 weeks 39/19	38.30±25.81 45.10±21.41	-0.28 (-0.83; 0.27)	59.2	-0.27 (-0.82; 0.28)	59.2
		Studies: 2; Subjects: 95			-0.43 (-0.862, -0.006)	I-squared=0, p=0.373	-0.43 (-0.853, -0.006)	I-squared=0, p=0.386
Estim	Function composite	medium	Cetin, 2008[217] 8 weeks 17/17	7.22±2.06 6.87±2.58	0.15 (-0.52; 0.82)	27.9	0.15 (-0.53; 0.82)	27.9
Estim	Function composite	low	Garland, 2007[163] 6 weeks 39/19	43.10±28.59 50.10±18.09	-0.27 (-0.82; 0.28)	41.7	-0.27 (-0.82; 0.28)	41.7
Estim	Function composite	low	Selfe, 2008[193] 6 weeks 18/19	8.06±4.15 8.37±4.18	-0.07 (-0.72; 0.57)	30.4	-0.07 (-0.72; 0.57)	30.4
		Studies: 3; Subjects: 129			-0.09 (-0.45; 0.26)	I-squared=0, p=0.634	-0.09 (-0.45; 0.26)	I-squared=0, p=0.644
Estim	Function joint	low	Selfe, 2008[193] 4 weeks 18/19	53.33±34.58 66.00±30.15	-0.39 (-1.04; 0.26)	31.3	-0.38 (-1.03; 0.27)	31.3
Estim	Function joint	medium	Grimmer, 1992[232] immediate after treatment 20/20	1.60±2.60 2.40±3.10	-0.28 (-0.90; 0.34)	34.2	-0.27 (-0.90; 0.35)	34.2
Estim	Function joint	medium	Grimmer, 1992[232] immediate after treatment 20/20	2.10±2.80 2.40±3.10	-0.10 (-0.72; 0.52)	34.5	-0.10 (-0.72; 0.52)	34.5
		Studies: 2; Subjects: 97			-0.253 (-0.617, 0.111)	I-squared=0, p=0.815	-0.248 (-0.66, 0.116)	I-squared=0, p=0.822
Estim	Function joint	low	Garland, 2007[163] 6 weeks 39/19	39.90±24.59 46.60±18.31	-0.29 (-0.85; 0.26)	58.1	-0.29 (-0.84; 0.26)	58.1

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Estim	Function joint	low	Selfe, 2008[193] 6 weeks 18/19	48.17±35.63 57.81±29.65	-0.29 (-0.94; 0.35)	41.9	-0.29 (-0.94; 0.36)	41.9
		Studies: 2; Subjects: 95			-0.295 (-0.714, 0.125)	I-squared=0, p=0.999	-0.29 (-0.71, 0.13)	I-squared=0, p=0.997
Estim	Gait function	low	Yurtkuran, 1999[206] 2 weeks 25/25	19.10±15.70 13.40±4.20	0.50 (-0.07; 1.06)	19.2	0.49 (-0.08; 1.05)	19.4
Estim	Gait function	high	Cheing, 2004[308] 4 weeks 16/18	-0.97±0.19 -0.92±0.17	-0.28 (-0.96; 0.40)	17.6	-0.27 (-0.95; 0.41)	17.6
Estim	Gait function	high	Cheing, 2004[308] 4 weeks 17/15	-0.93±0.18 -0.89±0.10	-0.27 (-0.97; 0.43)	17.2	-0.26 (-0.96; 0.43)	17.2
Estim	Gait function	medium	Law, 2004[252] 4 weeks 22/17	15.50±6.40 20.00±11.60	-0.50 (-1.14; 0.14)	18.1	-0.49 (-1.13; 0.15)	18.2
Estim	Gait function	low	Pietrosimone, 2010[188] 4 weeks 10/10	-1.32±0.16 -1.30±0.24	-0.10 (-0.98; 0.78)	14.4	-0.09 (-0.97; 0.78)	14.2
Estim	Gait function	low	Pietrosimone, 2010[188] 4 weeks 10/11	-1.32±0.16 -1.50±0.14	1.20 (0.26; 2.14)	13.5	1.15 (0.21; 2.09)	13.3
		Studies: 4; Subjects: 196			-0.21 (-0.70, 0.29)	I-squared=0.648, p=0.014	-0.21 (-0.69, 0.27)	I-squared=0.625, p=0.02
Estim	Gait function	medium	Cetin, 2008[217] 8 weeks 17/17	42.40±8.40 40.60±6.04	0.25 (-0.43; 0.92)	20.5	0.24 (-0.43; 0.92)	20.5
Estim	Gait function	medium	Cetin, 2008[217] 8 weeks 17/15	42.40±8.40 39.95±8.89	0.28 (-0.41; 0.98)	19.2	0.28 (-0.42; 0.97)	19.2

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Estim	Gait function	high	Cheing, 2004[308] 8 weeks 16/18	-0.98±0.21 -0.93±0.21	-0.24 (-0.91; 0.44)	20.4	-0.23 (-0.91; 0.44)	20.4
Estim	Gait function	high	Cheing, 2004[308] 8 weeks 17/15	-0.90±0.19 -0.92±0.13	0.6 (-0.57; 0.82)	19.3	0.6 (-0.58; 0.81)	19.3
Estim	Gait function	medium	Talbot, 2003[277] 6 weeks 18/16	29.60±4.78 30.23±4.83	-0.13 (-0.81; 0.54)	20.5	-0.13 (-0.80; 0.55)	20.5
		Studies: 3; Subjects: 149			0.05 (-0.25; 0.36)	I-squared=0, p=0.778	0.05 (-0.25; 0.36)	I-squared=0, p=0.793
Estim	Strength, measured as 120 degree extension	medium	Cetin, 2008[217] 8 weeks 17/17	-49.85±15.72 -41.95±6.72	-0.55 (-1.24; 0.13)	33.2	-0.54 (-1.23; 0.15)	33.2
Estim	Strength, measured as 120 degree extension	medium	Cetin, 2008[217] 8 weeks 17/17	-44.85±11.40 -36.50±6.20	-0.71 (-1.40; -0.01)	32.5	-0.69 (-1.39; 0.00)	32.5
Estim	Strength, measured as 120 degree extension	medium	Talbot, 2003[277] 6 weeks 18/16	-315.39±76.42 -316.38±98.73	0.01 (-0.66; 0.68)	34.2	0.01 (-0.66; 0.68)	34.2
		Studies: 2; Subjects: 102			-0.41 (-0.84; 0.02)	I-squared=0.157, p=0.305	-0.40 (-0.82; 0.02)	I-squared=0.116, p=0.323
Estim	Strength, measured as 60 degree extension	medium	Cetin, 2008[217] 8 weeks 17/17	-57.80±17.21 -47.60±13.80	-0.65 (-1.34; 0.04)	25.3	-0.64 (-1.33; 0.05)	25.3
Estim	Strength, measured as 60 degree extension	medium	Cetin, 2008[217] 8 weeks 17/17	-54.05±14.36 -44.20±13.97	-0.70 (-1.39; 0.00)	25.1	-0.68 (-1.37; 0.01)	25.1

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Estim	Strength, measured as 60 degree extension	high	Cheing, 2004[308] 8 weeks 16/18	-82.60±19.90 -80.80±27.30	-0.07 (-0.75; 0.60)	26.6	-0.07 (-0.75; 0.60)	26.6
Estim	Strength, measured as 60 degree extension	high	Cheing, 2004[308] 8 weeks 17/15	-93.00±21.70 -69.60±34.20	-0.83 (-1.55; -0.10)	23.0	-0.81 (-1.53; -0.08)	23.0
		Studies: 2; Subjects: 134			-0.55 (-0.90; -0.20)	I-squared=0, p=0.434	-0.54 (-0.89; -0.19)	I-squared=0, p=0.457
Exercise aerobic	Disability	medium	Deyle, 2000[222] 4 weeks 33/36	505.20±196.96 921.20±584.39	-0.94 (-1.44; -0.44)	52.8	-0.93 (-1.43; -0.43)	53.0
Exercise aerobic	Disability	high	Aglamis, 2008[330] 6 weeks 17/17	-82.20±10.60 -49.40±14.20	-2.62 (-3.55; -1.69)	47.2	-2.56 (-3.49; -1.62)	47.0
		Studies: 2; Subjects: 103			-1.73 (-3.37, -0.09)	I-squared=0.898, p=0.002	-1.69 (-3.29, -0.10)	I-squared=0.89, p=0.003
Exercise aerobic	Disability	medium	Yip, 2007[296] 7 weeks 88/94	4.63±3.80 4.46±3.63	0.05 (-0.25; 0.34)	11.5	0.05 (-0.25; 0.34)	11.6
Exercsie aerobic	Disability	medium	Yip, 2008[299] 7 weeks 40/37	4.54±3.66 4.22±4.34	0.08 (-0.37; 0.53)	10.9	0.08 (-0.37; 0.53)	11.0
Exercise aerobic	Disability	high	Kovar, 1992[312] 8 weeks 47/45	3.74±2.69 5.96±2.32	-0.88 (-1.31; -0.45)	11.0	-0.88 (-1.30; -0.45)	11.0
Exercise aerobic	Disability	medium	Deyle, 2000[222] 8 weeks 33/36	462.40±438.17 934.30±653.57	-0.84 (-1.33; -0.35)	10.7	-0.83 (-1.33; -0.34)	10.7
Exercise aerobic	Disability	high	Sullivan, 1998[318] 8 weeks 29/23	3.93±2.80 6.26±1.94	-0.95 (-1.53; -0.37)	10.3	-0.93 (-1.51; -0.36)	10.3
Exercise aerobic	Disability	high	Bautch, 1997[305] 6 weeks 15/15	23.37±9.60 17.88±7.17	0.65 (-0.09; 1.38)	9.4	0.63 (-0.11; 1.37)	9.4

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Exercise aerobic	Disability	high	Peloquin, 1999[315] 6 weeks 59/65	1.85±2.26 1.93±1.88	-0.04 (-0.39; 0.31)	11.3	-0.04 (-0.39; 0.31)	11.4
Exercise aerobic	Disability	medium	Keefe, 2004[247] 6 weeks 16/16	220.46±44.66 224.17±54.26	0.07 (-0.62; 0.77)	9.7	-0.07 (-0.62;0.77)	9.6
Exercise aerobic	Disability	medium	Keefe, 2004[247] 6 weeks 16/19	238.71±31.61 234.13±37.43	-0.13 (-0.80; 0.53)	9.8	0.13 (-0.79;0.54)	9.8
Exercise aerobic	Disability	high	Aglamis, 2008[330] 12 weeks 17/17	-87.20±9.70 -36.40±7.90	-5.74 (-7.30; -4.18)	5.4	-5.61 (-7.18; -4.04)	5.2
		Studies: 9; Subjects: 727			-0.52 (-1.00, -0.03)	I-squared=0.89, p=0	-0.5 (-0.97, -0.03)	I-squared=0.885, p=0
Exercise aerobic	Disability	medium	Yip, 2007[296] 23 weeks 88/94	4.70±3.69 4.44±3.30	0.07 (-0.22; 0.37)	34.8	0.07 (-0.22; 0.36)	34.8
exercsie aerobic	Disability	medium	Yip, 2008[299] 23 weeks 39/35	4.28±3.68 3.57±2.80	0.22 (-0.24; 0.67)	34.4	0.21 (-0.24; 0.67)	34.4
exercsie aerobic	Disability	high	Evick, 2002[310] 24 weeks 28/26	8.60±4.00 36.60±6.10	-5.47 (-6.65; -4.29)	30.9	-5.39 (-6.57; -4.21)	30.8
		Studies: 3; Subjects: 310			-1.59 (-3.48, 0.31)	I-squared=0.976, p=0	-1.56 (-3.42, 0.30)	I-squared=0.975, p=0
Exercise aerobic	Disability	medium	Yip, 2008[299] 52 weeks 29/24	3.95±3.68 3.54±3.13	0.6 (-0.42; 0.66)	7.9	0.6 (-0.42; 0.66)	7.9
Exercise aerobic	Disability	high	Sullivan, 1998[318] 52 weeks 29/23	6.07±2.95 6.18±2.75	-0.04 (-0.59; 0.51)	7.7	-0.04 (-0.59; 0.51)	7.7

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Exercise aerobic	Disability	low	Rejeski, 2002[191] 26-78 weeks 69/68	-37.14±10.38 -34.41±8.99	-0.28 (-0.62; 0.06)	20.3	-0.28 (-0.62; 0.06)	20.3
Exercise aerobic	Disability	low	Rejeski, 2002[191] 26-78 weeks 68/73	-40.57±10.97 -38.20±9.65	-0.23 (-0.56; 0.10)	21.0	-0.23 (-0.56; 0.10)	21.0
Exercise aerobic	Disability	low	Ettinger, 1997[159] 26-78 weeks 144/149	1.72±0.48 1.90±0.49	-0.37 (-0.60; -0.14)	43.2	-0.37 (-0.60; -0.14)	43.2
		Studies: 4; Subjects: 676			-0.259 (-0.411, -0.107)	I-squared=0, p=0.486	-0.258 (-0.41, -0.106)	I-squared=0, p=0.49
Exercise aerobic	Psychological disability	medium	An, 2008[209] 8 weeks 11/10	-76.40±15.30 -67.00±8.20	-0.75 (-1.64; 0.13)	18.6	-0.72 (-1.61; 0.17)	18.5
Exercise aerobic	Psychological disability	high	Peloquin, 1999[315] 6 weeks 59/65	1.54±1.46 1.70±1.57	-0.11 (-0.46; 0.25)	22.8	-0.10 (-0.46; 0.25)	22.9
Exercise aerobic	Psychological disability	medium	Keefe, 2004[247] 6 weeks 16/16	1.88±0.87 1.80±1.04	0.08 (-0.61; 0.78)	20.3	0.08 (-0.61; 0.77)	20.3
Exercise aerobic	Psychological disability	medium	Keefe, 2004[247] 6 weeks 16/19	2.21±1.21 2.38±1.38	-0.13 (-0.80; 0.54)	20.6	-0.13 (-0.79; 0.54)	20.6
Exercise aerobic	Psychological disability	high	Aglamis, 2008[330] 12 weeks 17/17	-79.30±8.00 -46.40±13.80	-2.92 (-3.90; -1.94)	17.8	-2.85 (-3.83; -1.86)	17.6
		Studies: 4; Subjects: 246			-0.69 (-1.51, 0.13)	I-squared=0.87, p=0	-0.67 (-1.47, 0.13)	I-squared=0.863, p=0
Exercise aerobic	Pain	medium	Messier, 1997[259] 3 weeks 33/36	1.94±0.92 2.30±0.90	-0.40 (-0.87; 0.08)	34.9	-0.39 (-0.87; 0.09)	35.0
Exercise aerobic	Pain	medium	Messier, 1997[259] 3 weeks 34/36	2.29±0.87 2.30±0.90	-0.01 (-0.48; 0.46)	35.0	-0.01 (-0.48; 0.46)	35.1

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Exercise aerobic	Pain	high	Aglamis, 2008[330] 6 weeks 17/17	0.80±1.00 7.00±2.90	-2.86 (-3.83; -1.89)	30.1	-2.79 (-3.77; -1.82)	29.9
		Studies: 2; Subjects: 137			-1.00 (-2.25, 0.25)	I-squared=0.926, p=0	-0.98 (-2.19, 0.24)	I-squared=0.922, p=0
Exercise aerobic	Pain	medium	Yip, 2007[296] 7 weeks 88/94	37.33±21.06 44.41±23.23	-0.32 (-0.61; -0.03)	8.8	-0.32 (-0.61; -0.02)	9.0
Exercise aerobic	Pain	medium	Yip, 2008[299] 7 weeks 40/37	39.00±19.94 38.11±21.96	0.04 (-0.40; 0.49)	7.5	0.04 (-0.41; 0.49)	7.5
Exercise aerobic	Pain	high	Kovar, 1992[312] 8 weeks 47/45	3.77±1.73 4.77±2.60	-0.52 (-0.93; -0.10)	7.8	-0.51 (-0.93; -0.10)	7.8
Exercise aerobic	Pain	medium	An, 2008[209] 8 weeks 11/10	71.10±110.10 138.20±16.60	-0.60 (-1.48; 0.27)	4.3	-0.58 (-1.46; 0.30)	4.2
Exercise aerobic	Pain	high	Sullivan, 1998[318] 8 weeks 29/23	3.76±2.07 4.93±2.08	-0.56 (-1.6; -0.01)	6.6	-0.56 (-1.11; 0.00)	6.5
Exercise aerobic	Pain	medium	Messier, 1997[259] 9 weeks 33/36	2.26±0.98 2.46±0.96	-0.21 (-0.68; 0.27)	7.3	-0.20 (-0.68; 0.27)	7.3
Exercise aerobic	Pain	medium	Messier, 1997[259] 9 weeks 34/36	2.24±1.00 2.46±0.96	-0.23 (-0.70; 0.24)	7.3	-0.22 (-0.69; 0.25)	7.3
Exercise aerobic	Pain	high	Talbot, 2003[319] 6 weeks 17/17	6.41±9.77 10.60±4.64	0.30 (-0.38; 0.98)	5.6	0.29 (-0.38; 0.97)	5.6
Exercise aerobic	Pain	high	Bautch, 1997[305] 6 weeks 15/15	2.19±1.67 2.08±2.09	0.06 (-0.66; 0.77)	5.3	0.06 (-0.66; 0.77)	5.3
Exercise aerobic	Pain	high	Peloquin, 1999[315] 6 weeks 59/65	3.09±1.54 3.94±2.22	-0.44 (-0.80; -0.08)	8.3	-0.44 (-0.80; -0.08)	8.4

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Exercise aerobic	Pain	medium	Keefe, 2004[247] 6 weeks 16/16	3.19±1.85 4.03±2.08	-0.43 (-1.13; 0.27)	5.4	-0.42 (-1.6; 0.29)	5.4
Exercise aerobic	Pain	medium	Keefe, 2004[247] 6 weeks 16/19	4.26±1.45 4.00±1.56	0.17 (-0.49; 0.84)	5.7	0.17 (-0.50; 0.83)	5.6
Exercise aerobic	Pain	medium	Farr, 2010[10] 6 weeks 62/52	67.10±68.80 72.00±66.30	-0.07 (-0.44; 0.30)	8.2	-0.07 (-0.44; 0.30)	8.3
Exercise aerobic	Pain	medium	Hay, 2006[235] 6 weeks 93/89	7.36±4.30 8.99±3.70	-0.41 (-0.70; -0.11)	8.8	-0.40 (-0.70; -0.11)	9.0
Exercise aerobic	Pain	high	Aglamis, 2008[330] 12 weeks 17/17	0.80±1.00 7.00±2.90	-3.95 (-5.12; -2.77)	2.9	-3.85 (-5.04; -2.67)	2.8
		Studies: 13; Subjects: 930			-0.35 (-0.59, -0.11)	I-squared=0.722, p=0	-0.34(-0.57, -0.11)	I-squared=0.707, p=0
Exercise aerobic	Pain	medium	Yip, 2007[296] 23 weeks 88/94	38.58±22.01 42.50±23.67	-0.17 (-0.46; 0.12)	12.6	-0.17 (-0.46; 0.12)	12.7
Exercise aerobic	Pain	medium	Yip, 2008[299] 23 weeks 39/35	35.23±21.93 34.59±23.55	0.03 (-0.43; 0.48)	11.0	0.03 (-0.43; 0.48)	11.0
Exercise aerobic	Pain	high	Talbot, 2003[319] 24 weeks 17/17	6.95±11.41 10.90±9.69	0.19 (-0.48; 0.87)	8.8	0.19 (-0.48; 0.86)	8.8
Exercise aerobic	Pain	low	Messier, 2004[258] 24 weeks 76/82	5.47±4.10 5.10±3.89	0.09 (-0.22; 0.40)	12.4	0.09 (-0.22; 0.40)	12.5
Exercise aerobic	Pain	low	Messier, 2004[258] 24 weeks 80/78	6.22±4.02 6.19±4.06	0.01 (-0.30; 0.32)	12.4	0.01 (-0.30; 0.32)	12.5
Exercise aerobic	Pain	low	Messier, 1997[259] 18 weeks 33/36	2.15±0.98 2.28±0.90	-0.14 (-0.61; 0.33)	10.9	-0.14 (-0.61; 0.34)	10.9

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Exercise aerobic	Pain	low	Messier, 1997[259] 18 weeks 34/36	2215±0.93 2.28±0.90	-0.08 (-0.55; 0.39)	10.9	-0.08 (-0.54; 0.39)	10.9
Exercise aerobic	Pain	medium	Hay, 2006[235] 26 weeks 91/93	7.51±4.80 8.36±3.90	-0.19 (-0.48; 0.10)	12.6	-0.19 (-0.48; 0.10)	12.7
Exercise aerobic	Pain	high	Evick, 2002[310] 24 weeks 28/26	3.6±6.8 1.3±1.1	-2.65 (-3.39; -1.91)	8.2	-2.61 (-3.35; -1.87)	8.1
		Studies: 7; Subjects: 947			-0.26 (-0.59, 0.08)	I-squared=0.837, p=0	-0.25 (-0.57, 0.08)	I-squared=0.832, p=0
Exercise aerobic	Pain	low	Ettinger, 1997[159] 13, 39, 78 weeks 144/149	2.14±0.60 2.40±0.61	-0.43 (-0.66; -0.20)	24.8	-0.43 (-0.66; -0.20)	24.9
Exercise aerobic	Pain	medium	Farr, 2010[10] 36 weeks 62/52	56.20±75.30 62.90±81.00	-0.09 (-0.45; 0.28)	12.5	-0.09 (-0.45; 0.28)	12.4
Exercise aerobic	Pain	medium	Yip, 2008[299] 52 weeks 29/24	21.75±21.97 26.95±23.25	-0.23 (-0.77; 0.31)	6.4	-0.23 (-0.77; 0.32)	6.3
Exercise aerobic	Pain	medium	Hay, 2006[235] 52 weeks 90/87	7.41±4.40 8.49±4.50	-0.24 (-0.54; 0.05)	17.6	-0.24 (-0.54; 0.05)	17.7
Exercise aerobic	Pain	high	Sullivan, 1998[318] 52 weeks 29/23	4.59±2.40 5.50±2.07	-0.40 (-0.96; 0.15)	6.2	-0.40 (-0.95; 0.16)	6.1
Exercise aerobic	Pain	low	Messier, 2004[258] 72 weeks 76/82	5.07±4.10 5.51±4.07	-0.11 (-0.42; 0.20)	16.2	-0.11 (-0.42; 0.21)	16.2
Exercise aerobic	Pain	low	Messier, 2004[258] 72 weeks 80/78	6.24±4.20 6.02±3.97	0.05 (-0.26; 0.37)	16.3	0.05 (-0.26; 0.37)	16.3
		Studies: 6; Subjects: 1005			-0.21 (-0.35, -0.07)	I-squared=0.205, p=0.273	-0.21 (-0.35, -0.07)	I-squared=0.199, p=0.278

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Exercise aerobic	Function composite	low	Jan, 2009[170] 8 weeks 36/35	6.30±9.80 25.00±11.80	-1.17 (-1.68; -0.67)	25.9	-1.16 (-1.66; -0.65)	25.9
Exercise aerobic	Function composite	low	Jan, 2009[170] 8 weeks 35/35	10.10±10.30 25.00±11.80	-1.35 (-1.87; -0.83)	25.5	-1.33 (-1.85; -0.81)	25.5
Exercise aerobic	Function composite	medium	An, 2008[209] 8 weeks 11/10	347.50±382.80 511.80±381.60	-0.43 (-1.30; 0.44)	17.7	-0.41 (-1.28; 0.45)	17.5
Exercise aerobic	Function composite	medium	Hay, 2006[235] 6 weeks 95/90	24.27±15.20 30.18±6.80	-0.42 (-0.71; -0.13)	30.9	-0.42 (-0.71; -0.13)	31.0
		Studies: 3; Subjects: 312			-0.85 (-1.38; -0.33)	I-squared=0.772, p=0.004	-0.84 (-1.36; -0.32)	I-squared=0.766, p=0.005
Exercise aerobic	Function composite	medium	Hay, 2006[235] 26 weeks 94/94	25.49±16.30 28.15±13.20	-2.99 (-3.78; -2.21)	49.1	-2.95 (-3.74; -2.16)	49.1
Exercise aerobic	Function composite	high	Evick, 2002[310] 24 weeks 28/26	10.2±20.7 2.4±4.4	-0.18 (-0.47; 0.11)	50.9	-0.18 (-0.47; 0.11)	50.9
		Studies: 2; Subjects: 242			-1.56 (-4.32; 1.20)	I-squared=0.977, p=0	-1.54 (-4.26; 1.18)	I-squared=0.976, p=0
Exercise aerobic	Function composite	medium	Hay, 2006[235] 52 weeks 93/89	24.83±15.30 28.95±14.40	-0.28 (-0.57; 0.01)	24.7	-0.28 (-0.57; 0.02)	24.7
Exercise aerobic	Function composite	medium	Messier, 2004[258] 72 weeks 76/82	5.73±13.79 4.23±13.68	0.11 (-0.20; 0.42)	23.7	0.11 (-0.20; 0.42)	23.7
Exercise aerobic	Function composite	medium	Messier, 2004[258] 72 weeks 80/78	3.07±13.96 3.40±13.16	-0.02 (-0.34; 0.29)	23.8	-0.02 (-0.34; 0.29)	23.8
Exercise aerobic	Function composite	low	Ettinger, 1997[159] 13, 39, 78 weeks 144/149	9.10±2.40 10.00±1.22	-0.48 (-0.71; -0.24)	27.8	-0.47 (-0.71; -0.24)	27.8

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
		Studies: 3; Subjects: 791			-0.18 (-0.448, 0.087)	I-squared=0.716, p=0.014	-0.18 (-0.446, 0.087)	I-squared=0.714, p=0.015
Exercise aerobic	Gait function	medium	Messier, 1997[259] 3 weeks 33/36	-114.56±15.40 -110.87±15.06	-0.24 (-0.72; 0.23)	28.9	-0.24 (-0.71; 0.23)	28.9
Exercise aerobic	Gait function	medium	Messier, 1997[259] 3 weeks 34/36	-114.64±14.64 -110.87±15.06	-0.25 (-0.72; 0.22)	29.3	-0.25 (-0.72; 0.22)	29.3
Exercise aerobic	Gait function	medium	Deyle, 2000[222] 4 weeks 33/36	-484.00±61.05 -402.00±69.49	-0.65 (-1.14; -0.17)	27.6	-0.65 (-1.13; -0.16)	27.6
Exercise aerobic	Gait function	high	Aglamis, 2008[330] 6 weeks 17/17	-532.80±61.50 -488.30±208.70	-0.29 (-0.97; 0.39)	14.2	-0.28 (-0.96; 0.39)	14.2
		Studies: 3; Subjects: 206			-0.37 (-0.62, -0.11)	I-squared=0, p=0.599	-0.36 (-0.62, -0.11)	I-squared=0, p=0.607
Exercise aerobic	Gait function	high	Peterson, 1993[316] 8 weeks 47/44	-449.00±118.00 -338.00±65.00	-0.91 (-1.35; -0.48)	12.8	-0.91 (-1.34; -0.47)	12.9
Exercise aerobic	Gait function	low	Jan, 2009[170] 8 weeks 36/35	6.30±2.40 8.60±2.30	-0.98 (-1.47; -0.49)	10.5	-0.97 (-1.46; -0.47)	10.5
Exercise aerobic	Gait function	low	Jan, 2009[170] 8 weeks 35/35	7.40±2.60 8.60±2.30	-0.49 (-0.96; -0.01)	11.1	-0.48 (-0.96; -0.01)	11.1
Exercise aerobic	Gait function	medium	An, 2008[209] 8 weeks 11/10	-605.80±68.20 -539.00±64.30	-0.53 (-1.40; 0.34)	3.9	-0.51 (-1.38; 0.37)	3.8
Exercise aerobic	Gait function	medium	Deyle, 2000[222] 8 weeks 33/36	-487.40±116.65 -409.70±133.78	-0.62 (-1.10; -0.13)	10.8	-0.61 (-1.09; -0.13)	10.8
Exercise aerobic	Gait function	medium	Messier, 1997[259] 9 weeks 33/36	-62.22±15.68 -111.93±15.06	-0.67 (-1.16; -0.18)	10.7	-0.66 (-1.15; -0.18)	10.7

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Exercise aerobic	Gait function	medium	Messier, 1997[259] 9 weeks 34/36	-116.30±16.44 -111.93±15.06	-0.28 (-0.75; 0.19)	11.3	-0.27 (-0.75; 0.20)	11.3
Exercise aerobic	Gait function	high	Talbot, 2003[319] 6 weeks 17/17	30.95±8.42 29.91±5.17	0.15 (-0.52; 0.82)	6.2	0.15 (-0.53; 0.82)	6.2
Exercise aerobic	Gait function	high	Peloquin, 1999[315] 6 weeks 59/65	-467.77±74.27 -425.58±84.79	-0.53 (-0.89; -0.17)	16.7	-0.52 (-0.88; -0.17)	16.9
Exercise aerobic	Gait function	high	Aglamis, 2008[330] 12 weeks 17/17	-549.70±71.80 -468.30±175.80	-0.61 (-1.29; 0.08)	6.0	-0.59 (-1.28; 0.10)	5.9
		Studies: 8; Subjects: 582			-0.58 (-0.76, -0.4)	I-squared=0.202, p=0.257	-0.57 (-0.75, -0.4)	I-squared=0.184, p=0.273
Exercise aerobic	Gait function	medium	Messier, 1997[259] 18 weeks 33/36	-117.70±15.45 -107.41±14.70	-0.68 (-1.17; -0.20)	13.7	-0.68 (-1.16; -0.19)	13.7
Exercise aerobic	Gait function	medium	Messier, 1997[259] 18 weeks 34/36	-115.20±15.16 -107.41±14.70	-0.52 (-1.00; -0.05)	14.2	-0.52 (-0.99; -0.04)	14.2
Exercise aerobic	Gait function	high	Talbot, 2003[319] 24 weeks 17/17	27.85±5.16 30.00±6.01	-0.38 (-1.06; 0.29)	7.0	-0.37 (-1.05; 0.30)	7.0
Exercise aerobic	Gait function	low	Messier, 2004[258] 24 weeks 76/82	-482.37±110.28 -433.68±108.67	-0.45 (-0.76; -0.13)	32.4	-0.44 (-0.76; -0.13)	32.4
Exercise aerobic	Gait function	low	Messier, 2004[258] 24 weeks 80/78	-465.04±108.49 -428.56±113.75	-0.33 (-0.64; -0.01)	32.8	-0.33 (-0.64; -0.01)	32.8
		Studies: 3; Subjects: 453			-0.45 (-0.63; -0.27)	I-squared=0, p=0.812	-0.44 (-0.62; -0.26)	I-squared=0, p=0.821
Exercise aerobic	Gait function	medium	Focht, 2005[229] 72 weeks 76/82	-1524.00±316.00 -1433.00±260.00	-0.32 (-0.63; 0.00)	31.6	-0.31 (-0.63; 0.00)	31.6

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Exercise aerobic	Gait function	medium	Focht, 2005[229] 72 weeks 80/78	-1551.00±297.00 -1411.00±261.00	-0.50 (-0.82; -0.18)	31.5	-0.50 (-0.81; -0.18)	31.4
Exercise aerobic	Gait function	low	Ettinger, 1997[159] 13, 39, 78 weeks 144/149	-1507.00±192.00 -1349.00±195.30	-0.82 (-1.05; -0.58)	36.9	-0.81 (-1.05; -0.58)	36.9
		Studies: 2; Subjects: 609			-0.558 (-0.862, -0.254)	I-squared=0.7, p=0.036	-0.556 (-0.86, -0.252)	I-squared=0.7, p=0.036
Exercise aerobic	Health perception	medium	An, 2008[209] 8 weeks 11/10	-61.20+/-17.90 -49.10+/-25.90	-0.55 (-1.42; 0.33)	50.0	-0.53 (-1.40; 0.35)	50.1
Exercise aerobic	Health perception	high	Aglamis, 2008[40] 12 weeks 17/17	-77.50+/-10.20 -40.00+/-20.50	-2.32 (-3.20; -1.44)	50.0	-2.26 (-3.14; -1.38)	49.9
		Studies: 2; Subjects: 55			-1.43 (-3.16, 0.3)	I-squared=0.872, p=0.005	-1.39 (-3.09, 0.31)	I-squared=0.866, p=0.006
Exercise aerobic	Health perception	high	Sullivan, 1998[318] 52 weeks 29/23	3.71±2.8 3.26±1.87	0.18 (-0.36; 0.73)	13.4	0.18 (-0.37; 0.73)	13.4
Exercise aerobic	Health perception	medium	Yip, 2008[299] 52 weeks 29/24	-3.22±0.8 -3±0.93	-0.26 (-0.80; 0.29)	13.7	-0.25 (-0.79; 0.29)	13.7
Exercise aerobic	Health perception	low	Rejeski, 2002[191] 26-78 weeks 69/68	-62.86±19.19 -61.15±17.81	-0.09 (-0.43; 0.24)	35.9	-0.09 (-0.43; 0.24)	35.9
Exercise aerobic	Health perception	low	Rejeski, 2002[191] 26-78 weeks 68/73	-67.53±21.60 -67.5±18.11	0.00 (-0.33; 0.33)	37.0	0.00 (-0.33; 0.33)	37.0
		Studies: 3; Subjects: 383			-0.044 (-0.245, 0.157)	I-squared=0, p=0.707	-0.044 (-0.244, 0.157)	I-squared=0, p=0.716
Exercise aquatic	Disability	low	Rooks, 2006[192] 6 weeks 22/23	-34.00±21.50 -40.20±19.40	0.30 (-0.28; 0.89)	47.7	0.30 (-0.29; 0.89)	47.6

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Exercise aquatic	Disability	medium	Lund, 2008[255] 8 weeks 27/27	-64.60±6.00 -61.40±11.95	-0.27 (-0.80; 0.27)	52.3	-0.26 (-0.80; 0.27)	52.4
		Studies: 2; Subjects: 99			0.005 (-0.554, 0.563)	I-squared=0.493, p=0.16	0.004 (-0.546, 0.553)	I-squared=0.477, p=0.167
Exercise aquatic	Disability	medium	Patrick, 2001[185] 20 weeks 101/61	0.93±0.55 1.67±0.67	-0.31 (-0.58; -0.05)	80.1	-0.31 (-0.58; -0.05)	80.1
Exercise aquatic	Disability	medium	Lund, 2008[255] 20 weeks 27/27	-64.10±6.99 -63.70±6.99	-0.03 (-0.56; 0.50)	19.9	-0.03 (-0.56; 0.50)	19.9
		Studies: 2; Subjects: 216			-0.257 (-0.495, -0.019)	I-squared=0, p=0.353	-0.256 (-0.494, -0.018)	I-squared=0, p=0.354
Exercise aquatic	Pain	low	Rooks, 2006[192] 6 weeks 22/23	7.30±0.70 7.50±5.00	-0.06 (-0.64; 0.53)	46.0	-0.05 (-0.64; 0.53)	46.0
Exercise aquatic	Pain	medium	Lund, 2008[255] 8 weeks 27/27	20.30±16.63 27.20±16.63	-0.41 (-0.95; 0.6)	54.0	-0.41 (-0.95; 0.13)	54.0
		Studies: 2; Subjects: 99			-0.25 (-0.646, 0.147)	I-squared=0, p=0.376	-0.246 (-0.642, 0.151)	I-squared=0, p=0.382
Exercise aquatic	Pain	medium	Patrick, 2001[185] 20 weeks 98/117	1.38±0.74 1.46±0.62	-0.6 (-0.39; 0.15)	80.1	-0.6 (-0.39; 0.15)	80.1
Exercise aquatic	Pain	medium	Lund, 2008[255] 20 weeks 27/27	18.10±14.03 23.80±14.03	-0.41 (-0.95; 0.13)	19.9	-0.40 (-0.94; 0.14)	19.9
		Studies: 2; Subjects: 269			-0.176 (-0.416, 0.065)	I-squared=0, p=0.349	-0.174 (-0.415, 0.066)	I-squared=0, p=0.358
Exercise aquatic	QL	medium	Patrick, 2001[185] 20 weeks 101/61	-0.61±0.07 -0.60±0.08	-0.09 (-0.36; 0.17)	80.3	-0.09 (-0.36; 0.17)	80.3

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Exercise aquatic	QL	medium	Lund, 2008[255] 20 weeks 27/27	-42.80±6.47 -41.40±6.47	-0.11 (-0.65; 0.42)	19.7	-0.11 (-0.64; 0.42)	19.7
		Studies: 2; Subjects: 216			-0.097 (-0.334, 0.139)	I-squared=0, p=0.952	-0.097 (-0.334, 0.14)	I-squared=0, p=0.955
Exercise strength	Disability	medium	Schilke, 1996[271] 8 weeks 10/10	2.30±0.84 2.50±0.85	-0.24 (-1.6; 0.64)	15.5	-0.23 (-1.11; 0.65)	15.4
Exercise strength	Disability	high	Kuptniratsaikul, 2002[314] 8 weeks 172/193	6.66±1.86 6.09±1.68	-0.09 (-0.29; 0.6)	32.4	-0.09 (-0.29; 0.6)	32.5
Exercise strength	Disability	medium	Doi, 2008[224] 8 weeks 63/58	13.69±13.47 18.59±16.38	-0.33 (-0.69; 0.03)	28.7	-0.33 (-0.69; 0.03)	28.8
Exercise strength	Disability	medium	Lund, 2008[255] 8 weeks 25/27	-66.90±11.50 -61.40±11.95	-0.47 (-1.02; 0.08)	23.3	-0.46 (-1.01; 0.09)	23.3
		Studies: 4; Subjects: 558			-0.14 (-0.60; 0.33)	I-squared=0.794, p=0.002	| (-0.13; -0.60)	I-squared=0.79, p=0.003
Exercise strength	Disability	medium	Baker, 2001[211] 16 weeks 19/19	63.40±28.69 60.80±29.36	-0.09 (-0.73; 0.55)	21.3	-0.09 (-0.72; 0.55)	21.2
Exercise strength	Disability	medium	Lund, 2008[255] 20 weeks 25/27	66.10±13.00 63.70±6.99	-0.18 (-0.73; 0.36)	23.8	-0.18 (-0.73; 0.36)	23.7
Exercise strength	Disability	high	Kuptniratsaikul, 2002[314] 24 weeks 172/193	5.39±3.61 6.09±3.44	-0.20 (-0.40; 0.01)	32.5	-0.20 (-0.40; 0.01)	32.7
Exercise strength	Disability	high	Evcik, 2002[310] 24 weeks 27/26	29.50±4.80 36.60±6.10	-1.30 (-1.89; -0.70)	22.4	-1.28 (-1.87; -0.68)	22.3
		Studies: 4; Subjects: 508			-0.42(-0.89, 0.06)	I-squared=0.756, p=0.006	-0.41 (-0.88, 0.06)	I-squared=0.747, p=0.008

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Exercise strength	Disability	high	Kuptniratsaikul, 2002[314] 48 weeks 172/193	6.86±1.79 6.86±1.97	0.00 (-0.21; 0.21)	51.3	0.00 (-0.21; 0.21)	51.3
Exercise strength	Disability	low	Ettinger, 1997[159] 13, 39, 78 weeks 146/149	1.74±0.49 1.90±0.49	-0.33 (-0.56; -0.10)	48.7	-0.33 (-0.56; -0.10)	48.7
		Studies: 2; Subjects: 660			-0.159 (-0.479, 0.161)	I-squared=0.768, p=0.038	-0.159 (-0.478, 0.16)	I-squared=0.767, p=0.038
Exercise strength	Psychological disability	medium	Baker, 2001[211] 16 weeks 19/19	-88.60±13.34 -77.30±15.57	-0.78 (-1.44; -0.12)	50.4	-0.76 (-1.42; -0.10)	50.4
Exercise strength	Psychological disability	high	Evcik, 2002[310] 24 weeks 27/26	19.10±2.20 27.90±4.50	-2.50 (-3.22; -1.77)	49.6	-2.46 (-3.19; -1.74)	49.6
		Studies: 2; Subjects: 91			-1.633 (-3.319, 0.053)	I-squared=0.915, p=0.001	-1.606 (-3.272, 0.06)	I-squared=0.913, p=0.001
Exercise strength	Pain	low	Swank, 2011[135] 6 weeks 36/35	4.30+/-0.38 5.10+/-0.42	-2.00 (-2.57; -1.43)	5.7	-1.98 (-2.55; -1.40)	5.6
Exercise strength	Pain	medium	Schilke, 1996[271] 8 weeks 10/10	9.70±4.72 10.10±6.44	-0.07 (-0.95; 0.81)	4.0	-0.07 (-0.94; 0.81)	3.9
Exercise strength	Pain	high	Kuptniratsaikul, 2002[314] 8 weeks 172/193	4.14±2.28 5.15±2.26	-0.45 (-0.65; -0.24)	7.7	-0.44 (-0.65; -0.24)	7.8
Exercise strength	Pain	medium	Gur, 2002[233] 8 weeks 9/6	10.30±4.50 28.00±5.20	-3.70 (-5.46; -1.94)	1.6	-3.48 (-5.27; -1.70)	1.5
Exercise strength	Pain	medium	Gur, 2002[233] 8 weeks 8/6	16.60±7.30 28.00±5.20	-1.75 (-3.02; -0.48)	2.6	-1.64 (-2.92; -0.36)	2.5
Exercise strength	Pain	low	Jan, 2008[169] 8 weeks 34/30	4.80±3.50 7.10±3.40	-0.67 (-1.17; -0.16)	6.1	-0.66 (-1.16; -0.15)	6.1

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Exercise strength	Pain	low	Jan, 2008[169] 8 weeks 34/30	4.80±2.70 7.10±3.40	-0.75 (-1.26; -0.25)	6.1	-0.75 (-1.25; -0.24)	6.1
Exercise strength	Pain	high	Cheing, 2002[219] 8 weeks 13/16	61.10±57.90 43.70±30.30	0.39 (-0.35; 1.13)	4.7	0.38 (-0.36; 1.12)	4.6
Exercise strength	Pain	high	Cheing, 2002[219] 8 weeks 15/14	95.20±118.00 48.60±42.20	0.52 (-0.22; 1.26)	4.7	0.50 (-0.24; 1.25)	4.6
Exercise strength	Pain	low	Weng, 2009[204] 8 weeks 62/66	3.60±0.70 4.40±1.40	-0.72 (-1.07; -0.36)	7.0	-0.71 (-1.07; -0.35)	7.0
Exercise strength	Pain	low	Weng, 2009[204] 8 weeks 58/66	3.10±0.80 4.40±1.40	-1.12 (-1.50; -0.74)	6.8	-1.11 (-1.49; -0.73)	6.9
Exercise strength	Pain	medium	Doi, 2008[224] 8 weeks 63/58	22.55±20.68 29.59±23.94	-0.32 (-0.67; 0.04)	7.0	-0.31 (-0.67; 0.05)	7.0
Exercise strength	Pain	low	Lin, 2009[175] 8 weeks 36/36	4.20±3.00 7.30±3.40	-0.97 (-1.46; -0.48)	6.2	-0.96 (-1.45; -0.47)	6.2
Exercise strength	Pain	medium	Lund, 2008[255] 8 weeks 25/27	18.80±16.50 27.20±16.63	-0.51 (-1.06; 0.05)	5.8	-0.50 (-1.05; 0.05)	5.8
Exercise strength	Pain	medium	Borjesson, 1996[213] 6 weeks 34/34	3.00±1.50 3.30±1.50	-0.20 (-0.68; 0.28)	6.2	-0.20 (-0.67; 0.28)	6.3
Exercise strength	Pain	low	Lim, 2008[20] 13 weeks 26/26	28.50±16.90 36.20±16.20	-0.47 (-1.02; 0.09)	5.8	-0.46 (-1.01; 0.09)	5.8
Exercise strength	Pain	low	Lim, 2008[20] 13 weeks 27/28	22.80±16.90 33.60±15.40	-0.67 (-1.21; -0.12)	5.8	-0.66 (-1.20; -0.12)	5.8
Exercise strength	Pain	low	Bennell[151] 13 weeks 39/37	4.90±3.30 6.50±3.30	-0.48 (-0.94; -0.03)	6.4	-0.48 (-0.94; -0.02)	6.4

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
		Studies: 13; Subjects: 1317			-0.644 (-0.89, -0.398)	I-squared=0.768, p=0	-0.631 (-0.87, -0.391)	I-squared=0.755, p=0
Exercise strength	Pain	low	Baker, 2001[211] 16 weeks 22/22	68.00±98.12 189.00±117.26	-0.56 (-1.17; 0.04)	15.8	-0.55 (-1.16; 0.05)	15.7
Exercise strength	Pain	low	Topp, 2002[200] 16 weeks 35/35	10.71±3.14 10.77±3.19	-0.02 (-0.49; 0.45)	17.2	-0.02 (-0.49; 0.45)	17.2
Exercise strength	Pain	low	Topp, 2002[200] 16 weeks 32/35	10.38±3.31 10.77±3.05	-0.6 (-0.60; 0.36)	17.1	-0.6 (-0.60; 0.36)	17.1
Exercise strength	Pain	medium	Lund, 2008[255] 20 weeks 25/27	15.60±14.00 23.80±14.03	-0.59 (-1.14; -0.03)	16.3	-0.58 (-1.13; -0.02)	16.3
Exercise strength	Pain	high	Evcik, 2002[310] 24 weeks 27/26	3.50±1.40 6.80±1.10	-2.62 (-3.36; -1.88)	14.2	-2.58 (-3.32; -1.83)	14.1
Exercise strength	Pain	high	Kuptniratsaikul, 2002[314] 24 weeks 172/193	4.06±2.53 5.07±2.53	-0.40 (-0.61; -0.19)	19.4	-0.40 (-0.61; -0.19)	19.5
		Studies: 5; Subjects: 616			-0.658 (-1.177, -0.139)	I-squared=0.87, p=0	-0.647 (-1.158, -0.136)	I-squared=0.866, p=0
Exercise strength	Pain	low	Ettinger, 1997[159] 13, 39, 78 weeks 146/149	2.21±0.72 2.40±0.61	-0.28 (-0.51; -0.06)	26.3	-0.28 (-0.51; -0.05)	26.3
Exercise strength	Pain	high	Kuptniratsaikul, 2002[314] 48 weeks 172/193	4.25±2.70 4.57±2.69	-0.12 (-0.32; 0.09)	26.5	-0.12 (-0.32; 0.09)	26.5
Exercise strength	Pain	low	Weng, 2009[204] 52 weeks 56/52	3.60±1.60 5.00±1.40	-0.93 (-1.33; -0.53)	23.9	-0.92 (-1.32; -0.52)	23.9

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Exercise strength	Pain	low	Weng, 2009[204] 52 weeks 54/52	2.90±1.40 5.00±1.40	-1.50 (-1.93; -1.07)	23.3	-1.49 (-1.92; -1.06)	23.3
		Studies: 3; Subjects: 822			-0.68 (-1.21, -0.15)	I-squared=0.925, p=0	-0.67 (-1.2, -0.15)	I-squared=0.923, p=0
Exercise strength	QL	medium	Doi, 2008[224] 8 weeks 63/58	-71.19±16.33 -63.40±16.36	-0.48 (-0.84; -0.11)	62.2	-0.47 (-0.84; -0.11)	62.4
Exercise strength	QL	medium	Lund, 2008[255] 8 weeks 25/27	-43.80±6.50 -43.10±11.95	-0.06 (-0.60; 0.49)	37.8	-0.06 (-0.60; 0.49)	37.6
		Studies: 2; Subjects: 173			-0.32 (-0.72, 0.08)	I-squared=0.368, p=0.208	-0.32 (-0.71, 0.08)	I-squared=0.361, p=0.211
Exercise strength	QL	medium	Lund, 2008[255] 20 weeks 25/27	-43.10±6.50 -41.40±6.47	-0.14 (-0.68; 0.41)	50.5	-0.13 (-0.68; 0.41)	50.5
Exercise strength	QL	high	Evcik, 2002[310] 24 weeks 27/26	31.90±4.90 35.30±4.40	-0.73 (-1.29; -0.17)	49.5	-0.72 (-1.28; -0.16)	49.5
		Studies: 2; Subjects: 105			-0.43 (-1.011, 0.151)	I-squared=0.551, p=0.136	-0.423 (-0.996, 0.149)	I-squared=0.538, p=0.141
Exercise strength	Health	medium	Baker, 2001[211] 16 weeks 19/19	-77.50±24.24 -70.80±19.57	-0.30 (-0.94; 0.34)	50.5	-0.30 (-0.94; 0.34)	50.5
Exercise strength	Health	high	Evcik, 2002[310] 24 weeks 27/26	33.40±2.10 49.30±1.70	-8.31 (-10.00; -6.61)	49.5	-8.18 (-9.89; -6.48)	49.5
		Studies: 2; Subjects: 91			-4.26 (-12.11, 3.58)	I-squared=0.987, p=0	-4.20 (-11.93, 3.53)	I-squared=0.986, p=0
Exercise strength	Function composite	low	Jan, 2008[169] 8 weeks 34/30	14.70±8.50 22.50±10.90	-0.80 (-1.32; -0.29)	6.7	-0.79 (-1.31; -0.28)	6.7

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Exercise strength	Function composite	low	Jan, 2008[169] 8 weeks 34/30	14.80±9.20 22.50±10.90	-0.77 (-1.28; -0.26)	6.8	-0.76 (-1.27; -0.25)	6.8
Exercise strength	Function composite	low	Weng, 2009[204] 8 weeks 31/33	5.60±0.90 6.90±1.30	-1.16 (-1.69; -0.63)	6.4	-1.14 (-1.67; -0.61)	6.4
Exercise strength	Function composite	low	Weng, 2009[204] 8 weeks 29/33	5.00±1.00 6.90±1.30	-1.62 (-2.20; -1.05)	11.6	-1.60 (-2.18; -1.03)	11.6
Exercise strength	Function composite	low	Lin, 2009[175] 8 weeks 36/36	10.10±8.30 24.90±11.80	-1.45 (-1.97; -0.93)	6.6	-1.44 (-1.96; -0.91)	6.5
Exercise strength	Function composite	low	Lim, 2008[20] 13 weeks 26/26	29.30±15.60 36.50±18.20	-0.42 (-0.97; 0.13)	6.1	-0.42 (-0.97; 0.13)	6
Exercise strength	Function composite	low	Lim, 2008[20] 13 weeks 27/28	24.00±18.10 32.40±15.50	-0.50 (-1.04; 0.04)	6.3	-0.49 (-1.03; 0.05)	6.3
Exercise strength	Function composite	low	Bennell[151] 13 weeks 39/37	16.20±11.70 21.90±11.00	-0.50 (-0.96; -0.04)	13.7	-0.50 (-0.95; -0.04)	13.7
		Studies: 5; Subjects: 446			-0.895 (-1.203, -0.587)	I-squared=0.641, p=0.007	-0.884 (-1.189, -0.579)	I-squared=0.633, p=0.008
Exercise strength	Function composite	low	Baker, 2001[211] 16 weeks 22/22	462.00±385.28 664.00±437.93	-0.49 (-1.09; 0.11)	25.0	-0.48 (-1.08; 0.6)	25.0
Exercise strength	Function composite	low	Topp, 2002[200] 16 weeks 35/35	35.30±10.83 39.70±10.83	-0.41 (-0.88; 0.07)	25.9	-0.40 (-0.88; 0.07)	25.9
Exercise strength	Function composite	low	Topp, 2002 [200] 16 weeks 32/35	35.97±11.30 39.70±10.35	-0.34 (-0.83; 0.14)	25.8	-0.34 (-0.82; 0.14)	25.8
Exercise strength	Function composite	high	Evcik, 2002[310] 24 weeks 27/26	10.80±1.80 20.70±4.40	-2.97 (-3.75; -2.18)	23.4	-2.92 (-3.71; -2.13)	23.3

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
		Studies: 3; Subjects: 199			-1.01 (-1.99; -0.03)	I-squared=0.916, p=0	-0.99 (-1.96; -0.03)	I-squared=0.913, p=0
Exercise strength	Function composite	low	Weng, 2009[204] 52 weeks 28/26	6.30±1.70 7.30±1.70	-0.59 (-1.13; -0.04)	32.9	-0.58 (-1.13; -0.03)	32.9
Exercise strength	Function composite	low	Weng, 2009[204] 52 weeks 27/26	4.00±1.30 7.30±1.70	-2.19 (-2.87; -1.50)	31.0	-2.15 (-2.84; -1.47)	30.9
Exercise strength	Function composite	low	Ettinger, 1997[159] 13, 39, 78 weeks 146/149	9.30±2.42 10.00±1.22	-0.37 (-0.60; -0.14)	36.1	-0.37 (-0.60; -0.14)	36.2
		Studies: 2; Subjects: 376			-1.003 (-1.955, -0.051)	I-squared=0.918, p=0	-0.988 (-1.924, -0.053)	I-squared=0.915, p=0
Exercise strength	Gait function	high	Kuptniratsaikul, 2002[314] 8 weeks 172/193	-417.06±84.39 -354.73±80.94	-0.75 (-0.97; -0.54)	11.1	-0.75 (-0.97; -0.54)	11.2
Exercise strength	Gait function	medium	Gur, 2002[233] 8 weeks 9/6	9.17±1.65 10.56±1.48	-0.88 (-1.96; 0.21)	5.1	-0.82 (-1.91; 0.26)	5.0
Exercise strength	Gait function	medium	Gur, 2002[233] 8 weeks 8/6	8.94±0.81 10.56±1.48	-1.42 (-2.63; -0.22)	4.5	-1.33 (-2.54; -0.6)	4.5
Exercise strength	Gait function	low	Jan, 2008[169] 8 weeks 34/30	35.50±5.30 38.00±6.80	-0.41 (-0.91; 0.08)	9.2	-0.41 (-0.90; 0.09)	9.2
Exercise strength	Gait function	high	Cheing, 2004[308] 8 weeks 17/16	-0.90±0.19 -0.98±0.21	0.40 (-0.29; 1.09)	7.7	0.39 (-0.30; 1.08)	7.7
Exercise strength	Gait function	high	Cheing, 2004[308] 8 weeks 17/16	-0.92±0.13 -0.93±0.21	0.06 (-0.63; 0.74)	7.7	0.06 (-0.63; 0.74)	7.7
Exercise strength	Gait function	low	Lin, 2009[175] 8 weeks 36/36	35.50±5.30 38.00±3.80	-0.54 (-1.01; -0.07)	9.4	-0.54 (-1.01; -0.07)	9.4

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Exercise strength	Gait function	medium	Borjesson, 1996[213] 6 weeks 34/34	-1.09±0.17 -1.11±0.18	0.11 (-0.36; 0.59)	9.4	0.11 (-0.36; 0.59)	9.4
Exercise strength	Gait function	low	Lim, 2008[20] 13 weeks 26/26	11.80±4.20 6.70±3.80	-0.22 (-0.77; 0.32)	8.8	-0.22 (-0.77; 0.32)	8.8
Exercise strength	Gait function	low	Lim, 2008[20] 13 weeks 27/28	11.00±4.80 11.80±4.80	-0.17 (-0.70; 0.36)	8.9	-0.16 (-0.69; 0.37)	8.9
Exercise strength	Gait function	low	Bennell[151] 13 weeks 39/37	7.00±2.20 7.90±1.80	-0.45 (-0.90; 0.01)	9.5	-0.44 (-0.90; 0.01)	9.5
Exercise strength	Gait function	low	Swank, 2011[135] 6 weeks 36/35	4.30+/-0.38 5.10+/-0.42	-2.00 (-2.57; -1.43)	8.6	-1.98 (-2.55; -1.40)	8.6
		Studies: 9; Subjects: 912			-0.485 (-0.813, -0.157)	I-squared=0.789, p=0	-0.475 (-0.799, -0.151)	I-squared=0.783, p=0
Exercise strength	Gait function	low	Topp, 2002[200] 16 weeks 35/35	16.33±7.04 17.53±7.04	-0.17 (-0.64; 0.30)	28.5	-0.17 (-0.64; 0.30)	28.6
Exercise strength	Gait function	low	Topp, 2002[200] 16 weeks 32/35	15.15±7.34 17.53±6.73	-0.34 (-0.82; 0.14)	27.8	-0.33 (-0.82; 0.15)	27.9
Exercise strength	Gait function	high	Kuptniratsaikul, 2002[314] 24 weeks 172/193	-402.94±92.57 -341.49±73.83	-0.74 (-0.95; -0.53)	43.6	-0.74 (-0.95; -0.52)	43.6
		Studies: 2; Subjects: 467			-0.465 (-0.846, -0.085)	I-squared=0.666, p=0.05	-0.463 (-0.844, -0.081)	I-squared=0.667, p=0.05
Exercise strength	Gait function	high	Kuptniratsaikul, 2002[314] 48 weeks 172/193	-382.91±96.40 -341.51±72.95	-0.49 (-0.70; -0.28)	52.9	-0.49 (-0.70; -0.28)	52.9

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Exercise strength	Gait function	low	Ettinger, 1997[159] 13, 39, 78 weeks 146/149	-1406.00±205.41 -1349.00±195.30	-0.28 (-0.51; -0.06)	47.1	-0.28 (-0.51; -0.05)	47.1
		Studies: 2; Subjects: 660			-0.392 (-0.591, -0.193)	I-squared=0.397, p=0.198	-0.391 (-0.59, -0.192)	I-squared=0.395, p=0.199
PEMF	Pain	low	Ay, 2009[148] 3 weeks 30/25	2.58±1.37 2.24±1.14	0.27 (-0.27; 0.80)	42.5	0.26 (-0.27; 0.80)	42.3
PEMF	Pain	low	Thamsborg, 2005[196] 6 weeks 45/45	11.68±3.22 6.36±4.43	-0.18 (-0.59; 0.24)	57.5	-0.17 (-0.59; 0.24)	57.7
		Studies: 2; Subjects: 145			0.013 (-0.417, 0.442)	I-squared=0.396, p=0.198	0.011 (-0.413, 0.435)	I-squared=0.381, p=0.204
PEMF	Function composite	low	Ay, 2009[148] 3 weeks 30/25	7.76±4.68 7.10±4.10	0.15 (-0.38; 0.68)	44.2	0.15 (-0.38; 0.68)	44.0
PEMF	Function composite	low	Thamsborg, 2005[196] 6 weeks 45/45	37.63±11.61 42.44±15.97	-0.34 (-0.76; 0.07)	55.8	-0.34 (-0.76; 0.07)	56.0
		Studies: 2; Subjects: 145			-0.127 (-0.607, 0.354)	I-squared=0.513, p=0.152	-0.126 (-0.602, 0.349)	I-squared=0.503, p=0.156
Tai Chi	Disability	low	Lee, 2009[174] 8 weeks 29/15	20.80±18.70 28.50±19.60	-0.41 (-1.03; 0.22)	55.2	-0.40 (-1.03; 0.23)	55.2
Tai Chi	Disability	medium	Brismee, 2007[214] 6 weeks 20/13	55.18±24.20 57.10±16.95	-0.09 (-0.79; 0.61)	44.8	-0.09 (-0.79; 0.61)	44.8
		Studies: 2; Subjects: 77			-0.263 (-0.731, 0.204)	I-squared=0, p=0.509	-0.258 (-0.726, 0.209)	I-squared=0, p=0.516
Tai Chi	Disability	medium	Brismee, 2007[214] 18 weeks 18/13	60.28±23.80 57.73±19.58	0.6 (-0.60; 0.83)	43.1	0.11 (-0.60; 0.83)	42.9

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Tai Chi	Disability	medium	Song, 2010[276] 24 weeks 30/35	20.66±6.16 24.11±5.60	-0.59 (-1.09; -0.09)	56.9	-0.58 (-1.08; -0.08)	57.1
		Studies: 2; Subjects: 96			-0.285 (-0.968, 0.398)	I-squared=0.601, p=0.113	-0.284 (-0.956, 0.389)	I-squared=0.589, p=0.119
Tai Chi	Function composite	medium	Lee, 2009[174] 8 weeks 29/15	14.70±13.80 20.80±15.00	-0.43 (-1.06; 0.20)	55.8	-0.42 (-1.05; 0.21)	55.8
Tai Chi	Function composite	medium	Brismee, 2007[214] 6 weeks 20/13	31.82±14.00 37.77±11.22	-0.46 (-1.17; 0.25)	44.2	-0.45 (-1.15; 0.26)	44.2
		Studies: 2; Subjects: 77			-0.442 (-0.96, 0.029)	I-squared=0, p=0.953	-0.433 (-0.903, 0.038)	I-squared=0, p=0.958
Tai Chi	Function joint	low	Lee, 2009[174] 8 weeks 29/15	1.50±1.70 1.80±1.70	-0.18 (-0.80; 0.45)	55.6	-0.17 (-0.80; 0.45)	55.6
Tai Chi	Function joint	medium	Brismee, 2007[214] 6 weeks 20/13	4.70±1.66 4.67±1.40	0.02 (-0.68; 0.72)	44.4	0.02 (-0.68; 0.72)	44.4
		Studies: 2; Subjects: 77			-0.09 (-0.555, 0.376)	I-squared=0, p=0.682	-0.088 (-0.553, 0.378)	I-squared=0, p=0.688
Tai Chi	Function composite	low	Lee, 2009[174] 8 weeks 29/15	4.60±4.00 5.90±3.70	-0.33 (-0.96; 0.29)	56.1	-0.33 (-0.95; 0.30)	56.1
Tai Chi	Function composite	medium	Brismee, 2007[214] 6 weeks 20/13	2.41±2.05 3.37±1.78	-0.49 (-1.20; 0.22)	43.9	-0.48 (-1.19; 0.23)	43.9
		Studies: 2; Subjects: 77			-0.403 (-0.873, 0.067)	I-squared=0, p=0.742	-0.394 (-0.864, 0.075)	I-squared=0, p=0.751
Ultrasound	Disability	medium	Tascioglu, 2010[278] 2 weeks 27/27	43.44±16.48 44.33±6.78	-0.06 (-0.59; 0.47)	32.5	-0.06 (-0.59; 0.47)	32.4

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Ultrasound	Disability	medium	Tascioglu, 2010[278] 2 weeks 28/27	35.61±8.73 44.33±6.78	-0.80 (-1.35; -0.25)	31.4	-0.79 (-1.34; -0.24)	31.3
Ultrasound	Disability	low	Ozgonenel, 2009[183] 2.3 weeks 34/33	33.30±15.50 38.50±15.20	-0.34 (-0.82; 0.14)	36.2	-0.33 (-0.82; 0.15)	36.3
		Studies: 2; Subjects: 149			-0.393 (-0.799, 0.013)	I-squared=0.45, p=0.162	-0.387 (-0.787, 0.013)	I-squared=0.434, p=0.171
Ultrasound	Pain	medium	Tascioglu, 2010[278] 2 weeks 27/27	5.22±1.70 6.67±1.78	-0.83 (-1.39; -0.28)	32.1	-0.82 (-1.38; -0.26)	32.0
Ultrasound	Pain	medium	Tascioglu, 2010[278] 2 weeks 28/27	5.25±1.90 6.67±1.78	-0.77 (-1.32; -0.22)	32.4	-0.76 (-1.31; -0.21)	32.4
Ultrasound	Pain	low	Ozgonenel, 2009[183] 2.3 weeks 34/33	3.90±2.00 4.00±2.60	-0.04 (-0.52; 0.44)	35.5	-0.04 (-0.52; 0.44)	35.6
		Studies: 2; Subjects: 149			-0.533 (-1.051, -0.014)	I-squared=0.655, p=0.055	-0.524 (-1.036, -0.013)	I-squared=0.645, p=0.06
Ultrasound	Pain	medium	Huang, 2005[240] 8 weeks 64/60	3.00±1.80 4.10±0.60	-0.81 (-1.18; -0.44)	29.4	-0.80 (-1.17; -0.44)	29.5
Ultrasound	Pain	medium	Huang, 2005[239] 8 weeks 54/50	3.30±0.80 3.70±0.70	-0.53 (-0.92; -0.14)	27.8	-0.53 (-0.92; -0.14)	27.8
Ultrasound	Pain	medium	Huang, 2005[239] 8 weeks 60/50	2.60±1.70 3.70±0.70	-0.82 (-1.21; -0.43)	27.8	-0.81 (-1.20; -0.42)	27.8
Ultrasound	Pain	medium	Cetin, 2008[217] 8 weeks 18/17	3.55±1.41 3.49±1.28	0.04 (-0.62; 0.71)	15.0	0.04 (-0.62; 0.71)	14.9

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
		Studies: 3; Subjects: 323			-0.607 (-0.913, -0.3)	I-squared=0.502, p=0.111	-0.603 (-0.907, -0.299)	I-squared=0.495, p=0.115
Ultrasound	Function composite	medium	Huang, 2005[240] 8 weeks 32/30	4.40±1.10 6.10±0.90	-1.69 (-2.27; -1.10)	25.2	-1.66 (-2.25; -1.08)	25.2
Ultrasound	Function composite	medium	Huang, 2005[239] 8 weeks 27/25	4.80±1.00 5.20±0.90	-0.42 (-0.97; 0.13)	25.5	-0.41 (-0.96; 0.14)	25.5
Ultrasound	Function composite	medium	Huang, 2005[239] 8 weeks 30/25	4.10±0.60 5.20±0.90	-1.47 (-2.06; -0.87)	25.0	-1.44 (-2.04; -0.84)	25.0
Ultrasound	Function composite	medium	Cetin, 2008[217] 8 weeks 18/17	7.67±2.30 6.87±2.58	0.33 (-0.34; 1.00)	24.3	0.32 (-0.35; 0.99)	24.3
		Studies: 3; Subjects: 179			-0.818 (-1.702, 0.066)	I-squared=0.886, p=0	-0.808 (-1.68, 0.064)	I-squared=0.882, p=0
Ultrasound	Function composite	medium	Huang, 2005[239] 52 weeks 24/21	3.9±1.5 5.1±1.8	-0.73 (-1.33, -0.12)	33.6	-0.72 (-1.32, -0.11)	33.6
Ultrasound	Function composite	medium	Huang, 2005[239] 52 weeks 28/21	3.1±1.4 5.1±1.8	-1.26 (-1.88, -0.64)	32.6	-1.24 (-1.86, -0.62)	32.6
Ultrasound	Function composite	medium	Huang, 2005[240] 52 weeks 29/26	3.3±1.5 5.8±1.8	-1.52 (-2.12, -0.91)	33.8	-1.5 (-2.1, -0.89)	33.8
		Studies: 2; Subjects: 128			-1.169 (-1.628, -0.711)	I-squared = 0.411; p-value = 0.183)	-1.151 (-1.605, -0.698)	I-squared = 0.396; p-value = 0.191
Ultrasound	Gait function	medium	Tascioglu, 2010[278] 2 weeks 27/27	22.85±2.99 23.19±2.54	-0.6 (-0.66; 0.41)	33.4	-0.6 (-0.65; 0.41)	33.4
Ultrasound	Gait function	medium	Tascioglu, 2010[278] 2 weeks 28/27	20.00±1.94 23.19±2.54	-1.42 (-2.01; -0.82)	32.2	-1.39 (-1.99; -0.80)	32.2

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Ultrasound	Gait function	low	Ozgonenel, 2009[183] 2.3 weeks 34/33	35.50±6.70 36.40±7.60	-0.13 (-0.61; 0.35)	34.4	-0.6 (-0.60; 0.36)	34.4
		Studies: 2; Subjects: 149			-0.54 (-1.337, 0.256)	I-squared=0.85, p=0.001	-0.532 (-1.317, 0.253)	I-squared=0.846, p=0.002
Ultrasound	Gait function	medium	Huang, 2005[240] 8 weeks 32/30	-90.20±3.10 -82.90±5.30	-1.70 (-2.28; -1.11)	25.5	-1.67 (-2.26; -1.09)	25.5
Ultrasound	Gait function	medium	Huang, 2005[239] 8 weeks 27/25	-90.90±4.10 -81.90±5.50	-1.87 (-2.52; -1.21)	25.0	-1.84 (-2.49; -1.18)	25.0
Ultrasound	Gait function	medium	Huang, 2005[239] 8 weeks 30/25	-92.40±3.40 -81.90±5.50	-2.35 (-3.04; -1.65)	24.7	-2.31 (-3.01; -1.62)	24.7
Ultrasound	Gait function	medium	Cetin, 2008[217] 8 weeks 18/17	42.60±11.50 40.60±6.04	0.22 (-0.45; 0.88)	24.9	0.21 (-0.45; 0.88)	24.9
		Studies: 3; Subjects: 179			-1.423 (-2.492, -0.353)	I-squared=0.908, p=0	-1.403 (-2.457, -0.349)	I-squared=0.905, p=0
Ultrasound	Gait function	medium	Huang, 2005[239] 52 weeks 24/21	-90.4±7.8 -82.5±7.1	-1.06 (-1.68, -0.43)	33.9	-1.04 (-1.66, -0.41)	33.9
Ultrasound	Gait function	medium	Huang, 2005[239] 52 weeks 28/21	-99.7±8.7 -82.5±7.1	-2.13 (-2.85, -1.42)	30.6	-2.10 (-2.81, -1.39)	30.5
Ultrasound	Gait function	medium	Huang, 2005[240] 52 weeks 29/26	-94.3±6.8 -85.3±6.5	-1.35 (-1.94, -0.76)	35.5	-1.33 (-1.92, -0.74)	35.6
		Studies: 2; Subjects: 128			-1.491 (-2.086, -0.896)	I-squared = 0.614; p-value = 0.075	-1.466 (-2.052, -0.88)	I-squared = 0.601; p-value = 0.082
Exercise aerobic vs. strength	Disability	high	Evick, 2002[310] 24 weeks 28/26	8.6±4 29.5±4.8	-4.72 (-5.77, -3.68)	49. 4	-4.66(-5.70, -3.61)	49.4

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Exercise aerobic vs. strength	Disability	low	Ettinger, 1997[159] 26-78 weeks 144/149	1.72±0.48 1.74±0.49	-0.04 (-0.27, 0.19)	50.6	-0.04 (-0.27, 0.19)	50.6
		Studies: 2; Subjects: 345			-2.353 (-6.94, 2.234)	I-squared = 0.986; p-value = 0)	-2.319 (-6.84, 2.203)	I-squared = 0.986; p-value = 0)
Exercise aerobic vs. strength	Function composite	high	Evick, 2002[310] 24 weeks 28/26	10.8±1.8 10.2±2.4	-0.28 (-0.81, 0.25)	15.8	-0.28(-0.81, 0.25)	15.8
Exercise aerobic vs. strength	Function composite	low	Ettinger, 1997[159] 26-78 weeks 144/149	9.1±2.4 9.3±2.42	-0.08 (-0.31, 0.15)	84.2	-0.08 (-0.31, 0.15)	84.2
		Studies: 2; Subjects: 345			-0.115 (-0.326, 0.097)	I-squared = 0; p-value = 0.497)	-0.114 (-0.325, 0.097)	I-squared = 0; p-value = 0.505)
Exercise aquatic vs. aerobic	Disability	medium	Lund, 2008[255] 8 weeks 27/27	-62.7±11.95 -64.1±11.5	0.12 (-0.41; 0.65)	47.0	0.12 (-0.42; 0.65)	46.9
Exercise aquatic vs. aerobic	Disability	low	Silva, 2008[195] 9 weeks 32/32	18.8±13.37 23.64±17.95	-0.31 (-0.80; 0.19)	53.0	-0.30 (-0.80; 0.19)	53.1
		Studies: 2; Subjects: 118			-0.106 (-0.522, 0.31)	I-squared=0.24, p=0.251	-0.105 (-0.516, 0.305)	I-squared=0.22, p=0.258
Exercise aquatic vs. aerobic	Disability	medium	Lund, 2008[255] 20 weeks 27/25	-63±13.51 -63.9±13.5	0.07 (-0.48; 0.61)	47.6	0.07 (-0.48; 0.61)	47.5
Exercise aquatic vs. aerobic	Disability	low	Silva, 2008[195] 18 weeks 32/32	15.56±12.55 22.68±18.34	-0.45 (-0.95; 0.04)	52.4	-0.45 (-0.94; 0.05)	52.5
		Studies: 2; Subjects: 116			-0.206 (-0.714, 0.303)	I-squared=0.477, p=0.167	-0.204 (-0.706, 0.299)	I-squared=0.464, p=0.172
Laterally vs. neutrally wedged insole	Function composite	low	Maillefert, 2001[177] 12 weeks 82/74	52.4±20 47.2±18	0.27 (-0.04, 0.59)	25.6	0.27 (-0.04, 0.59)	25.7

Appendix Table F11. Efficacy and comparative effectiveness of the physical therapy interventions (pooled with random effects) (continued)

Physical therapy interventions	Outcome	Risk of bias	Author, yes Weeks to assess outcomes Randomized to active/control	Mean±STD in active Mean±STD in control	Cohen standard Mean difference (95% CI)	Weights from random effects model	Hodges standard Mean difference (95% CI)	Weights from random effects model
Laterally vs. neutrally wedged insole	Function composite	medium	Toda, 2008[289] 12 weeks 41/38	8.4±5.8 8.1±5	0.06(-0.39, 0.50)	18.5	0.05 (-0.39, 0.50)	18.5
Laterally vs. neutrally wedged insole	Function composite	medium	Toda, 2008[289] 12 weeks 41/38	6.8±5.1 8.1±5	-0.26 (-0.70, 0.19)	18.5	-0.25 (-0.70, 0.19)	18.4
Laterally vs. neutrally wedged insole	Function composite	medium	Toda, 2008[289] 12 weeks 43/38	9.1±5.3 8.1±5	0.19 (-0.24, 0.63)	18.7	0.19 (-0.25, 0.63)	18.7
Laterally vs. neutrally wedged insole	Function composite	medium	Toda, 2008[289] 12 weeks 44/38	6.2±5.3 8.1±5	-0.37 (-0.81, 0.07)	18.7	-0.36 (-0.80, 0.07)	18.7
		Studies: 2; Subjects: 363			0 (-0.253, 0.253)	I-squared = 0.474; p-value = 0.107	0.001 (-0.25, 0.252)	I-squared = 0.466; p-value = 0.112

Appendix Table F12. Strength of evidence of differences in outcomes with physical therapy interventions for adults with knee OA

Physical therapy interventions	Outcomes	Author, year	Studies, subjects	Risk of bias	Directness	Consistency	Statistical heterogeneity	Precision	Strength of the association	Evidence
Diathermy	Disability	Callaghan, 2005[216] Fukuda, 2011[328] Laufer, 2005[250] Akyol, 2010[147]	Studies: 4; Subjects: 250	medium	direct	consistent	no	precise	NA	Moderate
Diathermy	Disability	Laufer, 2005[250] Akyol, 2010[147]	Studies: 2; Subjects: 143	medium	direct	consistent	no	precise	NA	Moderate
Diathermy	Pain	Callaghan, 2005[216] Fukuda, 2011[328] Laufer, 2005[250] Akyol, 2010[147]	Studies: 4; Subjects: 250	medium	direct	consistent	no	precise	Moderate	Low
Diathermy	Pain	Cetin, 2008[217] Laufer, 2005[250] Akyol, 2010[147]	Studies: 3; Subjects: 178	medium	direct	consistent	no	precise	NA	Moderate
Diathermy	Function composite	Fukuda, 2011[328] Laufer, 2005[250] Akyol, 2010[147]	Studies: 3; Subjects: 223	medium	direct	consistent	no	precise	NA	Moderate
Diathermy	Function composite	Cetin, 2008[217] Laufer, 2005[250] Akyol, 2010[147]	Studies: 3; Subjects: 178	medium	direct	consistent	no	precise	NA	Moderate
Diathermy	Function joint	Laufer, 2005[250] Akyol, 2010[147]	Studies: 2; Subjects: 143	medium	direct	consistent	no	precise	NA	Moderate
Diathermy	Function joint	Laufer, 2005[250] Akyol, 2010[147]	Studies: 2; Subjects: 143	medium	direct	consistent	no	precise	NA	Moderate
Diathermy	Gait function	Callaghan, 2005[216] Laufer, 2005[250] Akyol, 2010[147]	Studies: 3; Subjects: 170	medium	direct	consistent	no	precise	NA	Moderate
Diathermy	Gait function	Cetin, 2008[217] Laufer, 2005[250] Akyol, 2010[147]	Studies: 3; Subjects: 178	medium	direct	consistent	no	precise	NA	Moderate
Estim vs. exercise	Pain	Cheing, 2002[219] Durmus, 2007[157]	Studies: 2; Subjects: 81	high	direct	inconsistent	yes	imprecise	NA	Low

Appendix Table F12. Strength of evidence of differences in outcomes with physical therapy interventions for adults with knee OA (continued)

Physical therapy interventions	Outcomes	Author, year	Studies, subjects	Risk of bias	Directness	Consistency	Statistical heterogeneity	Precision	Strength of the association	Evidence
Estim vs. exercise	Gait function	Cheing, 2004[308] Durmus, 2007[157]	Studies: 2; Subjects: 81	medium	direct	inconsistent	yes	imprecise	NA	Low
Ed	Pain	Shakoor, 2007[194] Keefe, 2004[247] Farr, 2010[10]	Studies: 3; Subjects: 348	medium	direct	inconsistent	yes	imprecise	NA	Low
Ed	Pain	Farr, 2010[10] Messier, 2004[258]	Studies: 2; Subjects: 435	medium	direct	consistent	no	precise	NA	Moderate
Exercise proprioception	Pain	Weng, 2009[204] Lin, 2009[175] Tsauo, 2008[320]	Studies: 3; Subjects: 254	high	direct	inconsistent	yes	imprecise	Moderate	Low
Exercise proprioception	Function composite	Weng, 2009[204] Lin, 2009[175] Tsauo, 2008[320]	Studies: 3; Subjects: 190	high	direct	inconsistent	yes	imprecise	NA	Low
Exercise proprioception	Gait function	Jan, 2008[243] Lin, 2009[175] Tsauo, 2008[320]	Studies: 3; Subjects: 169	high	direct	inconsistent	yes	imprecise	NA	Low
Orthotics	Gait function	Hinman, 2009[322] Maly, 2002[326] Kerrigan, 2002[172] Kuroyanagi, 2007[325]	Studies: 4; Subjects: 262	low	direct	consistent	no	precise	NA	High
Orthotics	Function composite	Toda, 2005[287] Bar-Ziv, 2010[304]	Studies: 2; Subjects: 138	high	direct	inconsistent	yes	imprecise	NA	Low
Elastic subtalar strapping	Function composite	Toda, 2001[283] Toda, 2004[286] Toda, 2008[289]	Studies: 3; Subjects: 235	medium	direct	consistent	no	precise	Small	Low
Massage	Function composite	Yip, 2008[298] Ko, 2009[173]	Studies: 2; Subjects: 94	medium	direct	consistent	no	precise	Moderate	Low
Massage	Function joint	Yip, 2008[298] Perlman, 2006[19]	Studies: 2; Subjects: 127	medium	direct	inconsistent	yes	imprecise	NA	Low
Estim	Disability	Garland, 2007[163] Selfe, 2008[193]	Studies: 2; Subjects: 95	low	direct	consistent	no	imprecise	NA	Moderate

Appendix Table F12. Strength of evidence of differences in outcomes with physical therapy interventions for adults with knee OA (continued)

Physical therapy interventions	Outcomes	Author, year	Studies, subjects	Risk of bias	Directness	Consistency	Statistical heterogeneity	Precision	Strength of the association	Evidence
Estim	Pain	Taylor, 1981[279] Law, 2004[251] Cheing, 2002[219] Cheing, 2002[331] Selfe, 2008[193] Itoh, 2008[242] Pietrosimone, 2009[329] Grimmer, 1992[232]	Studies: 8; Subjects: 355	high	direct	consistent	no	precise	Moderate	Low
Estim	Pain	Cheing, 2002[219] Cetin, 2008[217] Cheing, 2002[331] Itoh, 2008[242] Gaines, 2004[311] Garland, 2007[163] Selfe, 2008[193] Talbot, 2003[277]	Studies: 8; Subjects: 349	high	direct	inconsistent	yes	precise	NA	Low
Estim	Pain	Gaines, 2004[311] Talbot, 2003[277]	Studies: 2; Subjects: 72	high	direct	consistent	no	imprecise	Moderate	Low
Estim	Global assessment	Selfe, 2008[193] Garland, 2007[163]	Studies: 2; Subjects: 95	low	direct	consistent	no	imprecise	Small	Low
Estim	Function composite	Cetin, 2008[217] Garland, 2007[163] Selfe, 2008[193]	Studies: 3; Subjects: 129	medium	direct	consistent	no	precise	NA	Moderate
Estim	Function joint	Selfe, 2008[193] Grimmer, 1992[232]	Studies: 2; Subjects: 97	medium	direct	consistent	no	precise	NA	Moderate
Estim	Function joint	Garland, 2007[163] Selfe, 2008[193]	Studies: 2; Subjects: 95	low	direct	consistent	no	imprecise	NA	Moderate
Estim	Gait function	Yurtkuran, 1999[206] Cheing, 2004[308] Law, 2004[252] Pietrosimone, 2010[188]	Studies: 4; Subjects: 196	high	direct	inconsistent	yes	imprecise	NA	Low
Estim	Gait function	Cetin, 2008[217] Cheing, 2004[308] Talbot, 2003[277]	Studies: 3; Subjects: 149	high	direct	consistent	no	precise	NA	Low

Appendix Table F12. Strength of evidence of differences in outcomes with physical therapy interventions for adults with knee OA (continued)

Physical therapy interventions	Outcomes	Author, year	Studies, subjects	Risk of bias	Directness	Consistency	Statistical heterogeneity	Precision	Strength of the association	Evidence
Estim	Strength 120 degree extension	Cetin, 2008[217] Talbot, 2003[277]	Studies: 2; Subjects: 102	medium	direct	inconsistent	no	imprecise	NA	Low
Estim	Strength 60 degree extension	Cetin, 2008[217] Cheing, 2004[308]	Studies: 2; Subjects: 134	high	direct	consistent	no	precise	Moderate	Low
Exercise aerobic	Disability	Deyle, 2000[222] Aglamis, 2008[330]	Studies: 2; Subjects: 103	high	direct	inconsistent	yes	imprecise	Large	Low
Exercise aerobic	Disability	Yip, 2007[296] Yip, 2008[299] Kovar, 1992[312] Deyle, 2000[222] Sullivan, 1998[318] Bautch, 1997[305] Peloquin, 1999[315] Keefe, 2004[247] Aglamis, 2008[330]	Studies: 9; Subjects: 727	high	direct	inconsistent	yes	imprecise	Moderate	Low
Exercise aerobic	Disability	Yip, 2007[296] Yip, 2008[299] Evick, 2002[310]	Studies: 3; Subjects: 310	high	direct	inconsistent	yes	imprecise	NA	Low
exercsie aerobic	Disability	Yip, 2008[299] Sullivan, 1998[318] Rejeski, 2002[191] Ettinger, 1997[159]	Studies: 4; Subjects: 676	high	direct	consistent	no	precise	Small	Low
Exercise aerobic	Psychological disability	An, 2008[209] Peloquin, 1999[315] Keefe, 2004[247] Aglamis, 2008[330]	Studies: 4; Subjects: 246	high	direct	inconsistent	yes	imprecise	NA	Low
Exercise aerobic	Pain	Messier, 2004[258] Aglamis, 2008[330]	Studies: 2; Subjects: 137	high	direct	inconsistent	yes	imprecise	NA	Low

Appendix Table F12. Strength of evidence of differences in outcomes with physical therapy interventions for adults with knee OA (continued)

Physical therapy interventions	Outcomes	Author, year	Studies, subjects	Risk of bias	Directness	Consistency	Statistical heterogeneity	Precision	Strength of the association	Evidence
Exercise aerobic	Pain	Yip, 2007[296] Yip, 2008[299] Kovar, 1992[312] An, 2008[209] Sullivan, 1998[318] Messier, 1997[259] Talbot, 2003[319] Bautch, 1997[305] Peloquin, 1999[315] Keefe, 2004[247] Farr, 2010[10] Hay, 2006[235] Aglamis, 2008[330]	Studies: 13; Subjects: 930	high	direct	inconsistent	yes	precise	Small	Low
Exercise aerobic	Pain	Yip, 2007[296] Yip, 2008[299] Talbot, 2003[319] Messier, 2004[258] Messier, 1997[259] Hay, 2006[235] Evick, 2002[310]	Studies: 7; Subjects: 947	high	direct	inconsistent	yes	precise	NA	Low
Exercise aerobic	Pain	Ettinger, 1997[159] Farr, 2010[10] Yip, 2008[299] Hay, 2006[235] Sullivan, 1998[318] Messier, 2004[258]	Studies: 6; Subjects: 1005	high	direct	consistent	no	precise	Small	Low
Exercise aerobic	Function composite	Jan, 2009[170] An, 2008[209] Hay, 2006[235]	Studies: 3; Subjects: 312	medium	direct	inconsistent	yes	imprecise	Large	Low
Exercise aerobic	Function composite	Evick, 2002[310] Hay, 2006[235]	Studies: 2; Subjects: 242	high	direct	consistent	no	imprecise	NA	Low
Exercise aerobic	Function composite	Hay, 2006[235] Messier, 2004[258] Ettinger, 1997[159]	Studies: 3; Subjects: 791	medium	direct	inconsistent	yes	precise	NA	Low
Exercise aerobic	Gait function	Messier, 1997[259] Deyle, 2000[222] Aglamis, 2008[330]	Studies: 3; Subjects: 206	high	direct	consistent	no	precise	Small	Low

Appendix Table F12. Strength of evidence of differences in outcomes with physical therapy interventions for adults with knee OA (continued)

Physical therapy interventions	Outcomes	Author, year	Studies, subjects	Risk of bias	Directness	Consistency	Statistical heterogeneity	Precision	Strength of the association	Evidence
Exercise aerobic	Gait function	Peterson, 1993[316] Jan, 2009[170] An, 2008[209] Deyle, 2000[222] Messier, 1997[259] Talbot, 2003[319] Peloquin, 1999[315] Aglamis, 2008[330]	Studies: 8; Subjects: 582	high	direct	consistent	no	precise	Moderate	Low
Exercise aerobic	Gait function	Messier, 1997[259] Talbot, 2003[319] Messier, 2004[258]	Studies: 3; Subjects: 453	high	direct	consistent	no	precise	Small	Low
Exercise aerobic	Transfer	Talbot, 2003[319] Ettinger, 1997[159]	Studies: 2; Subjects: 327	high	direct	consistent	no	precise	Small	Low
Exercise aerobic	Health perception	An, 2008[209] Aglamis, 2008[330]	Studies: 2; Subjects: 55	high	direct	inconsistent	yes	imprecise	NA	Low
Exercise aerobic	Health perception	Sullivan, 1998[318] Yip, 2008[299] Rejeski, 2002[191]	Studies: 3; Subjects: 383	high	direct	consistent	no	precise	NA	Low
Exercise aquatic	Disability	Rooks, 2006[192] Lund, 2008[255]	Studies: 2; Subjects: 99	medium	direct	consistent	no	imprecise	NA	Low
Exercise aquatic	Disability	Patrick, 2001[185] Lund, 2008[255]	Studies: 2; Subjects: 216	medium	direct	consistent	no	precise	Small	Low
Exercise aquatic	Pain	Rooks, 2006[192] Lund, 2008[255]	Studies: 2; Subjects: 99	medium	direct	consistent	no	precise	NA	Moderate
Exercise aquatic	Pain	Patrick, 2001[185] Lund, 2008[255]	Studies: 2; Subjects: 269	medium	direct	consistent	no	precise	NA	Moderate
Exercise aquatic	QL	Patrick, 2001[185] Lund, 2008[255]	Studies: 2; Subjects: 216	medium	direct	consistent	no	precise	NA	Moderate
Exercise strength	Disability	Schilke, 1996[271] Kuptniratsaikul, 2002[314] Doi, 2008[224] Lund, 2008[255]	Studies: 4; Subjects: 558	high	direct	inconsistent	no	precise	NA	Low

Appendix Table F12. Strength of evidence of differences in outcomes with physical therapy interventions for adults with knee OA (continued)

Physical therapy interventions	Outcomes	Author, year	Studies, subjects	Risk of bias	Directness	Consistency	Statistical heterogeneity	Precision	Strength of the association	Evidence
Exercise strength	Disability	Baker, 2001[211] Lund, 2008[255] Kuptniratsaikul, 2002[314] Evcik, 2002[310]	Studies: 4; Subjects: 508	high	direct	inconsistent	yes	imprecise	NA	Low
Exercise strength	Disability	Kuptniratsaikul, 2002[314] Ettinger, 1997[159]	Studies: 2; Subjects: 660	high	direct	inconsistent	yes	precise	NA	Low
Exercise strength	Psychological disability	Baker, 2001[211] Evcik, 2002[310]	Studies: 2; Subjects: 91	high	direct	inconsistent	yes	imprecise	NA	Low
Exercise strength	Pain	Swank, 2011[135] Schilke, 1996[271] Kuptniratsaikul, 2002[314] Gur, 2002[233] Jan, 2008[169] Cheing, 2002[219] Weng, 2009[204] Cheing, 2002[331] Doi, 2008[224] Lin, 2009[175] Lund, 2008[255] Borjesson, 1996[213] Lim, 2008[20] Bennell, [151]	Studies: 13; Subjects: 1317	high	direct	inconsistent	yes	precise	Moderate	Low
Exercise strength	Pain	Baker, 2001[211] Topp, 2002[200] Lund, 2008[255] Evcik, 2002[310] Kuptniratsaikul, 2002[314]	Studies: 5; Subjects: 616	high	direct	inconsistent	yes	imprecise	Moderate	Low
Exercise strength	Pain	Ettinger, 1997[159] Kuptniratsaikul, 2002[314] Weng, 2009[204]	Studies: 3; Subjects: 822	high	direct	inconsistent	yes	imprecise	Moderate	Low
Exercise strength	QL	Doi, 2008[224] Lund, 2008[255]	Studies: 2; Subjects: 173	medium	direct	inconsistent	no	precise	NA	Low

Appendix Table F12. Strength of evidence of differences in outcomes with physical therapy interventions for adults with knee OA (continued)

Physical therapy interventions	Outcomes	Author, year	Studies, subjects	Risk of bias	Directness	Consistency	Statistical heterogeneity	Precision	Strength of the association	Evidence
Exercise strength	QL	Lund, 2008[255] Evcik, 2002[310]	Studies: 2; Subjects: 105	high	direct	inconsistent	yes	imprecise	NA	Low
Exercise strength	Health	Baker, 2001[211] Evcik, 2002[310]	Studies: 2; Subjects: 91	high	direct	inconsistent	yes	imprecise	NA	Low
Exercise strength	Function composite	Jan, 2008[169] Weng, 2009[204] Lin, 2009[175] Lim, 2008[20] Bennell, [151]	Studies: 5; Subjects: 446	low	direct	inconsistent	yes	precise	Large	Moderate
Exercise strength	Function composite	Baker, 2001[211] Topp, 2002[200] Evcik, 2002[310]	Studies: 3; Subjects: 199	high	direct	inconsistent	yes	imprecise	Large	Low
Exercise strength	Function composite	Weng, 2009[204] Ettinger, 1997[159]	Studies: 2; Subjects: 376	low	direct	inconsistent	yes	imprecise	Large	Low
Exercise strength	Gait function	Kuptniratsaikul, 2002[314] Gur, 2002[233] Jan, 2008[169] Cheing, 2004[308] Lin, 2009[175] Borjesson, 1996[213] Lim, 2008[20] Bennell, [151] Swank, 2011[135]	Studies: 9; Subjects: 912	high	direct	inconsistent	yes	precise	Small	Low
Exercise strength	Gait function	Topp, 2002[200] Kuptniratsaikul, 2002[314]	Studies: 2; Subjects: 467	high	direct	consistent	no	precise	Small	Low
Exercise strength	Gait function	Kuptniratsaikul, 2002[314] Ettinger, 1997[159]	Studies: 2; Subjects: 660	high	direct	consistent	no	precise	Small	Low
PEMF	Pain	Ay, 2009[148] Thamsborg, 2005[196]	Studies: 2; Subjects: 145	low	direct	consistent	no	imprecise	NA	Moderate
PEMF	Function composite	Ay, 2009[148] Thamsborg, 2005[196]	Studies: 2; Subjects: 145	low	direct	consistent	no	imprecise	NA	Moderate

Appendix Table F12. Strength of evidence of differences in outcomes with physical therapy interventions for adults with knee OA (continued)

Physical therapy interventions	Outcomes	Author, year	Studies, subjects	Risk of bias	Directness	Consistency	Statistical heterogeneity	Precision	Strength of the association	Evidence
Tai Chi	Disability	Lee, 2009[174] Brismee, 2007[214]	Studies: 2; Subjects: 77	medium	direct	consistent	no	imprecise	NA	Low
Tai Chi	Disability	Brismee, 2007[214] Song, 2010[276]	Studies: 2; Subjects: 96	medium	direct	inconsistent	no	imprecise	NA	Low
Tai Chi	Function composite	Lee, 2009[174] Brismee, 2007[214]	Studies: 2; Subjects: 77	medium	direct	consistent	no	imprecise	NA	Low
Tai Chi	Function joint	Lee, 2009[174] Brismee, 2007[214]	Studies: 2; Subjects: 77	medium	direct	consistent	no	imprecise	NA	Low
Tai Chi	Function composite	Lee, 2009[174] Brismee, 2007[214]	Studies: 2; Subjects: 77	medium	direct	consistent	no	imprecise	NA	Low
Ultrasound	Disability	Tascioglu, 2010[278] Ozgonenel, 2009[183]	Studies: 2; Subjects: 149	medium	direct	consistent	no	imprecise	NA	Low
Ultrasound	Pain	Tascioglu, 2010[278] Ozgonenel, 2009[183]	Studies: 2; Subjects: 149	medium	direct	consistent	no	imprecise	Moderate	Low
Ultrasound	Pain	Huang, 2005[240] Huang, 2005[239] Cetin, 2008[217]	Studies: 3; Subjects: 323	medium	direct	consistent	no	precise	Moderate	Low
Ultrasound	Function composite	Huang, 2005[240] Huang, 2005[239] Cetin, 2008[217]	Studies: 3; Subjects: 179	medium	direct	inconsistent	yes	imprecise	NA	Low
Ultrasound	Function composite	Huang, 2005[239] Huang, 2005[240]	Studies: 2; Subjects: 128	medium	direct	consistent	no	imprecise	Large	Low
Ultrasound	Gait function	Tascioglu, 2010[278] Ozgonenel, 2009[183]	Studies: 2; Subjects: 149	medium	direct	inconsistent	yes	imprecise	NA	Low
Ultrasound	Gait function	Huang, 2005[240] Huang, 2005[239] Cetin, 2008[217]	Studies: 3; Subjects: 179	medium	direct	inconsistent	yes	imprecise	Large	Low

Appendix Table F12. Strength of evidence of differences in outcomes with physical therapy interventions for adults with knee OA (continued)

Physical therapy interventions	Outcomes	Author, year	Studies, subjects	Risk of bias	Directness	Consistency	Statistical heterogeneity	Precision	Strength of the association	Evidence
Ultrasound	Gait function	Huang, 2005[239] Huang, 2005[240]	Studies: 2; Subjects: 128	medium	direct	consistent	no	imprecise	Large	Low
Exercise aerobic vs. strength	Disability	Evick, 2002[310] Ettinger, 1997[159]	Studies: 2; Subjects: 345	high	direct	inconsistent	yes	imprecise	NA	Low
Exercise aerobic vs. strength	Function composite	Evick, 2002[310] Ettinger, 1997[159]	Studies: 2; Subjects: 345	high	direct	consistent	no	precise	NA	Low
Exercise aquatic vs. aerobic	Disability	Lund, 2008[255] Silva, 2008[195]	Studies: 2; Subjects: 118	medium	direct	consistent	no	imprecise	NA	Low
Exercise aquatic vs. aerobic	Disability	Lund, 2008[255] Silva, 2008[195]	Studies: 2; Subjects: 116	medium	direct	consistent	no	precise	NA	Moderate
Laterally vs. neutrally wedged insole	Function composite	Maillefert, 2001[177] Toda, 2008[289]	Studies: 2; Subjects: 363	medium	direct	consistent	no	precise	NA	Moderate

Appendix Table F13. Effectiveness of physical therapy interventions, the results from individual RCTs

Author, year	Comparison	Outcome/week of follow-up	Subjects in active/control arms	Type of risk/measures	Risk of bias	Mean (95% CI)
	Education					
Rejeski, 2002[191]	Dietary education (with exercise in both arms)	Disability / Repeated measure (average of 6 and 18- month data) weeks	68/69	mean	low	-3.43 (-7.01;0.15)
Rejeski, 2002[191]	Dietary education (with exercise in both arms)	Psychological disability / Repeated measure (average of 6 and 18-month data) weeks	68/69	mean	low	-0.46 (-3.60;2.68)
Rejeski, 2002[191]	Dietary education (with exercise in both arms)	Health / Repeated measure (average of 6 and 18-month data) weeks	68/69	mean	low	-4.67 (-11.52;2.18)
Rejeski, 2002[191]	Dietary education (with exercise in both arms)	Satisfaction / Repeated measure (average of 6 and 18- month data) weeks	68/69	mean	low	-0.52 (-1.10;0.06)
Messier, 2004[258]	Dietary education (with exercise in both arms)	Function composite / 72 weeks	76/80	mean	medium	2.66 (-1.70;7.02)
Messier, 2004[258]	Dietary education (with exercise in both arms)	Gait function / 24 weeks	76/80	mean	low	-17.33 (-51.68;17.02)
Rejeski, 2002[191]	Dietary education (without exercise in both arms)	Disability / Repeated measure (average of 6 and 18- month data) weeks	73/68	mean	low	-3.79 (-6.87;-0.71)
Rejeski, 2002[191]	Dietary education (without exercise in both arms)	Psychological disability / Repeated measure (average of 6 and 18-month data) weeks	73/68	mean	low	-0.38 (-3.40; 2.64)
Rejeski, 2002[191]	Dietary education (without exercise in both arms)	Health / Repeated measure (average of 6 and 18-month data) weeks	73/68	mean	low	-6.35 (-12.28; -0.42)
Rejeski, 2002[191]	Dietary education (without exercise in both arms)	Satisfaction / Repeated measure (average of 6 and 18- month data) weeks	73/68	mean	low	-0.77 (-1.28;-0.26)
Messier, 2004[258]	Dietary education (without exercise in both arms)	Function composite / 72 weeks	82/78	mean	medium	0.83 (-3.33;4.99)
Messier, 2004[258]	Dietary education (without exercise in both arms)	Gait function / 24 weeks	82/78	mean	low	-5.12 (-39.54;29.30)
Keefe, 2004[247]	Spouse-assisted pain coping skill training (with exercise in both arms)	Disability / 12 weeks	16/19	mean	medium	-18.25 (-43.61; 7.11)

Appendix Table F13. Effectiveness of physical therapy interventions, the results from individual RCTs (continued)

Author, year	Comparison	Outcome/week of follow-up	Subjects in active/control arms	Type of risk/measures	Risk of bias	Mean (95% CI)
Keefe, 2004[247]	Spouse-assisted pain coping skill training (with exercise in both arms)	Psychological disability / 12 weeks	16/19	mean	medium	0.33 (-0.38;1.04)
Keefe, 2004[247]	Spouse-assisted pain coping skill training (without exercise in both arms)	Disability / 12 weeks	16/16	mean	medium	-9.96 (-42.26; 22.34)
Keefe, 2004[247]	Spouse-assisted pain coping skill training (without exercise in both arms)	Psychological disability / 12 weeks	16/16	mean	medium	0.58 (-0.27;1.43)
	Aerobic exercise					
Hay, 2006[235]	Aerobic exercise	Global assessment / 52 weeks	94/89	OR	medium	1.29 (0.63;2.66)
Thorstensson, 2005[281]	Aerobic exercise	QL / 26 weeks	28/28	change	medium	-7.40 (-16.71; 1.91)
Hay, 2006[235]	Aerobic exercise	Satisfaction / 52 weeks	90/78	OR	medium	1.69 (1.04;2.73)
An, 2008[209]	Aerobic exercise	Joint function / 8 weeks	11/10	mean	medium	-31.50 (-71.55;8.55)
Ettinger, 1997[159]	Aerobic exercise	Transfer / 13, 39, 78 weeks	144/149	mean	medium	-1.90 (-2.73;-1.07)
	Education plus aerobic exercise					
Keefe, 2004[247]	Spouse-assisted pain coping skill training plus aerobic exercise	Disability / 12 weeks	19/16	mean	medium	-14.54 (-44.69;15.61)
Keefe, 2004[247]	Spouse-assisted pain coping skill training plus aerobic exercise	Psychological disability / 12 weeks	19/16	mean	medium	0.41 (-0.34;1.16)
Messier, 2004[258]	Dietary education plus aerobic exercise	Function composite / 72 weeks	82/78	mean	medium	2.33 (-1.93;6.59)
Messier, 2004[258]	Dietary education plus aerobic exercise	Gait function / 72 weeks	82/78	mean	medium	-47.87 (-83.75;-11.99)
	Aquatic exercise					
Patrick, 2001[185]	Aquatic exercise	Psychological disability / 20 weeks	101/113	mean	medium	-1.14 (-2.58;0.31)
Rooks, 2006[192]	Aquatic exercise	Function composite / 6 weeks	22/23	mean	low	2.70 (-4.17;9.57)
	Strengthening exercise					
Borjesson, 1996[213]	Strengthening exercise	Global assessment / 12 weeks	34/34	OR	medium	20.00 (2.84;140.76)
Thomas, 2002[197]	Strengthening exercise	Function joint / 104 weeks	470/316	mean	low	-0.29 (-0.5, -0.1)
Ettinger, 1997[159]	Strengthening exercise	Function transfers / Repeated measure at 3, 9, 18 month weeks	146/149	mean	low	-1.60 (-2.43;-0.77)

Appendix Table F13. Effectiveness of physical therapy interventions, the results from individual RCTs (continued)

Author, year	Comparison	Outcome/week of follow-up	Subjects in active/control arms	Type of risk/measures	Risk of bias	Mean (95% CI)
Topp, 2002[200]	Strengthening exercise (dynamic resistance training)	Transfers / 16 weeks	35/35	mean	low	-2.45 (-5.32;0.42)
Topp, 2002[200]	Strengthening exercise (isometric resistance training)	Transfers / 16 weeks	32/35	mean	low	-1.79 (-4.68;1.10)
	Balance exercise					
Chaipinyo, 2009[332]	Balance exercise	Pain / 4 weeks	24/24	mean	medium	-5.00 (-13.00;3.00)
Chaipinyo, 2009[332]	Balance exercise	QL / 4 weeks	24/24	mean	medium	-8.00 (-18.77;2.77)
Chaipinyo, 2009[332]	Balance exercise	Disability / 4 weeks	24/24	mean	medium	-6.00 (-12.56;0.56)
Chaipinyo, 2009[332]	Balance exercise	Gait function / 4 weeks	24/24	mean	medium	-5.00 (-6.79;-3.21)
	Vibration exercise					
Trans, 2009[333]	Conventional stable whole body vibration (WBV) exercise	Pain / 8 weeks	18/17	mean	low	-1.4 (-14.6;11.9)
Trans, 2009[333]	Conventional stable whole body vibration (WBV) exercise	Composite function QL / 8 weeks	18/17	mean	low	-1.2 (-13.3;10.9)
Trans, 2009[333]	Conventional stable whole body vibration (WBV) exercise	Joint function / 8 weeks	18/17	mean	low	1.3 (-13.2;15.9)
Trans, 2009[333]	A balance board with a build-in vibration device	Pain / 8 weeks	17/17	mean	low	-6.8 (-20.1;6.6)
Trans, 2009[333]	A balance board with a build-in vibration device	Composite function QL / 8 weeks	17/17	mean	low	-2.7 (-14.8;9.4)
Trans, 2009[333]	A balance board with a build-in vibration device	Joint function / 8 weeks	17/17	mean	low	5.6 (-8.7;19.8)
	Tai Chi					
Lee, 2009[174]	Tai Chi	Psychological disability / 8 weeks	29/15	mean	low	-14.70 (-25.82;-3.58)
Lee, 2009[174]	Tai Chi	QL / 8 weeks	29/15	mean	low	-9.30 (-20.97;-2.37)
Lee, 2009[174]	Tai Chi	Gait function / 8 weeks	29/15	mean	low	-0.80 (-1.78;0.18)
	Stretching exercise					
Aoki, 2009[210]	Stretching exercise	Gait function / 11 weeks	19/17	mean	medium	-4.80 (-11.35;1.75)
	Exercises were specifically educated					
Ravaud, 2009[12]	Exercise ED	Disability / 52 weeks	129/147	change	medium	-2.26 (-4.14;-0.38)
Victor, 2005[292]	Exercise ED	Psychological disability / 52 weeks	72/53	mean	medium	2.00 (-3.68;7.68)
Ravaud, 2009[12]	Exercise ED	Global assessment / 52 weeks	146/181	change	medium	-0.89 (-1.45;-0.33)
Victor, 2005[292]	Exercise ED	Health / 52 weeks	72/53	mean	medium	2.00 (-5.09;9.09)
Ravaud, 2009[12]	Exercise ED	Satisfaction / 12 weeks	108/115	OR	medium	1.41 (0.96;2.07)
Ravaud, 2009[12]	Exercise ED	Function composite / 52 weeks	144/176	change	medium	-3.23 (-5.98;-0.48)

Appendix Table F13. Effectiveness of physical therapy interventions, the results from individual RCTs (continued)

Author, year	Comparison	Outcome/week of follow-up	Subjects in active/control arms	Type of risk/measures	Risk of bias	Mean (95% CI)
Victor, 2005[292]	Exercise ED	Function joint / 52 weeks	72/53	mean	medium	-0.50 (-1.17;0.17)
	Exercise program, not-specified					
O'Reilly, 1999[266]	Exercise NS	Disability / 24 weeks	108/72	change	medium	-4.31 (-9.03;0.41)
O'Reilly, 1999[266]	Exercise NS	Psychological disability / 24 weeks	108/72	change	medium	-2.70 (-7.21;1.81)
O'Reilly, 1999[266]	Exercise NS	Health / 24 weeks	108/72	change	medium	-2.63 (-6.10;0.84)
O'Reilly, 1999[266]	Exercise NS	Function composite / 24 weeks	108/72	change	medium	-3.54 (-6.04;-1.04)
	Joint mobilization					
Pollard, 2008 (19066697)	Joint mobilization	Pain / 2 weeks	26/17	mean	medium	-1.20 (-2.42;0.02)
Pollard, 2008 (19066697)	Joint mobilization	Disability / 2 weeks	26/17	mean	medium	-2.7 (-4.8;-0.06)
Pollard, 2008 (19066697)	Joint mobilization	Global assessment / 2 weeks	26/17	mean	medium	-3.1 (-5.0;-1.3)
Moss, 2007[261]	Joint mobilization	Gait function / immediate after	38/38	percent change	medium	-0.40 (-4.84;4.04)
Deyle, 2005[223]	Joint mobilization + exercise	Disability / 8 weeks	60/60	mean	medium	-216.80 (-405.98;-27.62)
Deyle, 2005[223]	Joint mobilization + exercise	Gait function / 8 weeks	60/60	mean	medium	-42.20 (-87.47;3.07)
	Massage					
Yip, 2008[298]	Aromatic essential oil massage	Psychological disability / 7 weeks	21/18	change	medium	-2.37 (-12.90;8.16)
Yip, 2008[298]	Oil massage	Psychological disability / 7 weeks	20/18	change	medium	-2.65 (-14.16;8.86)
Yip, 2008[298]	Aromatic essential oil massage	Health / 7 weeks	21/18	change	medium	-8.24 (-18.08;1.60)
Yip, 2008[298]	Oil massage	Health / 7 weeks	20/18	change	medium	-11.53 (-21.74;-1.32)
Perlman, 2006[19]	Massage	Gait function / 8 weeks	34/34	change	medium	-2.01 (-3.87;-0.15)
Moss, 2007[261]	Manual contact	Gait function / NA weeks	38/38	percent change	medium	-3.98 (-8.15;0.19)
	Brace					
Horlick, 1993[323]	10 degree valgus brace	Pain / 6 weeks	20/20	mean	NA	-0.68 (-1.97;0.61)
Horlick, 1993[323]	Neutral brace	Pain / 6 weeks	20/20	mean	NA	-0.16 (-1.46;1.14)
Pajareya, 2003[184]	Elastic sleeve	Disability / 8 weeks	59/60	mean	low	-1.83 (-5.82;2.16)
Pajareya, 2003[184]	Elastic sleeve	Satisfaction / 8 weeks	59/60	OR	low	1.10 (0.86;1.40)
Kirkley, 1999[86]	Neoprene-sleeve	Disability / 26 weeks	36/33	change	medium	-97.6 vs. 27.9, p=0.066

Appendix Table F13. Effectiveness of physical therapy interventions, the results from individual RCTs (continued)

Author, year	Comparison	Outcome/week of follow-up	Subjects in active/control arms	Type of risk/measures	Risk of bias	Mean (95% CI)
Kirkley, 1999[86]	Neoprene-sleeve	Function composite / 26 weeks	36/33	change	medium	-68.9 vs. 6.5, p=0.112
Kirkley, 1999[86]	Neoprene-sleeve	Function joint / 26 weeks	36/33	change	medium	-15.5 vs. 8.1, p=0.91
Kirkley, 1999[86]	Neoprene-sleeve	Global assessment / 26 weeks	36/33	OR	medium	3.6 (1.20, 10.84)
Richards, 2005[269]	Non-valgus bracing	Function composite / 24 weeks	12/12	mean	medium	-4.20 (-37.24;28.84)
Brouwer, 2006[215]	OAsys brace	Function composite / 52 weeks	60/57	mean	medium	-3 (-6.41;0.41)
Brouwer, 2006[215]	OAsys brace	Gait function / 52 weeks	60/57	mean	medium	-1.34 (- 2.63;-0.05)
Brouwer, 2006[215]	OAsys brace	QL / 52 weeks	60/57	mean	medium	-0.01 (-0.1;0.08)
Kirkley, 1999[86]	Unloader-Brace	Disability / 26 weeks	41/33	change	medium	-229.1 vs. 27.9, p<0.001
Kirkley, 1999[86]	Unloader-Brace	Function composite / 26 weeks	41/33	change	medium	-157.2 vs. 6.5, p=0.001
Kirkley, 1999[86]	Unloader-Brace	Function joint / 26 weeks	41/33	change	medium	-28.6 vs. 8.1, p<0.001
Kirkley, 1999[86]	Unloader-Brace	Global assessment / 26 weeks	41/33	OR	medium	7.03 (2.38;20.8)
	Orthotics					
Nigg, 2006[265]	Orthotics	Pain / 12 weeks	53/66	change	medium	4.20 (-28.41;36.81)
Nigg, 2006[265]	Orthotics	Disability / 12 weeks	53/66	change	medium	26.50 (-129.41;182.41)
Nigg, 2006[265]	Orthotics	Global assessment / 12 weeks	53/66	change	medium	0.11 (-2.40;2.62)
Nigg, 2006[265]	Orthotics	Function joint / 12 weeks	53/66	change	medium	14.30 (-2.21;30.81)
	Laterally vs. neutrally wedged insole					
Bennell, 2011[334]	Laterally vs. neutrally wedged insole	Pain / 52 weeks	103/97	mean	low	0 (-0.61;0.611)
Bennell, 2011[334]	Laterally vs. neutrally wedged insole	Disability / 52 weeks	103/97	mean	low	0 (-23.74;23.74)
Bennell, 2011[334]	Laterally vs. neutrally wedged insole	Global assessment / 52 weeks	103/97	OR	low	0.77 (0.42;1.43)
Bennell, 2011[334]	Laterally vs. neutrally wedged insole	QL / 52 weeks	103/97	mean	low	0 (-0.06;0.06)
Bennell, 2011[334]	Laterally vs. neutrally wedged insole	Function joint / 52 weeks	103/97	mean	low	0 (-0.56;0.56)
Kerrigan, 2002[172]	Laterally (5 degree) vs. neutrally wedged insole	Gait function / immediate after	15/15	mean	low	-0.02 (-0.16;0.12)

Appendix Table F13. Effectiveness of physical therapy interventions, the results from individual RCTs (continued)

Author, year	Comparison	Outcome/week of follow-up	Subjects in active/control arms	Type of risk/measures	Risk of bias	Mean (95% CI)
Kerrigan, 2002[172]	Laterally (10 degree) vs. neutrally wedged insole	Gait function / immediate after	15/15	mean	low	-0.01 (-0.60;0.58)
	Taping					
Hinman, 2003[164]	Taping	Disability / 6 weeks	29/29	mean	low	-3.20 (-15.72;9.32)
Hinman, 2003[164]	Taping	Function composite / 6 weeks	29/29	mean	low	-5.50 (-12.29;1.29)
Hinman, 2003[237]	Taping	Gait function / na weeks	18/18	mean	medium	0.2 (-0.28, 0.68)
	Taping+ massage+ exercise					
Bennell, 2005[150]	Taping+ massage+ exercise	Disability / 24 weeks	73/67	mean	low	-0.20 (-0.98;0.58)
Bennell, 2005[150]	Taping+massage+exercise	QL / 24 weeks	73/67	mean	low	-0.04 (-0.10;0.02)
Bennell, 2005[150]	Taping+massage+exercise	Function composite / 24 weeks	73/67	mean	low	-1.70 (-5.45;2.05)
	E-stim					
Selfe, 2008[193]	Estim	Health / 12 weeks	18/19	mean	low	9.19 (-2.82;21.20)
Kang, 2007[245]	Estim	Satisfaction / 0.3 weeks	35/28	OR	medium	4.40 (1.06;18.25)
Talbot, 2003[277]	Estim	Function transfers / 24 weeks	18/16	mean	medium	-0.30 (-1.92;1.32)
Cetin, 2008[217]	Estim	Function composite / 8 weeks	17/15	mean	medium	-0.50 (-1.93;0.93)
	E-stim vs. exercise					
Durmus, 2007[157]	Estim vs. exercise	Function composite / 4 weeks	25/25	mean	low	-1.68 (-2.54;-0.83)
Durmus, 2007[157]	Estim vs. exercise	Function joint / 4 weeks	25/25	mean	low	-0.28 (-0.40;-0.16)
	PEMF					
Trock, 1994[290]	PEMF	Disability / 10 weeks	42/44	change	medium	-1.76 (-4.35;0.83)
Nicolakis, 2002[264]	PEMF	global assessment / 6 weeks	15/17	OR	medium	2.83 (1.12;7.17)
Thamsborg, 2005[196]	PEMF	Function joint / 12 weeks	45/45	mean	low	-0.34 (-1.20;0.52)
Nicolakis, 2002[264]	PEMF	Gait function / 6 weeks	15/17	change	medium	-1.80 (-8.04;4.44)
	Magnet therapy					
Wolsko, 2004[293]	Magnet therapy	Disability / 1day	13/13	change	medium	-50.00 (-106.84;6.84)
Wolsko, 2004[293]	Magnet therapy	Global assessment / 6 weeks	13/13	OR	medium	1.33 (0.37;4.82)
Wolsko, 2004[293]	Magnet therapy	Function composite / 6 weeks	13/13	change	medium	-6.00 (-255.47;243.47)
Wolsko, 2004[293]	Magnet therapy	Function joint / 6 weeks	13/13	change	medium	-12.00 (-42.99;18.99)
Wolsko, 2004[293]	Magnet therapy	Gait function / 6 weeks	13/13	change	medium	-1.40 (-3.21;0.41)
	Diathermy					

Appendix Table F13. Effectiveness of physical therapy interventions, the results from individual RCTs (continued)

Author, year	Comparison	Outcome/week of follow-up	Subjects in active/control arms	Type of risk/measures	Risk of bias	Mean (95% CI)
Akyol, 2010[147]	Diathermy	Psychological disability / 12 weeks	20/20	mean	low	-0.85 (-3.58;1.88)
Rattanachaiyanont, 2008[8]	Diathermy	Global assessment / 3 weeks	53/60	OR	medium	1.35 (0.93;1.95)
Akyol, 2010[147]	Diathermy	Health / 12 weeks	20/20	mean	low	-0.50 (-10.36;9.36)
Rattanachaiyanont, 2008[8]	Diathermy	Satisfaction / 3 weeks	53/60	OR	medium	1.08 (0.91;1.29)
Cantarini, 2007[153]	Diathermy	Satisfaction / 12 weeks	24/20	OR	low	1.19 (0.56;2.55)
Cetin, 2008[217]	Diathermy + hot pack	Function composite / 8 weeks	18/15	mean	medium	-0.91 (-2.53;0.71)
Cetin, 2008[217]	Diathermy + hot pack	Gait function / 8 weeks	18/15	mean	medium	-0.05 (-5.45;5.35)
	Mud pack					
Odabasi, 2008[182]	Mud pack	Disability / 27 weeks	30/30	mean	low	-35.00 (-40.69;-29.31)
Odabasi, 2008[182]	Mud pack	Global assessment / 27 weeks	30/30	mean	low	-3.30 (-4.23;-2.37)
	Heat					
Denegar, 2010[221]	Heat (superficial heat therapy)	Disability / 1 weeks	34/34	change	medium	-6.20 (-13.25;0.85)
Denegar, 2010[221]	Heat (hot pad treatment)	Disability / 1 weeks	34/34	change	medium	-4.80 (-11.87;2.27)
Cetin, 2008[217]	Heat	Function composite / 8 weeks	17/15	mean	medium	-0.85 (-2.46;0.76)
Cetin, 2008[217]	Heat	Gait function / 8 weeks	17/15	mean	medium	0.65 (-4.69;5.99)
Denegar, 2010[221]	Heat (superficial heat therapy)	QL / 1 weeks	34/34	change	medium	-5.70 (-12.60;1.20)
Denegar, 2010[221]	Heat (hot pad treatment)	QL / 1 weeks	34/34	change	medium	-5.70 (-12.03;0.63)
	Cryotherapy					
Pietrosimone, 2009 (19461552)	Cryotherapy	Pain / immediate after	10/12	Mean	medium	-0.37 (-1.22;0.47)
Denegar, 2010[221]	Cryotherapy	Disability / 1 weeks	34/34	change	medium	-5.60 (-12.55;1.35)
Denegar, 2010[221]	Cryotherapy	QL / 1 weeks	34/34	change	medium	-4.70 (-11.26;1.86)
Denegar, 2010[221]	Cryotherapy	Function composite / 1 weeks	34/34	change	medium	-6.20 (-13.71;1.31)
Pietrosimone, 2009 (19461552)	Cryotherapy	Strength / immediate after	10/12	Mean	medium	-0.4 (-1.24;0.45)
	Cryotherapy + heat					
Denegar, 2010[221]	Cryotherapy + heat	Disability / 1 weeks	34/34	change	medium	-7.00 (-14.12;0.12)
Denegar, 2010[221]	Cryotherapy + heat	Function composite / 1 weeks	34/34	change	medium	-6.70 (-14.19;0.79)
Denegar, 2010[221]	Cryotherapy + heat	QL / 1 weeks	34/34	change	medium	-5.80 (-12.23;0.63)
	US					
Ozgonenel, 2009[183]	US	Function joint / 2.3 weeks	34/33	mean	low	-0.10 (-0.92;0.72)

Appendix Table F13. Effectiveness of physical therapy interventions, the results from individual RCTs (continued)

Author, year	Comparison	Outcome/week of follow-up	Subjects in active/control arms	Type of risk/measures	Risk of bias	Mean (95% CI)
Cetin, 2008[217]	US + Heat	Function composite / 8 weeks	18/15	mean	medium	-0.05 (-1.54;1.44)
	Therapeutic touch					
Gordon, 1998[230]	Therapeutic touch	Disability / 6 weeks	8/11	mean	medium	0.12 (-0.08;0.32)
Gordon, 1998[230]	Therapeutic touch	Disability / 6 weeks	8/11	mean	medium	1.18 (1.00;1.36)
Gordon, 1998[230]	Therapeutic touch	Disability / 6 weeks	8/11	mean	medium	0.54 (0.37;0.71)
Gordon, 1998[230]	Therapeutic touch	Disability / 6 weeks	8/11	mean	medium	0.79 (0.66;0.92)
Gordon, 1998[230]	Therapeutic touch	Disability / 6 weeks	8/8	mean	medium	1.10 (0.87;1.33)
Gordon, 1998[230]	Therapeutic touch	Disability / 6 weeks	8/8	mean	medium	0.79 (0.58;1.00)
Gordon, 1998[230]	Therapeutic touch	Disability / 6 weeks	8/8	mean	medium	0.69 (0.50;0.88)
Gordon, 1998[230]	Therapeutic touch	Disability / 6 weeks	8/8	mean	medium	1.03 (0.88;1.18)
Gordon, 1998[230]	Therapeutic touch	Psychological disability / 6 weeks	8/11	mean	medium	0.50 (0.31;0.69)
Gordon, 1998[230]	Therapeutic touch	Psychological disability / 6 weeks	8/11	mean	medium	-1.35 (-1.57;-1.13)
Gordon, 1998[230]	Therapeutic touch	Psychological disability / 6 weeks	8/8	mean	medium	-0.33 (-0.55;-0.11)
Gordon, 1998[230]	Therapeutic touch	Psychological disability / 6 weeks	8/8	mean	medium	-1.00 (-1.24;-0.76)
Gordon, 1998[230]	Therapeutic touch	QL / 6 weeks	8/11	mean	medium	0.60 (0.43;0.77)
Gordon, 1998[230]	Therapeutic touch	QL / 6 weeks	8/11	mean	medium	0.50 (0.24;0.76)
Gordon, 1998[230]	Therapeutic touch	QL / 6 weeks	8/11	mean	medium	0.29 (0.09;0.49)
Gordon, 1998[230]	Therapeutic touch	QL / 6 weeks	8/11	mean	medium	1.31 (1.12;1.50)
Gordon, 1998[230]	Therapeutic touch	QL / 6 weeks	8/11	mean	medium	-0.86 (-1.05;-0.67)
Gordon, 1998[230]	Therapeutic touch	QL / 6 weeks	8/11	mean	medium	-1.17 (-1.45;-0.89)
Gordon, 1998[230]	Therapeutic touch	QL / 6 weeks	8/8	mean	medium	0.87 (0.69;1.05)
Gordon, 1998[230]	Therapeutic touch	QL / 6 weeks	8/8	mean	medium	0.67 (0.38;0.96)
Gordon, 1998[230]	Therapeutic touch	QL / 6 weeks	8/8	mean	medium	-0.10 (-0.33;0.13)
Gordon, 1998[230]	Therapeutic touch	QL / 6 weeks	8/8	mean	medium	1.54 (1.32;1.76)
Gordon, 1998[230]	Therapeutic touch	QL / 6 weeks	8/8	mean	medium	-1.15 (-1.35;-0.95)
Gordon, 1998[230]	Therapeutic touch	QL / 6 weeks	8/8	mean	medium	-1.05 (-1.37;-0.73)

Negative values for mean differences or changes, and OR larger than 1 reflect improvements in knee symptoms compared with control groups

.

Appendix Table F14. Exploring heterogeneity in disability around 3 months after aerobic exercise compared to placebo (results from meta-regression)

Variable	Coefficient	Standard Error	T Statistic	P>t	Lower 95% CI	Upper 95% CI
Treatment duration (week)	-0.06645	0.178161	-0.37	0.709	-0.41564	0.282739
Constant	-0.07373	1.711991	-0.04	0.966	-3.42917	3.281711
Median age	0.174377	0.106672	1.63	0.102	-0.0347	0.383451
Constant	-11.799	6.830161	-1.73	0.084	-25.1859	1.587841
Female proportion	**-0.06297**	0.032069	-1.96	0.05	**-0.12582**	**-0.00011**
Constant	3.89664	2.434042	1.6	0.109	-0.87399	8.667274
BMI	**-1.5407**	0.21619	-7.13	0	**-1.96442**	**-1.11697**
Constant	45.95415	6.518285	7.05	0	33.17854	58.72975
No of treatment/week	-0.17201	0.191001	-0.9	0.368	-0.54636	0.202345
Constant	0.148072	0.453392	0.33	0.744	-0.74056	1.036704
Duration per section	0.00296	0.006654	0.44	0.656	-0.01008	0.016001
Constant	-0.40302	0.61081	-0.66	0.509	-1.60018	0.794149

Bold: Significant result in meta-regression analysis.

Appendix Table F15. Exploring heterogeneity in pain relief around 3 months after aerobic exercise compared to placebo (results from meta-regression)

Variable	Coefficient	Standard Error	T Statistic	P>t	Lower 95% CI	Upper 95% CI
Treatment duration (week)	0.011274	0.024653	0.46	0.647	-0.03704	0.059593
Constant	-0.53782	0.365596	-1.47	0.141	-1.25438	0.178733
Median age	0.055212	0.037849	1.46	0.145	-0.01897	0.129394
Constant	-3.98315	2.468543	-1.61	0.107	-8.8214	0.855107
Female proportion	**-0.02954**	0.013933	-2.12	0.034	**-0.05685**	**-0.00223**
Constant	1.848799	1.078879	1.71	0.087	-0.26577	3.963364
BMI	-0.21815	0.213828	-1.02	0.308	-0.63725	0.200942
Constant	5.898017	6.461847	0.91	0.361	-6.76697	18.563
No of treatment/week	-0.11195	0.062333	-1.8	0.072	-0.23412	0.010218
Constant	-0.05549	0.145017	-0.38	0.702	-0.33971	0.228742
Duration per section	0.002428	0.001756	1.38	0.167	-0.00101	0.00587
Constant	-0.46667	0.148606	-3.14	0.002	-0.75793	-0.17541

Bold: Significant result in meta-regression analysis.

Appendix Table F16. Exploring heterogeneity by quality of study in disability around 3 months after aerobic exercise compared to placebo (results from subgroup analyses)

	Standardized ES	Lower 95% CI	Upper 95% CI	P-value	I-squared
Overall	-0.516	-1.001	-0.031	0	89.00%
With PT	-0.841	-1.334	-0.348	NA	NA
Without PT	-0.053	-0.369	0.262	0.004	68.20%
PT involvement unknown	-3.288	-7.986	1.41	0	96.90%
Medium risk of bias	-0.132	-0.489	0.225	0.03	62.70%
High risk of bias	-1.122	-2.148	-0.096	0	93.80%

NA: Not applicable (only one study in the subgroup

Appendix Table F17. Exploring heterogeneity by quality of study in pain relief around 3 months after aerobic exercise compared to placebo (results from subgroup analyses)

	Standardized ES	Lower 95% CI	Upper 95% CI	P-value	I-squared
Overall	-0.348	-0.587	-0.108	0	72.20%
With PT	**-0.426**	**-0.704**	**-0.147**	**0.676**	**0.00%**
PT involvement unknown	-0.339	-0.618	-0.06	0	75.70%
Medium risk of bias	**-0.238**	**-0.379**	**-0.097**	**0.618**	**0.00%**
High risk of bias	-0.702	-1.362	-0.042	0	87.70%

Bold: indicated significant results without significant heterogeneity in the specific subgroup

Appendix Table F18. Exploring heterogeneity by quality of study in gait function in 1 month after aerobic exercise compared to placebo (results from subgroup analyses)

	Standardized ES	Lower 95% CI	Upper 95% CI	P-value	I-squared
Overall	-0.853	-1.378	-0.328	0.004	77.20%
With PT	**-1.256**	**-1.619**	**-0.894**	**0.64**	**0.00%**
Without PT	**-0.421**	**-0.697**	**-0.144**	**0.983**	**0.00%**

Studies with PT are also low risk of bias and studies without PT are medium risk of bias; Bold: indicated significant results without significant heterogeneity in the specific subgroup

Appendix Table F19. Exploring heterogeneity in pain relief around 3 months after strengthening exercise compared to placebo (results from meta-regression)

Variable	Coefficient	Standard Error	T Statistic	P>t	Lower 95% CI	Upper 95% CI
Treatment duration (week)	-0.05548	0.066208	-0.84	0.402	-0.18524	0.074288
Constant	-0.21251	0.551941	-0.39	0.7	-1.29429	0.869276
Median age	**0.143068**	0.049222	2.91	0.004	**0.046595**	**0.23954**
Constant	-9.85325	3.169977	-3.11	0.002	-16.0663	-3.64021
Female proportion	0.008674	0.011299	0.77	0.443	-0.01347	0.030819
Constant	-1.18294	0.821905	-1.44	0.15	-2.79384	0.427967
BMI	-0.11043	0.071551	-1.54	0.123	-0.25067	0.029807
Constant	2.556153	2.008221	1.27	0.203	-1.37989	6.492194
No of treatment/week	0.205045	0.126463	1.62	0.105	-0.04282	0.452907
Constant	-1.27257	0.44257	-2.88	0.004	-2.13999	-0.40515
Duration per section	0.002397	0.018096	0.13	0.895	-0.03307	0.037864
Constant	-0.50899	0.862075	-0.59	0.555	-2.19863	1.180645

Bold: Significant result in meta-regression analysis.

Appendix Table F20. Exploring heterogeneity in gait function around 3 months after strengthening exercise compared to placebo (results from meta-regression)

Variable	Coefficient	Standard Error	T Statistic	P>t	Lower 95% CI	Upper 95% CI
Treatment duration (week)	-0.051261	0.0425739	-1.2	0.229	-0.1347043	0.0321823
Constant	0.0805217	0.3735995	0.22	0.829	-0.6517199	0.8127632
Median age	0.0450526	0.0487708	0.92	0.356	-0.0505365	0.1406417
Constant	-3.212855	3.112125	-1.03	0.302	-9.312508	2.886798
Female proportion	-0.0016044	0.0096298	-0.17	0.868	-0.0204784	0.0172696
Constant	-0.1712739	0.6619079	-0.26	0.796	-1.468589	1.126042
BMI	0.065103	0.0528986	1.23	0.218	-0.0385762	0.1687823
Constant	-2.047391	1.470376	-1.39	0.164	-4.929275	0.8344922
No. of treatment/week	**0.1840213**	0.0782147	2.35	0.019	**0.0307234**	**0.3373192**
Constant	-1.03317	0.2973407	-3.47	0.001	-1.615947	-0.4503925
Duration per section	0.0086338	0.0147578	0.59	0.559	-0.0202909	0.0375586
Constant	-0.7633701	0.7257035	-1.05	0.293	-2.185723	0.6589825

Bold: Significant result in meta-regression analysis.

Appendix Table F21. Exploring heterogeneity by quality of study in pain relief in 3 months after strengthening exercise compared to placebo (results from subgroup analyses)

	Standardized ES	Lower 95% CI	Upper 95% CI	P-value	I-squared
Overall	-0.644	-0.89	-0.398	0	87.00%
With PT	**-0.605**	**-0.769**	**-0.441**	**0.142**	**33.30%**
Without PT	-1.724	-3.701	0.253	0.001	86.40%
PT involvement unknown	-0.5	-1.302	0.303	0	90.70%
Low risk of bias	-0.863	-1.134	-0.591	0.003	66.10%
Medium risk of bias	-0.401	-0.89	0.089	0	75.30%
High risk of bias	-0.445	-0.653	-0.237	NA	NA

Bold: indicated significant results without significant heterogeneity in the specific subgroup

Appendix Table F22. Exploring heterogeneity by quality of study in pain relief in 6 month after strengthening exercise compared to placebo (results from subgroup analyses)

	Standardized ES	Lower 95% CI	Upper 95% CI	P-value	I-squared
Overall	-0.658	-1.177	-0.139	0	87.00%
With PT	-1.151	-2.265	-0.038	0	93.70%
Without PT	-0.564	-1.167	0.039	NA	NA
PT involvement unknown	-0.07	-0.405	0.266	0.762	0.00%
Low risk of bias	-0.188	-0.486	0.11	0.356	3.20%
Medium risk of bias	-0.585	-1.141	-0.029	NA	NA
High risk of bias	-1.478	-3.648	0.693	0	96.90%

NA: Not applicable (only one study in the subgroup)

Appendix Table F23. Exploring heterogeneity by quality of study in composite function in 3 month after strengthening exercise compared to placebo (results from subgroup analyses)

	Standardized ES	Lower 95% CI	Upper 95% CI	P-value	I-squared
Overall	-0.895	-1.203	-0.587	0.007	64.10%
With PT	-0.813	-1.117	-0.509	0.027	57.80%
PT involvement unknown	-1.451	-1.972	-0.93	NA	NA
Masking: Single blind	**-0.741**	**-1.041**	**-0.44**	**0.067**	**51.50%**
Masking: Unclear	**-1.376**	**-1.834**	**-0.918**	**0.242**	**27.00%**

NA: Not applicable (only one study in the subgroup); all 5 studies are low risk of bias; Bold indicated significant results without significant heterogeneity in the specific subgroup

Appendix Table F24. Exploring heterogeneity by quality of study in composite function in 6 month after strengthening exercise compared to placebo (results from subgroup analyses)

	Standardized ES	Lower 95% CI	Upper 95% CI	P-value	I-squared
Overall	-1.009	-1.987	-0.031	0	91.60%
With PT	-2.966	-3.754	-2.178	NA	NA
Without PT	-0.49	-1.09	0.11	NA	NA
PT involvement unknown	-0.376	-0.714	-0.038	NA	NA
Low risk of bias	**-0.404**	**-0.698**	**-0.109**	**0.934**	**0.00%**
High risk of bias	-2.966	-3.754	-2.178	NA	NA

NA: Not applicable (only one study in the subgroup); Bold: indicated significant results without significant heterogeneity in the specific subgroup

Appendix Table F25. Exploring heterogeneity by quality of study in gait function in 3 month after strengthening exercise compared to placebo (results from subgroup analyses)

	Standardized ES	Lower 95% CI	Upper 95% CI	P-value	I-squared
Overall	-0.342	-0.598	-0.085	0.003	61.90%
With PT	-0.353	-0.651	-0.054	0.012	65.70%
Without PT	**-1.122**	**-1.928**	**-0.316**	**0.508**	**0.00%**
PT involvement unknown	-0.074	-0.655	0.507	0.065	63.30%
Low risk of bias	**-0.375**	**-0.597**	**-0.154**	**0.829**	**0.00%**
Medium risk of bias	-0.608	-1.595	0.379	0.028	72.00%
High risk of bias	-0.152	-0.942	0.637	0.001	85.40%

Bold: indicated significant results without significant heterogeneity in the specific subgroup

Appendix Table F 26. Effects of physical therapy inerventions of clinically important improvement in pain and global assessment of treatment success (results from individual RCTs)

.Author, year physical therapy	Outcome	Events in active/control Total sample size	Realtive risk 995%CI)	Absolute risk difrference (95%CI)	Number needed to treat (95%CI)
Odabasi, 2008 [182] pack	WOMAC (>=26%) in disability	26/0 60	53.0(3.4;831.7)	0.87(0.73;1.00)	
Garland, 2007 [163] estim	50% or greater improvement in Function composite	11/1 58	5.4(0.7;38.5)	0.23(0.06;0.40)	4(2;18)
Garland, 2007 [163] estim	50% or greater improvement in Function joint	9/1 58	4.4(0.6;32.1)	0.18(0.01;0.34)	6(3;83)
Kirkley, 1999 [86] brace	Clinical Success	16/6 69	2.4(1.1;5.5)	0.26(0.05;0.47)	4(2;19)
Pajareya, 2003 [184] brace	Complete recovery	2/0 119	5.1(0.2;103.7)	0.03(-0.02;0.09)	
Pajareya, 2003 [184] brace	Much improvement	18/14 119	1.3(0.7;2.4)	0.07(-0.09;0.23)	
Rattanachaiyanont, 2008 [8] diathermy	Improvement in global assessment	31/26 113	1.3(0.9;1.9)	0.15(-0.03;0.33)	
Zizic, 1995 [301] estim	50% improvement in all 3 primary efficacy variables	10/2 78	4.5(1.1;19.3)	0.19(0.04;0.34)	5(3;25)
Garland, 2007 [163] estim	50% or greater improvement	15/1 58	7.3(1.0;51.3)	0.33(0.15;0.51)	3(2;7)
Garland, 2007 [163] estim	50% or greater improvement of more than 4 over 6 outcomes	10/0 58	10.5(0.6;170.2)	0.26(0.10;0.41)	4(2;10)
Hay, 2006 [235] exercise aerobic	Much better in global assessment	15/11 183	1.3(0.6;2.7)	0.04(-0.06;0.14)	
Pisters, 2010 [3] exercise ED	Improved on Patient Global Assessment	27/16 101	1.4(0.9;2.3)	0.14(-0.05;0.33)	
Odabasi, 2008 [182] pack	Patient global assessment of >39%	24/2 60	12.0(3.1;46.3)	0.73(0.56;0.90)	1(1;2)
Odabasi, 2008 [182] pack	Physician global assessment of >39%	23/2 60	11.5(3.0;44.5)	0.70(0.52;0.88)	1(1;2)
Nicolakis, 2002 [264] PEMF	Subjective success %	10/4 32	2.8(1.1;7.2)	0.43(0.12;0.74)	2(1;8)
Battisti, 2004 [149] PEMF	Total recovery	21/19 60	1.1(0.8;1.6)	0.07(-0.17;0.30)	
Fargas-Babjak, 1989 [227] estim	> 25% improvement in pain on VAS	14/5 37	2.7(1.2;5.9)	0.46(0.17;0.75)	2(1;6)

Appendix Table F 26. Effects of physical therapy inerventions of clinically important improvement in pain and global assessment of treatment success (results from individual RCTs) (continued)

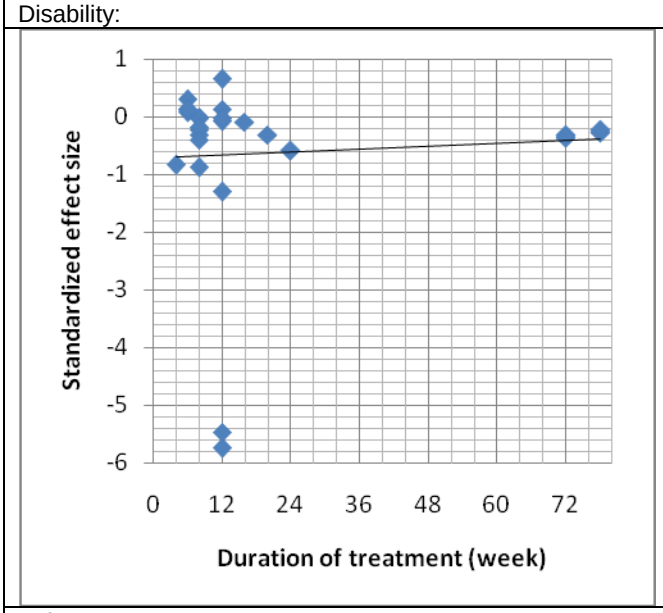
Fargas-Babjak, 1989 [227] estim	> 25% improvement in pain on West Have Yale Scale	13/5 37	2.5(1.1;5.5)	0.41(0.11;0.70)	2(1;9)
Thomas, 2005 [198] exercise aerobic	50% improvement in knee pain	61/31 379	1.3(0.9;1.9)	0.07(-0.02;0.15)	
Garland, 2007 [163] estim	50% or greater improvement in Pain	17/3 58	2.8(0.9;8.3)	0.28(0.05;0.50)	4(2;19)
Garland, 2007 [163] estim	50% or greater improvement in Pain	15/2 58	3.7(0.9;14.4)	0.28(0.07;0.49)	4(2;14)
McKnight, 2010 [9] ed	Clinically meaningful change in Pain	63/64 186	0.9(0.8;1.1)	-0.04(-0.17;0.09)	
McKnight, 2010 [9] exercise strength	Clinically meaningful change in Pain	63/56 182	1.0(0.8;1.3)	0.02(-0.12;0.16)	
Cushnaghan, 1994 [156] taping	Improvement in pain	2/2 28	1.0(0.2;6.1)	0.00(-0.26;0.26)	
Hinman, 2003 [164] taping	Improvement in pain	21/3 58	7.0(2.3;20.9)	0.62(0.42;0.82)	2(1;2)
Battisti, 2004 [149] PEMF	Pain regressed completely	27/23 60	1.2(0.9;1.5)	0.13(-0.05;0.32)	
Odabasi, 2008 [182] pack	VAS (>=40.8%) in Pain	15/0 60	31.0(1.9;495.6)	0.50(0.32;0.68)	2(1;3)

Appendix Table F27. Significant effects of aerobic exercise on minimal clinically important differences (MCID) in outcomes (results from individual RCTs)

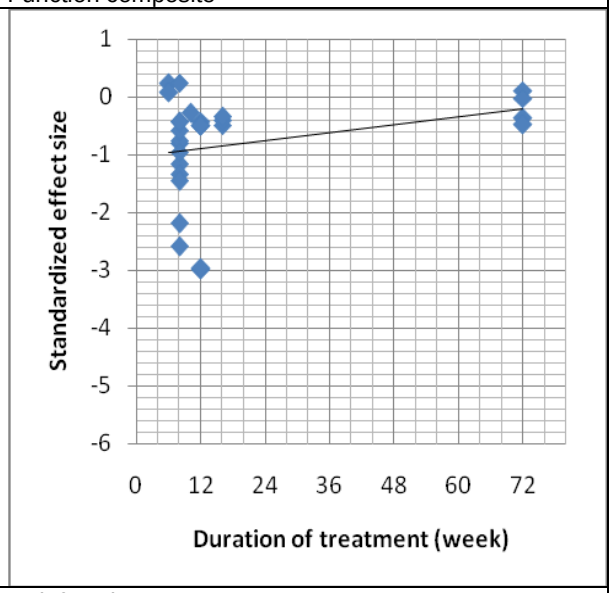
Author, year	Outcome	Mean Difference	Lower 95% CI	Upper 95% CI	Met criteria of Lax MCID	Met criteria of strict MCID	Met criteria of absolute MCID	Inclusion in pooled analyses
Deyle, 2000 [222]	disability	-471.9	-732.5	-211.3	1	1	.	*
Aglamis, 2009 [40]	disability	50.8	44.9	56.7			1	
Aglamis, 2009 [40]	disability	47.5	35.5	59.5	1	1	.	
Jan, 2009 [170]	Function composite	-14.9	-20.1	-9.7	1	1	.	*
Evcik, 2002 [310]	Function composite	-10.5	-12.4	-8.6	1	1	.	*
Hay, 2006 [235]	Function composite	-5.9	-10.0	-1.9	1	1	.	*
Fransen, 2001 [162]	Function composite	3.1	0.6	5.6	.	.	1	
Peterson, 1993 [316]	Gait function	-111.0	-161.0	-61.0	1	1	.	*
Ettinger, 1997 [159]	Gait function	123.0	78.7	167.3	0	0	.	
Deyle, 2000 [222]	Gait function	-77.7	-136.8	-18.6	1	0	.	*
Messier, 2004 [258]	Gait function	-42.8	-78.7	-7.0	0	0	.	
Focht, 2005 [229]	Gait function	-140.0	-227.1	-52.9	0	0	.	*
Peloquin, 1999 [315]	Gait function	-42.2	-70.2	-14.2	0	0	.	*
Aglamis, 2008 [330]	Gait function	-50.8	-56.7	-44.9	1	1	.	*
Aglamis, 2008 [330]	global assessment	-6.2	-7.7	-4.7	1	1	.	*
Yip, 2008 [299]	global assessment	0.4	0.0	0.9	0	0	.	
Aglamis, 2008 [330]	Health	-7.0	-8.2	-5.8	1	1	.	*
Evcik, 2002 [310]	Pain	-11.4	-13.1	-9.7	1	1	.	
Kovar, 1992 [312]	Pain	-1.0	-1.8	-0.2	1	1	.	*
Ettinger, 1997 [159]	Pain	-0.3	-0.4	-0.2	0	0	.	
Sullivan, 1998 [318]	Pain	-1.2	-2.3	0.0	1	1	.	*
Yip, 2007 [296]	Pain	-7.1	-13.5	-0.6	0	0	.	*
Hay, 2006 [235]	Pain	-1.6	-2.8	-0.5	1	1	.	*
Peloquin, 1999 [315]	Pain	-0.9	-1.5	-0.2	1	1	.	*
Aglamis, 2009 [40]	Pain	25.0	9.7	40.3	.	.	1	
Messier, 1997 [259]	Pain	-0.4	-0.7	0.0	1	1	.	

Appendix Figure F1. Associations between duration of treatment and intermediate/patient-centered outcomes, after exercise (including aerobic, strengthening, aquatic, proprioception, and Tai Chi). The longest followup standardized effect size in each study was used for this analysis

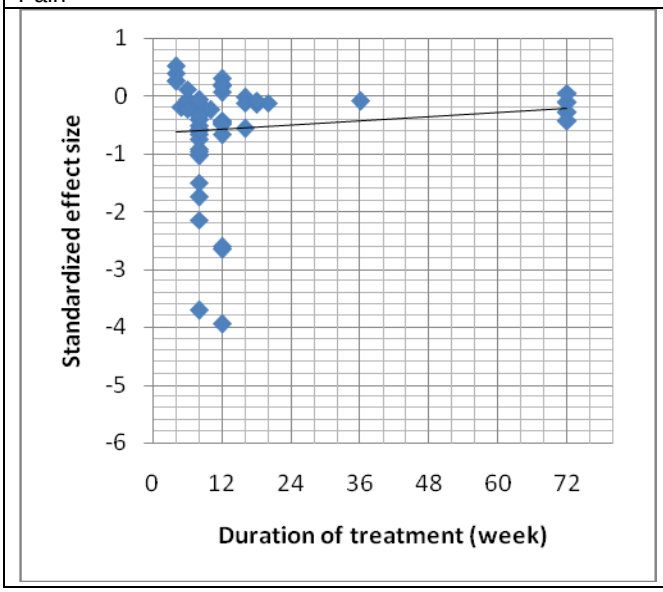
Disability:



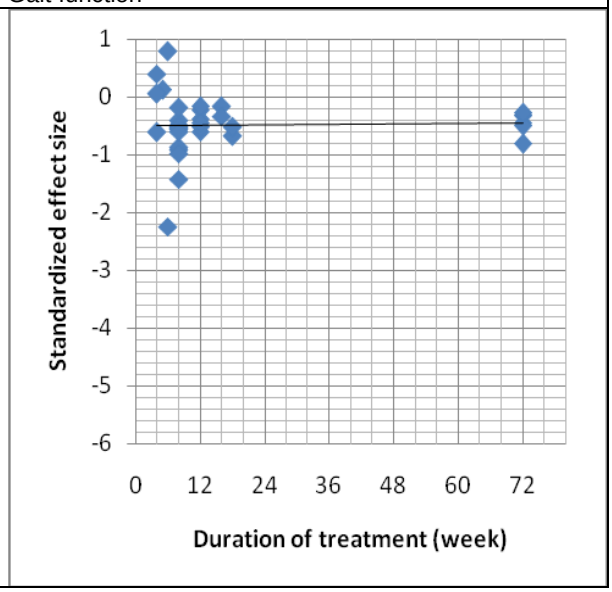
Function composite



Pain

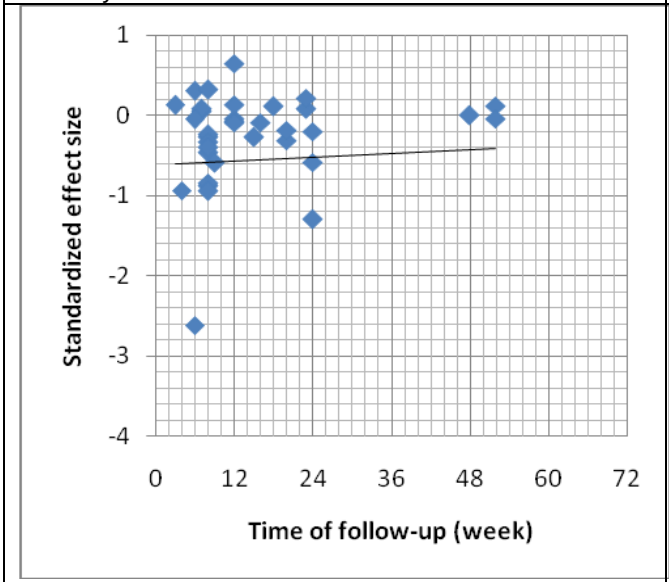


Gait function

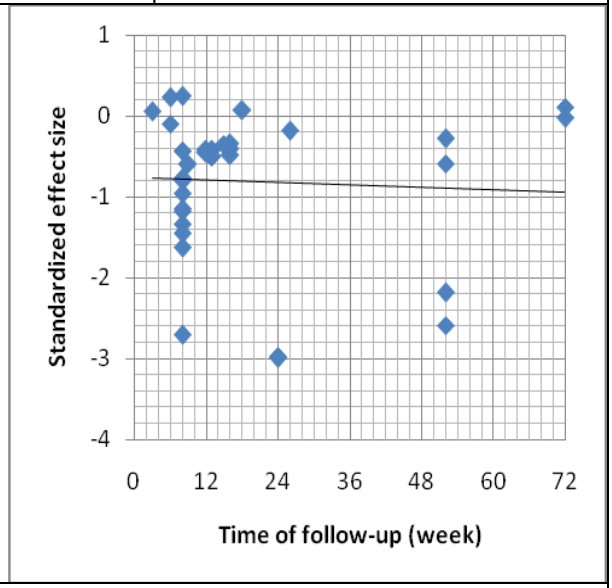


Appendix Figure F2. Associations between the time of followup and intermediate/ patient-centered outcomes, after exercise (including aerobic, strengthening, aquatic, proprioception, and Tai Chi)

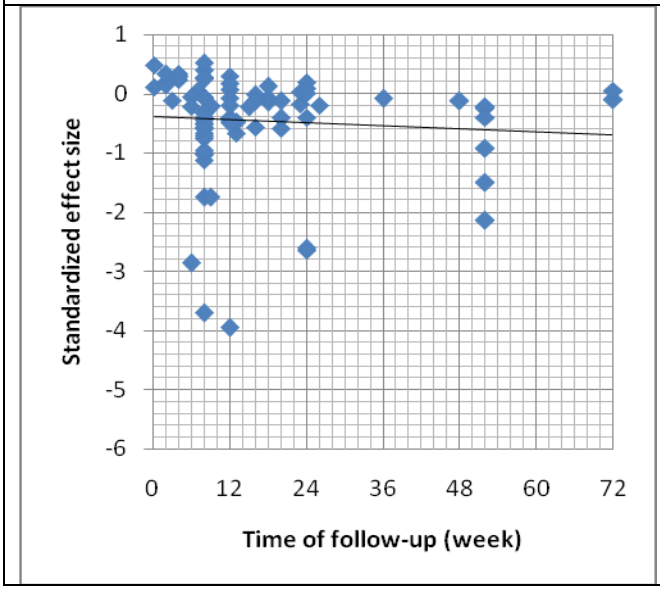
Disability:



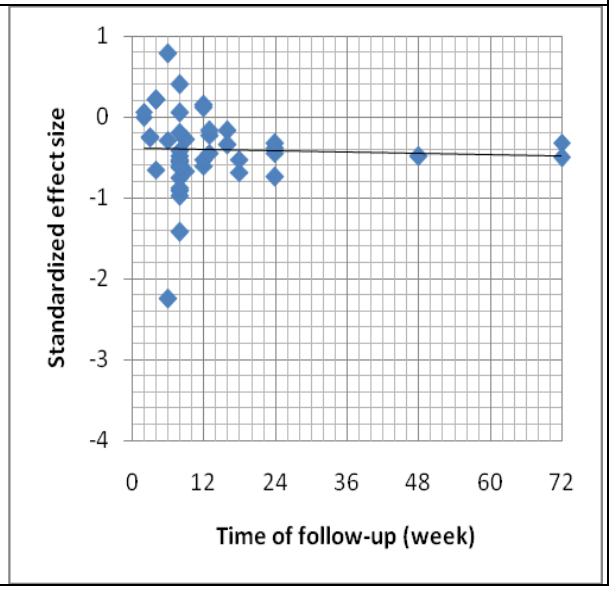
Function composite



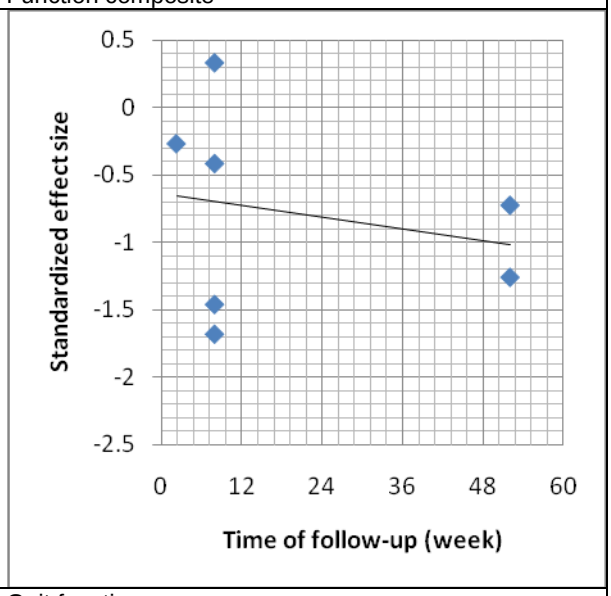
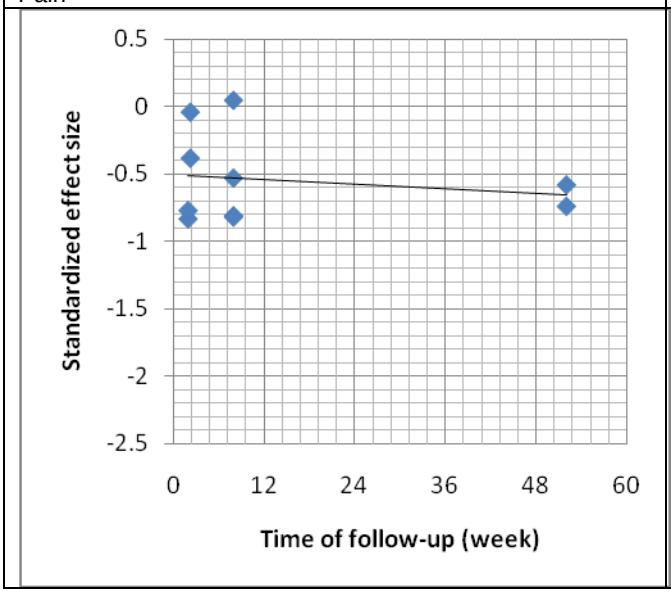
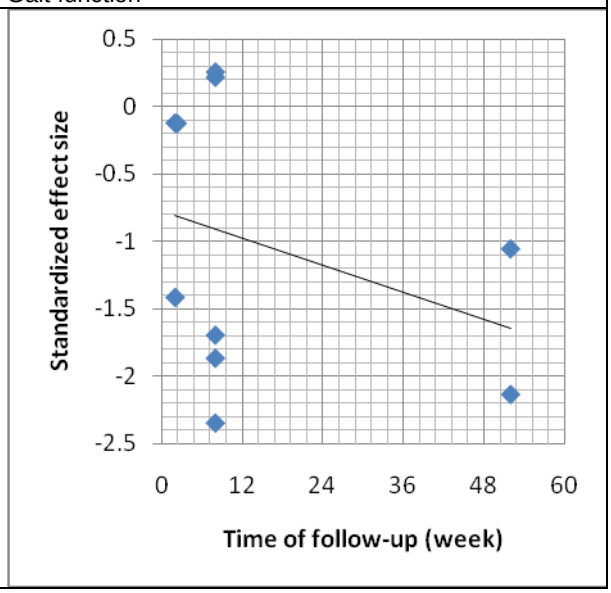
Pain



Gait function

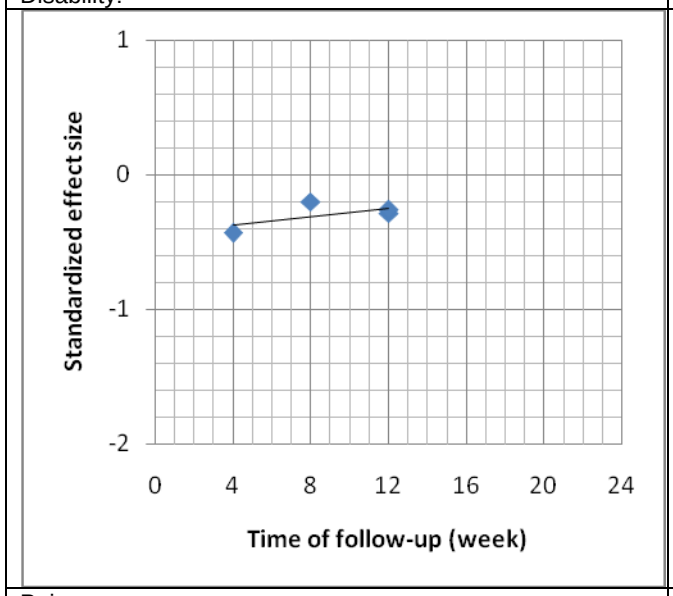


Appendix Figure F3. Associations between the time of followup and intermediate/ patient-centered outcomes, after ultrasound

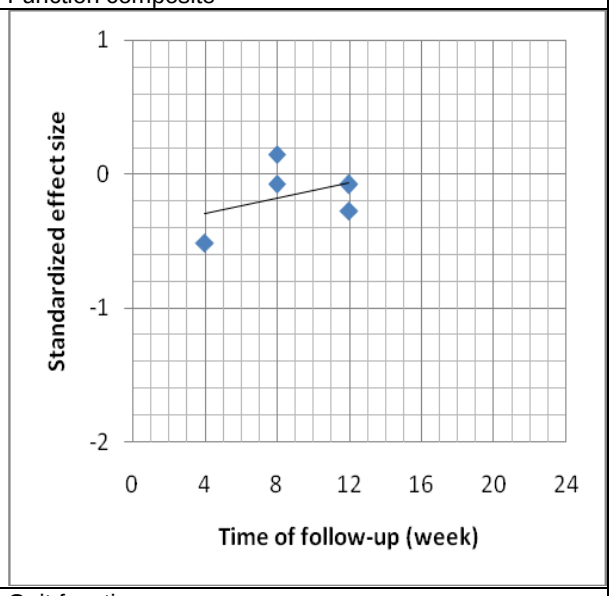
Disability:	Function composite
Insufficient data	
Pain	Gait function
	

Appendix Figure F4. Associations between the time of followup and intermediate/ patient-centered outcomes, after electrical stimulation

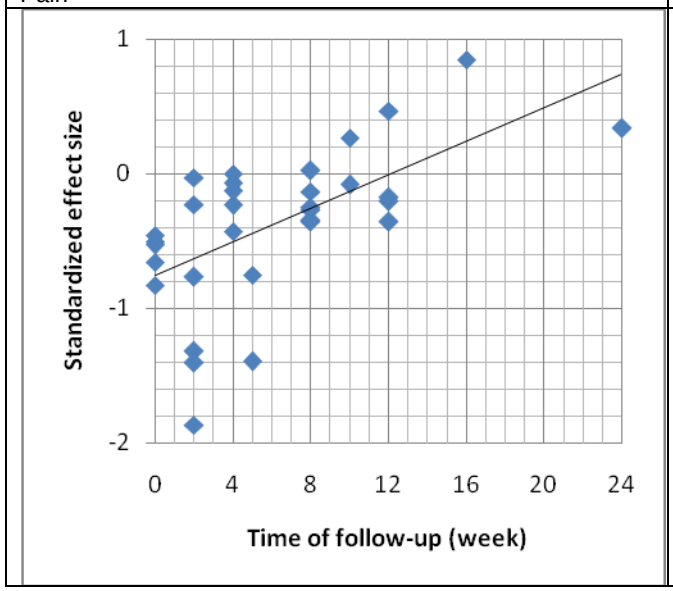
Disability:



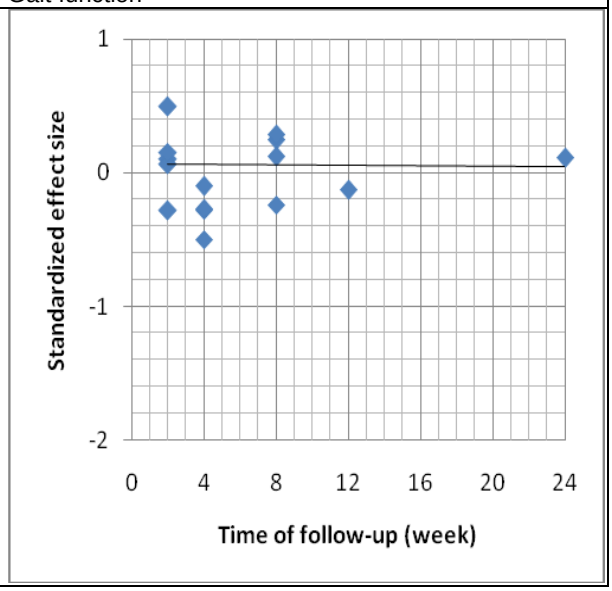
Function composite



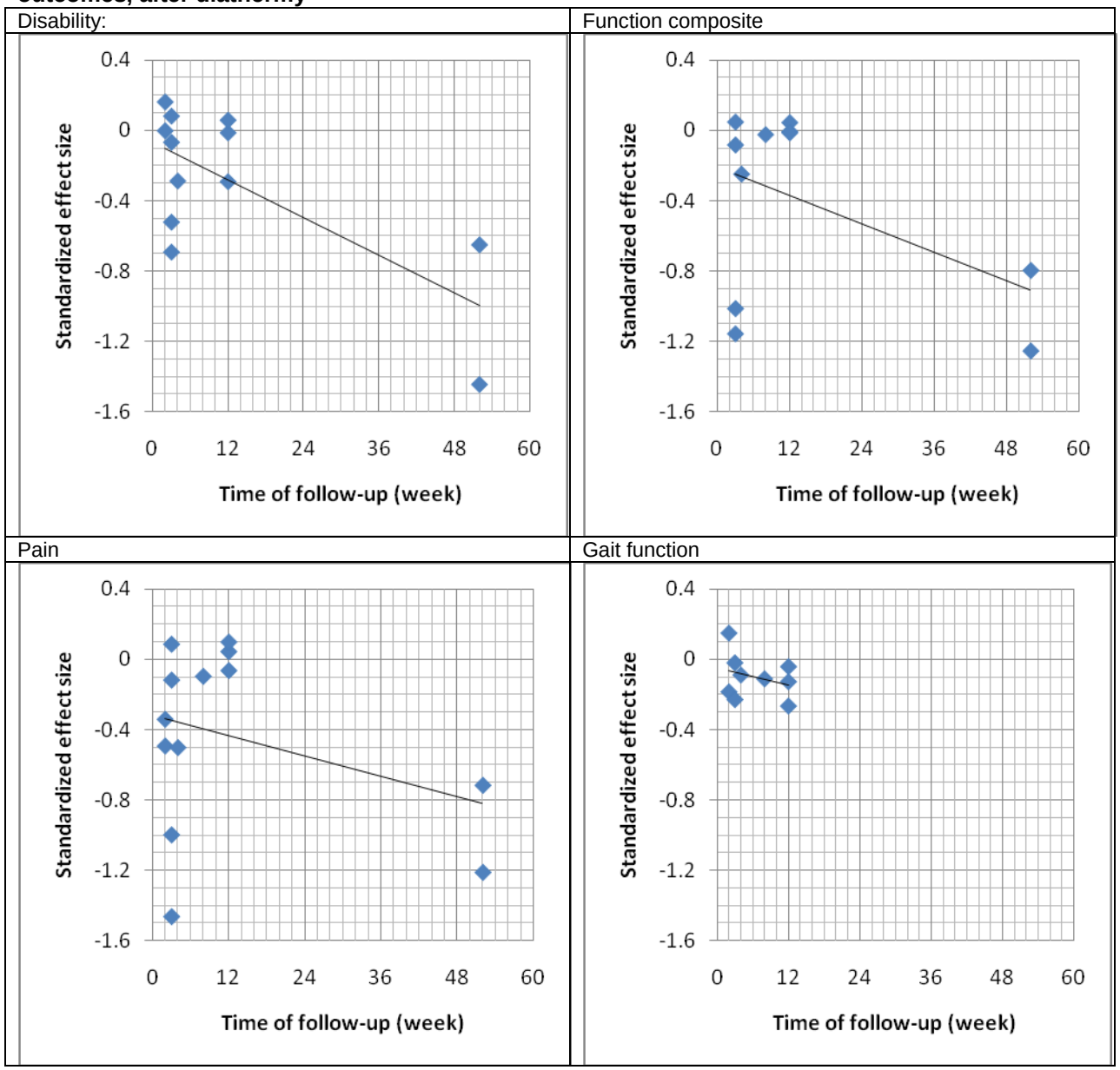
Pain



Gait function



Appendix Figure F5. Association between time of followup and intermediate/ patient-centered outcomes, after diathermy



Appendix Table F28. Description of tools

Name	Number of Items	Short description, references
Numerical Rating Scale (NRS)	Not applicable since it is a 11--point numerical rating scale	• NRS measures pain severity by asking the patient to select a number (from 0 to 10) to represent how severe the pain is. Another possible customary range for NRS is 0-100. [335] • A high score indicates a high level of symptoms [336]
SF-36 (The MOS (Medical Outcomes Study) 36-Item Short-Form Health Survey)	36 items [337]	SF-36 measures eight health concepts and two summary scales, physical and mental: 1) Physical functioning 2) Role limitations because of physical health problems 3) Bodily pain 4) Social functioning 5) General mental health (psychological distress and psychological well-being) 6) Role limitations because of emotional problems 7) Vitality (energy/fatigue) 8) General health perceptions [337] The scores for the SF-36 scale range from 0 to 100, with a higher score indicating better health status [338]
American Academy of Orthopedic Surgeons (AAOS)Sports Knee Rating Scale	27 items	This is an instrument developed by AAOS. It consists of 6 scales.[339] 1) Lower Limb Core Scale: It consists of symptoms attributable to the knee only; has seven items combined into three subscales: • Pain attributed to the lower limb • Stiffness and swelling • Function 2) Knee Giving Way Scale that consists of 4 items 3) Knee Locking or Catching Scale that consists of 4 items 4) Preinjury function scale that also consists of 4 items 5) Current (postinjury) Limitations on Activity Scale that consists of 4 items 6) Pain on Activity Scale that consists of 4 items
Bellamy et al. Low Intensity Symptom State-attainment Index (BLISS)	Not applicable	BLISS (Bellamy et al. Low Intensity Symptom State-attainment) Index is a group of attainment criteria according to which ‘‘better is good, but good is best’’ with respect to goal attainment. [340] Pain is selected as the primary measure for the BLISS analysis. There are five analyses that are considered when measuring BLISS: 1) Time to first BLISS day (a measure of initial pain relief), from baseline. The time to first BLISS day from baseline is determined by calculating the number of elapsed days. 2) BLISS days per patient over 12 months. The number of BLISS days over 12 months is calculated on a per-patient basis using the patient’s WOMAC pain subscale score. The line joining the WOMAC scores and the intersection of the BLISS line is used to Estimate the number of BLISS days. 3) Patients with a BLISS response at month 12 4) Patients with a BLISS response at any time during the study, and 5) Number of BLISS periods per patient over 12 months. The number of BLISS periods during the 12 months is calculated as patients who may be in a BLISS period more than once, that is, have WOMAC pain scores below the threshold, then above, then below. There are five threshold levels of BLISS response based on the WOMAC Pain Scale (WOMAC-P), from a very low level of pain to higher levels of pain. The threshold levels of the WOMAC-P included: WOMAC pain

Appendix Table F28. Description of tools (continued)

Name	Number of Items	Short description, references
		score <5 NU, <10 NU, <15 NU, <20 NU, and <25 NU (0 = no pain, 100= extreme pain.
Chronic Pain Grade	7 items	Chronic Pain Grade is a measure of chronic pain severity in three dimensions: persistence, intensity and disability. [341] This instrument provides a score which enables patients with chronic pain to be classified into one of four hierarchical categories according to pain severity or interference: Grade I, low disability-low intensity; Grade II, low disability-high intensity; Grade III high disability-moderately limiting; and Grade IV, high disability-severely limiting. The measures of chronic pain severity includes [342]: 1) Characteristic Pain Intensity, that is, the average of 0-10 ratings of pain right now, average pain, and worst pain multiplied by 10 to yield a 0-100 score (Dworkin et al. 1990) 2) Days in Pain in the prior 6 months 3) Time since Onset, or the elapsed time since the first episode of the pain condition 4) Disability Score, the average of three 0-10 interference ratings multiplied by 10 to yield a 0-100 score 5) Disability Days, the number of days in the prior 6 months that the subject was unable to carry out usual activities (work, school, housework) due to the pain condition of interest. The points for disability days are as follow: i) 0-6 days: 0 points ii) 7-14 days: 1 point iii) 15-30 days: 2 points iv) 31+ days: 3 points Grade I: Characteristic Pain Intensity less than 50, and less than 3 Disability Points Grade II: Characteristic Pain Intensity of 50 or greater, and less than 3 Disability Points Grade III: 3-4 Disability Points, regardless of Characteristic Pain Intensity. Grade IV: 5-6 Disability Points, regardless of Characteristic Pain Intensity.
Short Physical Performance Battery (SPPB)	3 tests	The SPPB score is derived from the performance in three objective tests: usual walking speed over 4 m, five timed repeated chair rises, and standing balance (SB).[343] Each test is scored from 0 to 4, and the sum of three scores gives a total score ranging from 0 to 12 (12 = best).[344]
Fast Self-Paced Walk Time (completed over 40 meters)	Not applicable	Patients are timed while they walk two lengths (turn excluded) of a 20-m indoor course in response to the instruction: "walk as quickly as you can without overexerting yourself."[345]
Health Assessment Questionnaire (HAQ)		The HAQ questionnaire addresses eight aspects of functional status: dressing and grooming, arising, eating, walking, hygiene, reach, grip, and general activity. For each aspect, responses to the questions are coded as follows: 0, no difficulty; 1, some difficulty; 2, much difficulty; and 3, unable to perform. Any aspect requiring assistance, mechanical or otherwise, receives a score of 2. The highest scores in each aspect are summed and divided by eight to yield a summary measure of disability. Hence, scores range from 0 to 3, with higher numbers indicating worse disabilities.[346-347]
International Knee Documentation Committee	18 questions	There are 18 questions (10 main questions, plus 8 sub questions regarding activity limitations due to knee disorders) in 3 subsets: symptoms, sports activities, and function. Items are ranked according to presence or absence of symptoms, a 5-point Likert scale, a 6-point Likert scale, or an 11-point (ie, 0-10) scale. [348] The IKDC Subjective Knee Form was designed as an evaluative measure to detect improvement or deterioration in symptoms,

Appendix Table F28. Description of tools (continued)

Name	Number of Items	Short description, references
		function, and sports activity experienced by patients with a variety of knee conditions, including ligament and meniscal injuries, articular cartilage lesions, and patellofemoral pain. [349] The IKDC Subjective Knee Evaluation Form is scored by summing the scores for the individual items and then transforming the score to a scale that ranges from 0 to 100. A score of 100 is interpreted to mean no limitation with activities of daily living or sports activities and the absence of symptoms.
Patient global assessment of disease status	None	This is assessed by the question, “Considering all the ways your arthritis affects you, mark an “x” through the line for how well you are doing”. The answer is indicated on a 0-100mm VAS scale. Higher scores indicate worse status.
Investigator global assessment of disease status	None	This is assessed by the question, “Make a global assessment of the patient’s disease status by marking an “x” in one box below”; 0 = very well, 1 = well, 2 = fair, 3 = poor, 4 = very poor”.
Knee extensor force in Newtons	None	Bilateral isometric knee extensor muscle force is assessed using a load cell (XTran Model S1W; Applied Measurement, Victoria, Australia) fixed onto the metal framework of a chair and connected to a simple software program sampling at 80 Hz. During assessment patients are seated on the chair with the back and thigh well supported, hands resting on the thighs, the foot free, and the knee passively drawn into 90o flexion by gravity. A soft cuff, attached via an adjustable non-elastic metal cord to the load cell, is fitted with Velcro just above the ankle. Patients are asked to build up their force and then to “push” or “pull” as hard as they could for 5 seconds.[350]
Knee flexor force in Newtons	None	Bilateral isometric knee flexor muscle force is assessed using a load cell (XTran Model S1W; Applied Measurement, Victoria, Australia) fixed onto the metal framework of a chair and connected to a simple software program sampling at 80 Hz. During assessment patients are seated on the chair with the back and thigh well supported, hands resting on the thighs, the foot free, and the knee passively drawn into 90o flexion by gravity. A soft cuff, attached via an adjustable non-elastic metal cord to the load cell, is fitted with Velcro just above the ankle. Patients are asked to build up their force and then to “push” or “pull” as hard as they could for 5 seconds [350]
Knee, Injury and Osteoarthritis Outcome Score (KOOS)	42 items	The KOOS questionnaire covers five dimensions that are as follows: pain (nine items), symptoms (seven items), activities of daily living (17 items), sport and recreation function (five items), and knee-related quality of life (four items). Each item can be answered by a 5–point Likert scale (0-4). Each of the five scores is calculated as the sum of the items included, in accordance with score calculations of the WOMAC Osteoarthritis Index. Scores are then transformed to a 0-100 scale, with zero representing extreme knee problems and 100 representing no knee problems.[351]
Lequesne Knee Index	10 items	The Lequesne OA index directly aggregates symptoms and function which are not graded separately.[352] The index includes three sections with a total of 10 questions. The first section (1A-1E) asks about pain or discomfort at ‘night’ (1A), ‘after getting up in the morning’ (1B), ‘when standing’ (1C), and ‘when walking’ (1D). Question 1E addresses pain ‘when rising from sitting’ (knee index) and pain when ‘sitting 2h’ (hip index). Questions 1C and 1E are graded dichotomously: 0=no, 1=yes. Questions 1A, 1B and 1D have three categories with 0 =no; categories 1 and 2 are different for each question (1A: 1 = only with movement or in certain positions, 2 = with no movement; 1B: 1 = more than one but less than 15 min, 2 = 15 min or more; 1D: 1 = only after walking some distance, 2 = initially and increasingly with continued walking).

Appendix Table F28. Description of tools (continued)

Name	Number of Items	Short description, references
		The second section asks about the maximum walk distance [graded from 0 = unlimited to 6 = less than 100m (328 ft). If patients use one or more walking aids the score is upgraded by one and two points, respectively. The third section addresses physical function disability with four categories graded from 0 = without difficulty to 2 = unable to do so. The knee index asks about 'climbing one flight of stairs upward', 'downward', 'squatting' and 'walking on uneven ground'. The hip index asks about 'putting on socks', 'pick up an object on the floor', 'going up or down one flight of stairs' and 'getting out of a car or a chair'. The Lequesne OA index is scored as the sum of all questions. The score range of each section is from 0 to 8 resulting in a total score ranging from 0 to 24.
Modified Lysholm Knee Scoring Scale	8 items	The Modified Lysholm Knee Scoring Scale was first described by Tegner and Lysholm in 1985.[348] Eight symptoms and disabilities are assessed: limping, use of support, locking or catching, instability, pain, swelling, difficulty with stair climbing, and difficulty with squatting. Points range from 5 for the absence of a limp, lack of use of support, or no problems squatting, up to 25 for no pain or no instability.
Six Minute Walk Test	Not applicable	Patients are instructed to cover as much distance as possible during the 6 minute time frame with opportunity to stop and rest if required.[345]
Timed Up and Go Time (TUG)	Not applicable	Patients are required to rise from a standard arm chair, walk at a safe and comfortable pace to a tape mark 3-m away, then return to a sitting position in the chair.[345]
Short form Arthritis Impact Measurement Scale 2 (AIMS2-SF)	26 items	The AIMS2 is a self-administered questionnaire with 78 items that include information on patients' socio-demographic and clinical characteristics, as well as 26 core items that form the AIMS2 – SF.[353] The AIMS2-SF has 26-items that measures 5 different domains of health status. Respondents are asked to indicate, on a 5-point Likert scale, how much of their time is limited due to physical function (mobility, walking, and bending, self-care, etc.), role function (work), and social function (social activities and support), and how much of the time they are bothered by symptoms (arthritis pain) and affect (level of tension and mood).[354]
Algofunctional index for osteoarthritis (same as Lequesne index)	10 questions	It consists of 8 points for pain, 8 for the maximum distance walked, and 8 for activities of daily living.
Functional Reach Test	Not applicable	Functional reach can be measured using an electronic functional reach device or clinically by using a 48-inch "yardstick".[355] In the electronic method, the individuals are asked to assume a position of normal, relaxed stance near the center of a force platform. In this position their shoulders should be perpendicular to the reach instrument device. In order to maintain identical foot placement during all testing conditions, the foot position is traced on a sheet of paper attached to the surface of the platform. The stance width is obtained from the foot tracing by measuring the distance between the medial borders of the heels. The electronic functional reach measurement device is elevated to the height of the acromion. Subjects then required to extend the right arm horizontally (approximately 90°) and place a closed fist against the sliding handle (position 1). Then they are asked to slide the handle bar as far forward as they comfortably could without taking a step or losing their balance (position 2). Functional reach is defined as the mean difference between positions 1 and 2, over three trials.

Appendix Table F28. Description of tools (continued)

Name	Number of Items	Short description, references
		The clinically accessible measure of reach consists of a 48-inch yardstick" secured to the wall at the height of the right acromion. During this procedure, the platform foot tracing is placed on the floor and subjects are asked to assume the identical foot position as in the electronic method. They are then asked to make a fist and extend their arm forward as in the previous test (position 1) and the placement of the end of the third metacarpal along the yardstick is recorded. Then, they have to reach as far forward as they could without losing their balance or taking a step (position 2), and the placement of the end of the third metacarpal is again recorded. Functional reach is defined as the mean difference between positions 1 and 2 over three trials.
Giving Way Test	Not applicable	It is one of the items of the Knee Standardized Clinical Interview (KNE-SCI) questionnaire[356] The subject is asked: "Does the knee feel as if it's going to give away?" If yes, "has it actually given way in the last 6 months?" If yes, "How often has it given way in the last 6 months?"
Step Test	Not applicable	It is a clinical test of balance that incorporates dynamic single limb stance.[357] During this test, the subjects are required to stand unsupported with the feet parallel to each other and a block 5 cm directly in front of them. Subjects are then advised which leg was the stepping leg and asked to place the whole foot onto the block, then return it fully back down to the floor. This procedure is repeated as fast as possible. The subject is not supposed to move the other foot during the test period. One completed step comprised placing the foot fully onto the block and then on the floor. The number of times the subject completed one step usually over 15 seconds is recorded.
Arthritis Self- Efficacy Scale (ASES)	20 items	The ASES measures self-efficacy in 3 domains [358]: 1) pain management, 2) physical function, and 3) other arthritis symptoms It uses a visual analog scale in which a higher score indicates greater self-efficacy, a positive result. The total possible range is 0-100.[359-360]
Standing Balance Tests	Not applicable	It is a timed, single-leg standing balance test that is done during clinical examination. It is a measure of the number of seconds for which a subject is able to stand unsupported on one foot while looking straight ahead with hands on hips.[361]
Knee Proprioception Test	Not applicable	To assess knee proprioception, a device based on recommendations by Sharma L. and Pai et al. is used.[362] This device consists of a chair with a computer-controlled motor and transmission system and 2 attached free-moving arms. Each arm supports the subject's shank and foot. The joint of each arm is moved by a computer-controlled stepper motor and transmission system for angular displacement. The foot/ankle is attached with an air splint to the footrest, which is a moving component of the apparatus. Angular motion is detected by angular displacement and force transducers. Two handheld buttons were attached to the tray. Each time, the leg is moved to a starting position of 30° knee flexion. Following a random delay, the subjects are asked to extend the knee further with an angular velocity of 0.3°/second. They are then instructed to push a handheld button at the moment of definite detection of knee joint position change. The angular displacement between the starting position at 30° flexion and the position in the extension direction at the instance when the button was pushed was recorded as the measure of knee joint proprioception. A low value indicates good proprioception.

Appendix Table F28. Description of tools (continued)

Name	Number of Items	Short description, references
Knee Patient-Specific Index (KPSI)	43 items	The KPSI consists of 43 items divided into three main areas: [363] 1) symptoms 2)bothersome activities, and 3) difficulties with physical function The number of items in the scale varies with the individual's selection of attributes (items) relevant to them. Patients can add additional specific individual concerns to the existing 43 items. Patients can separately rate the severity and importance of their complaint(s) using seven response categories. For severity, the response categories are as follows: not severe, minimally severe, somewhat severe, moderately severe, very severe, extremely severe, and most severe imaginable. For importance, the response categories are as follows: not important at all, minimally important, a little important, important, moderately important, very important, and extremely important. If an item was deemed not applicable (e.g., the symptom of knee swelling was no longer present) then the item was not rated for either severity or importance. The raw score is transformed to a 0-100 scale with higher scores indicating worse outcomes.
Influence of Rheumatic Disease on General Health & Lifestyle (IRGL)	70 items	The IRGL (Invloed van Reuma op Gezondheid en Leefwijze = Influence of Rheumatic Disease on General Health & Lifestyle) is a Dutch version of the Arthritis Impact [364] Measurement Scale. It consists of 12 scales encompassing four health dimensions: 1) Physical functioning: i) Mobility scale: 7 items ii) Self-care scale: 8 items iii) Pain scale: 6 items 2) Psychological functioning: i) Anxiety scale: 10 items ii) Depressed mood scale: 6 items iii) Cheerful mood scale: 6 items 3) Social functioning: i) Perceived support scale: 5 items ii) Actual support scale: 3 items iii) Mutual visit: 2 items iv) Social network scale: One item for number of neighbors with whom one associates and one item for the number of friends one has. 4) Disease impact: It measures the disease impact on several domains of daily life like work, activities, leisure, relationships, sexuality, food, sleep. i) Disease impact scale: 10 items that measure Impact activities scale: 5 items: [365]

Appendix Table F29. Average size, percentage of women, and patient age in the studies of the association between intermediate and clinical outcomes

Country	Variable	Mean	Standard deviation	Maximum	Minimum	Median
Total	Age	64.978	5.132	80	54.6	65.6
Total	Size	600	1305	6726	10	149
Australia	Size	157	89	259	105	106
Belgium, France, Germany, Italy, Spain, Switzerland, and the United Kingdom	Size	600		600	600	600
Canada	Size	41	41	100	10	28
Finland	Size	88		88	88	88
France	Size	3660	3320	6726	134	4121
Italy	Size	233		233	233	233
Japan	Size	130		130	130	130
NR	Size	100	70	205	57	69
Singapore	Size	258		258	258	258
The Netherlands	Size	121	56	185	86	92
Turkey	Size	140		140	140	140
UK	Size	914	1424	4057	17	621
USA	Size	429	551	2115	50	257
Total	% Women	70	19	100	0	71
Australia	% Women	60	6	64	53	64
Belgium, France, Germany, Italy, Spain, Switzerland, and the United Kingdom	% Women	73		73	73	73
Canada	% Women	74	33	100	33	82
Finland	% Women	75		75	75	75
France	% Women	60	2	61	58	60
Italy	% Women	71		71	71	71
Japan	% Women	100		100	100	100
NR	% Women	68	11	80	53	69
Singapore	% Women	83		83	83	83
The Netherlands	% Women	81	5	85	76	82
Turkey	% Women	74		74	74	74
UK	% Women	59	6	69	54	59
USA	% Women	71	26	100	0	73

Appendix Table F30. Quality of diagnostic studies

Author, year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Comments
Bieleman, 2009[366]	Yes	Yes	No	Unclear	Unclear	Yes	No	Yes	Yes	Yes	Unclear	Not relevant	Yes	Yes	No withdrawals
Salaffi, 2004[335]	Yes	Unclear	Yes	Unclear	No	Yes	Yes	Yes	Yes	Yes	Unclear	Not relevant	Yes	Yes	No withdrawals

Definitions of criteria:

Criterion number	Definition	Explanation
1	Spectrum of patients representative of the patients who will receive the test in practice?	Yes if community or primary care; no if others; unclear if not specified
2	Selection criteria clearly described	Yes if inclusion and exclusion criteria exist; unclear if missing one of them; no if missing both
3	Reference standard likely to correctly classify the target intervention	Yes if ACR; no if others
4	time period between reference standard and index test	Yes if no more than 2 weeks, no if more than 2 weeks, unclear if unknown
5	whole sample or a random selection of the sample receive verification using a reference standard of diagnosis	Yes if random selection or no sampling; no if non-random selection; unclear is unknown
6	received same reference standard regardless of the index test	Yes if all received gold standard method
7	reference standard independent of the index test	Yes if ACR as gold standard; no if clinical diagnosis/others
8	index test described in detail	All yes (inclusion criteria of the studies)
9	Reference test described in detail	Yes if detailed description; unclear if clinical diagnosis without clear definitions
10	index test interpreted without knowledge of the results of the reference standard	All yes
11	reference standard results interpreted without knowledge of the index test	Yes if blinding, no if not blinding; unclear if not mentioned
12	same clinical data available when test results were interpreted as would be available when the test is used in practice	Not relevant-omitted from quality assessment as Whiting's suggestions Whiting, 2003[367]
13	Not interpretable/intermediate test results reported	No if the results did not have multijoint OA
14	withdrawals explained	No if there are withdraw cases

Appendix Table F31. Association between intermediate and clinical outcomes-diagnostic value of the tests

Author, year Study characteristics	Index method	Reference method	Outcome	Sensitivity	Specificity	Positive likelihood ratio	Negative likelihood ratio	Diagnostic odds ratio
Bieleman, 2009[366] Country: The Netherlands Age: >45 Sample: 92	SF-36:physical function: cut-off point<60	Functional Capacity Evaluation (FCE)	Work limitations	33.0	97.0	**11.0**	0.69	15.9
Bieleman, 2009[366] Country: The Netherlands Age: >45 Sample: 92	WOMAC: function: cut-off point>-21	Functional Capacity Evaluation (FCE)	Work limitations	51.0	88.0	4.3	0.56	7.6.8
Salaffi, 2004[335] Country: Italy Age: >18 Sample: 233	Baseline NRS score <=4 and much better on PGIC scale	Patients' Global Impression of Change (PGIC)	Percent change in Numerical Rating Scale score	96.1	91.2	**10.9**	0.04	255.4
Salaffi, 2004[335] Country: Italy Age: >18 Sample: 233	Baseline NRS score >4 to <=7 and much better on PGIC scale	PGIC	Percent change in NRS score	92.5	82.9	5.4	0.09	59.8
Salaffi, 2004[335] Country: Italy Age: >18 Sample: 233	Baseline NRS score >7 to 10 and much better on PGIC scale	PGIC	Percent change in NRS score	91.4	90.1	9.2	0.10	96.7
Salaffi, 2004[335] Country: Italy Age: >18 Sample: 233	Much better on PGIC scale	PGIC	Percent change in NRS score	83.9	92.6	**11.3**	0.17	65.2

Bold- large positive predictive likelihood ratios suggesting conclusive increase in the likelihood of outcome

Appendix Table F32. Association between gait and functional performance

Author, year Study characteristics	Adjustment	Gait measure	Functional outcome	Regression model	Mean (95% CI)
Rejeski, 1998[190] Country: USA Age: NR Sample: 439	Baseline knee pain, 18-month knee pain, 18-month self-efficacy, baseline self-efficacy	Baseline stair climb time	Effect of treatment on stair climb time	linear	**0.92 (0.76; 1.08)**
Rejeski, 1998[190] Country: USA Age: NR Sample: 439	Baseline knee pain, 18-month knee pain, 18-month self-efficacy, baseline self-efficacy, aerobic, resistance training	Baseline stair climb time	Effect of treatment on stair climb time	linear	**0.93 (0.77; 1.09)**
Bennell, 2004[368] Country: Australia Age: >50 Sample: 259	NR	TUG (Timed Up and Go test)	Maximal Activity Profile (represents the highest oxygen-demanding activity the participant is still able to perform) score	linear	**-0.96 (-1.37; -0.55)**
Bennell, 2004[368] Country: Australia Age: >50 Sample: 259	NR	Walking speed	Maximal Activity Profile (represents the highest oxygen-demanding activity the participant is still able to perform) score	linear	**7.91 (2.27; 13.55)**
Topp, 2000[369] Country: ?USA Age: NR Sample: 78	Age, sex, BMI, depression, MVC, activation (%), radiographic score	WOMAC function scale	Time to get up off of the floor	linear	**0.4, P value 0**
Topp, 2000[369] Country: ?USA Age: NR Sample: 78	Age, sex, BMI, depression, MVC, activation (%), radiographic score	WOMAC function scale	Time to ascend stairs (s)	linear	**0.35, P value 0**
Topp, 2000[369] Country: ?USA Age: NR Sample: 78	Age, sex, BMI, depression, MVC, activation, radiographic score	WOMAC function scale	Time to descend stairs (s)	linear	**0.47, P value 0**
Nebel, 2009[370] Country: USA Age: NR Sample: 179	Age, sex, BMI, depression, MVC, activation, radiographic score	WOMAC function	Gait Speed (m/s) (at fast speed)	linear	**-0.169, P value 0.042**

Bold- statistically significant results

Appendix Table F33. Association between strength and functional performance

Author, year Study characteristics	Adjustment	Strength measure	Functional outcome	Regression model	Mean (95% CI)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Unadjusted	Quadriceps strength(mm Hg):200-299 vs. ≥300	WOMAC: physical function	Cox regression	1.08 (0.79; 1.47)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Unadjusted	Quadriceps strength(mm Hg): 141-200 vs. ≥300	WOMAC: physical function	Cox regression	1.27 (0.93; 1.73)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Unadjusted	Quadriceps strength(mm Hg):≤140 vs. ≥300	WOMAC: physical function	Cox regression	**1.52 (1.12; 2.06)**
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Unadjusted	Hamstring strength(mm Hg):140-184 vs. ≥185	WOMAC: physical function	Cox regression	1.10 (0.81; 1.50)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Unadjusted	Hamstring strength(mm Hg): 101-139 vs. ≥185	WOMAC: physical function	Cox regression	1.31 (0.97; 1.76)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Unadjusted	Hamstring strength(mm Hg): ≤100 vs. ≥185	WOMAC: physical function	Cox regression	**1.51 (1.12; 2.02)**
Wood, 2008[361] Country: UK Age: >50 Sample: 741	NR	20-30 kg of Force (quadriceps femoris muscle strength) vs. >30	WOMAC: physical function	logistic	1.29 (0.83; 2.01)
Wood, 2008[361] Country: UK Age: >50 Sample: 741	NR	10-20 kg of Force (quadriceps femoris muscle strength)vs. >30	WOMAC: physical function	logistic	**2.37 (1.57; 3.59)**
Wood, 2008[361] Country: UK Age: >50 Sample: 741	NR	≤10 kg of Force (quadriceps femoris muscle strength)vs. >30	WOMAC: physical function	logistic	**5.17 (3.01; 8.86)**
Van Der Esch, 2006[372] Country: The Netherlands Age: >40 Sample: 86	NR	Muscle strength	walking time	linear	**-72.73** **(-97.99; -47.47)**

Appendix Table F33. Association between strength and functional performance (continued)

Author, year Study characteristics	Adjustment	Strength measure	Functional outcome	Regression model	Mean (95% CI)
Van Der Esch, 2006[372] Country: The Netherlands Age: >40 Sample: 86	NR	Interaction between muscle strength* and laxity (knee instability)	walking time	linear	**-12.24 (-19.67; -4.81)**
Van Der Esch, 2006[372] Country: The Netherlands Age: >40 Sample: 86	NR	Muscle strength	WOMAC physical function	linear	**-31.49 (-40.27; -22.71)**
Van Der Esch, 2006[372] Country: The Netherlands Age: >40 Sample: 86	NR	Interaction between muscle strength* and laxity (knee instability)	WOMAC physical function	linear	-2.34 (-4.93; 0.25)
Hunt, 2010[373] Country: NR Age: NR Sample: 57	Disease severity, Symptoms (bilateral vs unilateral), Lower extremity alignment, WOMAC pain	Quadriceps torque	balance performance (center of pressure path length)	linear	**-7.94 (-15.13; -0.74)**
Jadelis, 2001[374] Country: USA Age: >65 Sample: 480	Ankle strength, knee*ankle interaction	Knee strength	anteroposterior dynamic balance	linear	**0.28 P-value <0.001**
Jadelis, 2001[374] Country: USA Age: >65 Sample: 480	Pain, radiographic score, BMI, gender, foot length	Knee strength	anteroposterior dynamic balance	linear	**0.42 P-value <0.001**
Jadelis, 2001[374] Country: USA Age: >65 Sample: 480	Pain, radiographic score, BMI, gender, foot length, ankle strength	Knee strength	anteroposterior dynamic balance	linear	**0.32 P-value <0.001**
Jadelis, 2001[374] Country: USA Age: >65 Sample: 480	Pain, radiographic score, BMI, gender, foot	Knee strength	anteroposterior dynamic balance	linear	**0.33 P-value <0.001**

Appendix Table F33. Association between strength and functional performance (continued)

Author, year Study characteristics	Adjustment	Strength measure	Functional outcome	Regression model	Mean (95% CI)
	length, ankle strength, pain*knee interaction				
Jadelis, 2001[374] Country: USA Age: >65 Sample: 480	Knee strength, knee*ankle strength	Ankle strength	anteroposterior dynamic balance	linear	**0.32 P-value <0.001**
Jadelis, 2001[374] Country: USA Age: >65 Sample: 480	Pain, radiographic score, BMI, gender, foot length, knee strength	Ankle strength	anteroposterior dynamic balance	linear	**0.28 P-value <0.001**
Jadelis, 2001[374] Country: USA Age: >65 Sample: 480	Pain, radiographic score, BMI, gender, foot length, knee strength, pain*knee interaction	Ankle strength	anteroposterior dynamic balance	linear	**0.28 p-value<0.001**
Sharma, 2003[375] Country: USA Age: NR Sample: 257	Age, BMI, knee pain intensity, and disease severity (higher K/L grade of the 2 knees)	Hamstring strength, ft-lbs	WOMAC function scale	logistic	0.86/20 ft-lbs (0.60; 1.23)
Sharma, 2003[375] Country: USA Age: NR Sample: 257	Age, BMI, knee pain intensity, and disease severity (higher K/L grade of the 2 knees)	Quadriceps strength, ft-lbs	WOMAC function scale	logistic	0.88/20 ft-lbs (0.70; 1.11)
Sharma, 2003[375] Country: USA Age: NR Sample: 257	Age, BMI, knee pain intensity, and disease severity (higher K/L grade of the 2 knees)	Proprioceptive inaccuracy, degrees	WOMAC function scale	logistic	1.09/1o (0.88; 1.34)

Appendix Table F33. Association between strength and functional performance (continued)

Author, year Study characteristics	Adjustment	Strength measure	Functional outcome	Regression model	Mean (95% CI)
Maly, 2007[376] Country: Canada Age: >50 Sample: 54	NR	Quadriceps strength	Walking performance (Six Minute Walk test)	linear	**1.12 (0.28; 1.96)**
Maly, 2007[376] Country: Canada Age: >50 Sample: 54	NR	Hamstrings strength	Walking performance (Six Minute Walk test)	linear	**1.41 (0.18; 2.64)**
van der Esch, 2008[377] Country: The Netherlands Age: >40 Sample: 63	NR	Muscle strength (Nm/kg)	Walking time (100m walking test)	linear	**-53.94 (-68.89; -38.99)**
van der Esch, 2008[377] Country: The Netherlands Age: >40 Sample: 63	NR	Muscle strength (Nm/kg)	Walking time (100m walking test)	linear	**-52.17 (-66.83; -37.51)**
O'Reilly, 1998[378] Country: UK Age: >40 Sample: 300 each of cases and controls	Muscle strength, pain, cognitive functioning	MVC (kgF) (voluntary quadriceps strength)	WOMAC function	linear	**-0.11 (-0.15; -0.07)**
O'Reilly, 1998[378] Country: UK Age: >40 Sample: 300 each of cases and controls	Muscle strength, pain, cognitive functioning, age/BMI	Quadriceps activation (%)	WOMAC function	linear	-0.05 (-0.36; 0.26)
Topp, 2000[369] Country: USA Age: NR Sample: 78	NR	Maximum knee extension torque in affected leg by body weight	Time to get down to the floor	linear	**-16.71, P value 0**
Topp, 2000[369] Country: USA Age: NR Sample: 78	NR	Maximum isometric torque in unaffected leg by body weight	Time to get up off of the floor	linear	**-28.74, P value 0**
Topp, 2000[369] Country: USA Age: NR Sample: 78	NR	Maximum isometric torque in affected leg by body weight	Time to ascend stairs (s)	linear	**-16.79, P value 0.04**

Appendix Table F33. Association between strength and functional performance (continued)

Author, year Study characteristics	Adjustment	Strength measure	Functional outcome	Regression model	Mean (95% CI)
Topp, 2000[369] Country: USA Age: NR Sample: 78	NR	Maximum knee flexion torque in unaffected leg by body weight	Time to ascend stairs (s)	linear	**-29.3, P value 0.02**
Topp, 2000[369] Country: USA Age: NR Sample: 78	NR	Maximum knee flexion torque in unaffected leg by body weight	Time to descend stairs (s)	linear	**-45.63, P value 0**
van der Esch, 2008[377] Country: The Netherlands Age: >40 Sample: 63	Muscle strength	Muscle strength (Nm/kg)	Get Up and Go time	linear	**-9.97 (-13.18; -6.76)**
van der Esch, 2008[377] Country: The Netherlands Age: >40 Sample: 63	Muscle strength, pain	Muscle strength (Nm/kg)	WOMAC physical function	linear	**-17.24 (-24.04; -10.44)**
van der Esch, 2008[377] Country: The Netherlands Age: >40 Sample: 63	Muscle strength, pain, comorbidity	Muscle strength (Nm/kg)	Get Up and Go time	linear	**-10.00 (-13.16; -6.84)**
van der Esch, 2008[377] Country: The Netherlands Age: >40 Sample: 63	Age, sex, BMI, depression, anxiety, activation (%), radiographic score	Muscle strength (Nm/kg)	WOMAC physical function	linear	**-15.83 (-22.71; -8.95)**

Bold- statistically significant results; underlined- large magnitude of the association

Appendix Table F34. Association between balance and functional performance

Author, year Study characteristics	Adjustment	Balance measure	Functional outcome	Regression model	Mean (95% CI)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	BMI, anxiety, duration of morning stiffness, bilateral knee pain, age, inactivity gelling, local tender point count	Single-leg standing balance (s): 10-29 vs. 30	WOMAC: physical function	Cox regression	1.12 (0.80; 1.55)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	BMI, anxiety, duration of morning stiffness, bilateral knee pain, age, inactivity gelling, local tender point count	Single-leg standing balance (s): 4-9 vs. 30	WOMAC: physical function	Cox regression	1.22 (0.88; 1.67)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	BMI, anxiety, duration of morning stiffness, bilateral knee pain, age, inactivity gelling, local tender point count	Single-leg standing balance (s): <4 vs. 30	WOMAC: physical function	Cox regression	1.21 (0.85; 1.72)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Local tender point count	Single-leg standing balance (s): 10-29 vs. 30	WOMAC: physical function	Cox regression	1.27 (0.92; 1.74)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Local tender point count	Single-leg standing balance (s): 4-9 vs. 30	WOMAC: physical function	Cox regression	**1.50 (1.12; 2.01)**
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Local tender point count	Single-leg standing balance (s): <4 vs. 30	WOMAC: physical function	Cox regression	**1.49 (1.09; 2.04)**

Bold- statistically significant results

Appendix Table F35. Association between intermediate outcomes and disability

Author, year Study characteristics	Intermediate outcome	Regression model	Outcomes	Regression model	Regression coefficient (95% CI)
van Baar, 1998[379] Country: The Netherlands Age: NR Sample: 185	Pain coping: worrying, resting; range of motion; medication: NSAID; age	Muscle strength	Observed disability determined by studying videos of the patients' performance of a series of standardized tasks using an adaptation of the method described by Keefe	linear	**-0.24 P value ≤0.01**
van Baar, 1998[379] Country: The Netherlands Age: NR Sample: 185	Pain coping: resting; range of motion; pain	Muscle strength	Self-reported disability-IRGL, mobility subscale	linear	**-0.22 P value ≤0.01**
van Baar, 1998[379] Country: The Netherlands Age: NR Sample: 185	Pain coping: worrying, resting; muscle strength; medication: NSAID; age	Range of Motion	Observed disability determined by studying videos of the patients' performance of a series of standardized tasks using an adaptation of the method described by Keefe	linear	**-0.27 P value ≤0.01**
van Baar, 1998[379] Country: The Netherlands Age: NR Sample: 185	Pain coping: resting; muscle strength; pain	Range of motion	Self-reported disability-IRGL, mobility subscale	linear	**-0.28 P value ≤0.01**
Clark, 1998[380] Country: USA Age: >40 Sample: 415	Education, employment, comorbidity, crepitus, bony enlargement, joint tenderness	Osteoarthritis of the Knee Severity Index	SF-36: Role function with physical limitations	linear	**-1.19 P value <0.001**
Clark, 1998[380] Country: USA Age: >40 Sample: 415	Age, education, comorbidity, crepitus, employment, bony enlargement	Joint tenderness	SF-36: Physical function	linear	1.07 P value 0.69
Clark, 1998[380] Country: USA Age: >40 Sample: 415	Age, education, comorbidity, crepitus, employment, bony enlargement	Joint tenderness	SF-36: Role function with physical limitations	linear	-0.84 P value 0.83

Appendix Table F35. The association between intermediate outcomes and disability (continued)

Author, year Study characteristics	Intermediate outcome	Regression model	Outcomes	Regression model	Regression coefficient (95% CI)
van Baar, 1998[379] Country: The Netherlands Age: NR Sample: 185	Pain coping: resting; muscle strength; range of motion	Pain	Self-reported disability-IRGL, mobility subscale	linear	0.21 P value ≤0.05
van Baar, 1998[379] Country: The Netherlands Age: NR Sample: 185	Pain coping: worrying; muscle strength; medication: NSAID; age; range of motion	Pain coping: resting	Observed disability determined by studying videos of the patients' performance of a series of standardized tasks using an adaptation of the method described by Keefe	linear	**0.21 P value ≤0.01**
van Baar, 1998[379] Country: The Netherlands Age: NR Sample: 185	Pain; muscle strength; range of motion	Pain coping: resting	Self-reported disability-IRGL, mobility subscale	linear	**0.26 P value ≤0.01**
van Baar, 1998[379] Country: The Netherlands Age: NR Sample: 185	Pain coping: resting; muscle strength; medication: NSAID; age; range of motion	Pain coping: worrying	Observed disability determined by studying videos of the patients' performance of a series of standardized tasks using an adaptation of the method described by Keefe	linear	**0.20 P value ≤0.05**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Self-efficacy (measured by the Functional Self-Efficacy subscale of the Arthritis Self-Efficacy Scale)	ROM	Self-reported limitations	linear	**0.252, P value <0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Age, sex, BMI, anxiety, depression, MVC, activation, radiographic score	ROM	Self-reported limitations	linear	**0.153, P value <0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Age, sex, BMI, anxiety, depression, MVC, radiographic score	ROM	Self-reported limitations	linear	**0.133, P value <0.05**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Age, sex, BMI, depression, anxiety, radiographic score	ROM hip internal rotation	Self-reported limitations	linear	**0.153, P value <0.05**

Appendix Table F35. The association between intermediate outcomes and disability (continued)

Author, year Study characteristics	Intermediate outcome	Regression model	Outcomes	Regression model	Regression coefficient (95% CI)
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Age, sex, BMI, depression, anxiety, MVC, radiographic score	ROM hip internal rotation	Self-reported limitations	linear	0.044, P value NR
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Age, sex, BMI, depression, anxiety, MVC, radiographic score	ROM hip internal rotation	Self-reported limitations	linear	0.041, P value NR
Maly, 2006[382] Country: Canada Age: >50 Sample: 54	Age, sex, BMI, depression, anxiety, MVC, radiographic score	Peak knee extension angle (o)	SF-36 (disability)	linear	**-6.42, P value 0.001**
Maly, 2006[382] Country: Canada Age: >50 Sample: 54	Age, sex, BMI, depression, anxiety, radiographic score	Range knee flexion/extension angle (o)	SF-36 (disability)	linear	**3.04, P value 0.021**
Steultjens, 2000[364] Country: The Netherlands Age: NR Sample: 198	Age, sex, BMI, depression, anxiety, MVC, radiographic score	Knee flexion (ROM)	Observed disability	linear	-0.154, P value NR
Steultjens, 2000[364] Country: The Netherlands Age: NR Sample: 198	Age, sex, BMI, depression, anxiety, radiographic score	Hip extension (ROM)	Observed disability	linear	**-0.201, P value <0.05**
Steultjens, 2000[364] Country: The Netherlands Age: NR Sample: 198	Age, sex, BMI, depression, anxiety, MVC, radiographic score	Hip abduction (ROM)	Observed disability	linear	-0.186, P value NR
Steultjens, 2000[364] Country: The Netherlands Age: NR Sample: 198	Age, sex, BMI, depression, anxiety, MVC, radiographic score	Hip external rotation (ROM)	Observed disability	linear	**-0.224, P value <0.05**

Appendix Table F35. The association between intermediate outcomes and disability (continued)

Author, year Study characteristics	Intermediate outcome	Regression model	Outcomes	Regression model	Regression coefficient (95% CI)
Steultjens, 2000[364] Country: The Netherlands Age: NR Sample: 198	Age, sex, BMI, depression, anxiety, MVC, radiographic score	Knee flexion (ROM)	Self-reported disability	linear	**-0.195, P value <0.05**
Steultjens, 2000[364] Country: The Netherlands Age: NR Sample: 198	NR	Hip extension (ROM)	Self-reported disability	linear	**-0.279, P value <0.01**
Steultjens, 2000[364] Country: The Netherlands Age: NR Sample: 198	NR	Hip external rotation (ROM)	Self-reported disability	linear	**-0.331, P value <0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	NR	ROM hip flexion	Performance -based limitations	linear, standardized beta coefficient	**-0.21, P value <0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	NR	ROM hip flexion	Self-reported limitations in activities	linear, standardized beta coefficient	**0.376, P value <0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	NR	ROM hip flexion	Performance -based limitations in activities	linear, standardized beta coefficient	**-0.401, P value <0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	NR	ROM hip internal rotation	Self-reported limitations in activities	linear, standardized beta coefficient	**0.246, P value <0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	NR	ROM hip internal rotation	Performance -based limitations in activities	linear, standardized beta coefficient	**-0.125, P value <0.05**

Appendix Table F35. The association between intermediate outcomes and disability (continued)

Author, year Study characteristics	Intermediate outcome	Regression model	Outcomes	Regression model	Regression coefficient (95% CI)
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Muscle strength	ROM hip external rotation	Self-reported limitations in activities	linear, standardized beta coefficient	**0.175, P value <0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Muscle strength, pain	ROM hip external rotation	Performance -based limitations in activities	linear, standardized beta coefficient	**-0.238, P value <0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Muscle strength, pain, cognitive functioning	ROM knee flexion	Self-reported limitations in activities	linear, standardized beta coefficient	**0.204, P value <0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Muscle strength, pain, cognitive functioning, age/BMI	ROM knee flexion	Performance -based limitations in activities	linear, standardized beta coefficient	**-0.296, P value <0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Muscle strength	ROM knee extension	Self-reported limitations in activities	linear, standardized beta coefficient	-0.008, P value NR
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Muscle strength, pain	ROM knee extension	Performance -based limitations in activities	linear, standardized beta coefficient	**-0.246, P value <0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Unadjusted	Muscle strength knee extension	Self-reported limitations	linear	**0.215, P value <0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Unadjusted	Muscle strength knee extension	Self-reported limitations	linear	**0.136, P value <0.01**

Appendix Table F35. The association between intermediate outcomes and disability (continued)

Author, year Study characteristics	Intermediate outcome	Regression model	Outcomes	Regression model	Regression coefficient (95% CI)
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Unadjusted	Muscle strength knee extension	Self-reported limitations	linear	**0.128, P value <0.01**
O'Reilly, 1998[378] Country: UK Age: >40 Sample: 300 each of cases and controls	Unadjusted	MVC (Maximum voluntary contraction of quadriceps) (kgF): >30	Disability (WOMAC function score >19)	logistic	1.00 (1.00; 1.00) reference
O'Reilly, 1998[378] Country: UK Age: >40 Sample: 300 each of cases and controls	Unadjusted	MVC (Maximum voluntary contraction of quadriceps) (kgF): 20-30	Disability (WOMAC function score >19)	logistic	1.48 (0.37; 5.93)
O'Reilly, 1998[378] Country: UK Age: >40 Sample: 300 each of cases and controls	Unadjusted	MVC (Maximum voluntary contraction of quadriceps) (kgF): 10-20	Disability (WOMAC function score >19)	logistic	**4.88 (1.18; 20.14)**
O'Reilly, 1998[378] Country: UK Age: >40 Sample: 300 each of cases and controls	Unadjusted	MVC (Maximum voluntary contraction of quadriceps) (kgF): <=10	Disability (WOMAC function score >19)	logistic	**8.23 (1.53; 44.38)**
O'Reilly, 1998[378] Country: UK Age: >40 Sample: 300 each of cases and controls	Unadjusted	MVC (Maximum voluntary contraction) (kgF): >40	Disability (SF-36 function score <90)	logistic	1.00 (1.00; 1.00) reference
O'Reilly, 1998[378] Country: UK Age: >40 Sample: 300 each of cases and controls	Self-efficacy (measured by the Functional Self-Efficacy subscale of the Arthritis Self-Efficacy Scale)	MVC (Maximum voluntary contraction) (kgF): 30 -40	Disability (SF-36 function score <90)	logistic	3.04 (0.86; 10.71)

Appendix Table F35. The association between intermediate outcomes and disability (continued)

Author, year Study characteristics	Intermediate outcome	Regression model	Outcomes	Regression model	Regression coefficient (95% CI)
O'Reilly, 1998[378] Country: UK Age: >40 Sample: 300 each of cases and controls	NR	MVC (Maximum voluntary contraction) (kgF): 20-30	Disability (SF-36 function score <90)	logistic	**3.77 (1.02; 13.91)**
O'Reilly, 1998[378] Country: UK Age: >40 Sample: 300 each of cases and controls	NR	MVC (Maximum voluntary contraction) (kgF): <=20	Disability (SF-36 function score <90)	logistic	**4.98 (1.08; 22.97)**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Age, sex, BMI, depression, anxiety, activation (%), radiographic score	Muscle strength hip abduction	Performance -based limitations	linear	**-0.184, P value <0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Age, sex, BMI, depression, anxiety, activation (%), radiographic score	Muscle strength hip abduction	Performance -based limitations	linear	**-0.174, P value <0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Age, sex, BMI, depression, anxiety, activation (%), radiographic score	Muscle strength hip abduction	Performance -based limitations	linear	**-0.186, P value <0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Age, sex, BMI, depression, anxiety, activation (%), radiographic score	Muscle strength hip abduction	Performance -based limitations	linear	**-0.17, P value <0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Age, sex, BMI, depression, anxiety, activation (%), radiographic score	Muscle strength hip abduction	Self-reported limitations in activities	linear	**0.318, P value <0.01**

Appendix Table F35. The association between intermediate outcomes and disability (continued)

Author, year Study characteristics	Intermediate outcome	Regression model	Outcomes	Regression model	Regression coefficient (95% CI)
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Age, sex, BMI, depression, anxiety, activation (%), radiographic score	Muscle strength hip abduction	Performance -based limitations in activities	linear	**-0.356, P value <0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Age, sex, BMI, depression, anxiety, activation (%), radiographic score	Muscle strength knee extension	Self-reported limitations in activities	linear	**0.306, P value <0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	NR	Muscle strength knee extension	Performance -based limitations in activities	linear	**-0.274, P value <0.01**

Bold- statistically significant results

Appendix Table F36. Association between joint mobility and functional performance

Author, year Study characteristics	Adjustment	Joint mobility measure	Functional outcome	Regression model	Mean (95% CI)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Bilateral knee pain, inactivity gelling	Duration of morning stiffness (min): ≤30 vs. none	WOMAC: physical function	cox regression	**1.47 (1.13; 1.89)**
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Bilateral knee pain, inactivity gelling	Duration of morning stiffness (min): >30 vs. none	WOMAC: physical function	cox regression	1.55 (0.99; 2.43)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	BMI, anxiety, inactivity gelling, bilateral knee pain,age	Duration of morning stiffness(min): ≤30 vs. none	WOMAC: physical function	cox regression	**1.32 (1.01; 1.73)**
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	BMI, anxiety, inactivity gelling, bilateral knee pain,age, local tender point count, single-leg standing balance	Duration of morning stiffness(min): ≤30 vs. none	WOMAC: physical function	cox regression	1.25 (0.95; 1.65)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	BMI, anxiety, inactivity gelling, bilateral knee pain,age, local tender point count, single-leg standing balance, prevalent knee radiographic OA	Duration of morning stiffness(min): ≤30 vs. none	WOMAC: physical function	cox regression	1.25 (0.95; 1.65)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	BMI, anxiety, inactivity gelling, bilateral knee pain,age	Duration of morning stiffness(min): ≥30 vs. none	WOMAC: physical function	cox regression	1.22 (0.75; 2.00)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	BMI, anxiety, inactivity gelling, bilateral knee pain,age, local tender point count, single-leg standing balance	Duration of morning stiffness(min): ≥30 vs. none	WOMAC: physical function	cox regression	1.15 (0.70; 1.89)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	BMI, anxiety, inactivity gelling, bilateral knee pain,age, local tender point count, single-leg standing balance, prevalent knee radiographic OA	Duration of morning stiffness(min): ≥30 vs. none	WOMAC: physical function	cox regression	1.16 (0.70; 1.91)

Appendix Table F36. Association between joint mobility and functional performance (continued)

Author, year Study characteristics	Adjustment	Joint mobility measure	Functional outcome	Regression model	Mean (95% CI)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Unadjusted	Hip rotation: Either Internal or external rotation ≤23° vs. ≥23°	WOMAC: physical function	cox regression	1.17 (0.90; 1.51)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Unadjusted	Hip rotation: Internal and external rotation <23° vs. ≥23°	WOMAC: physical function	cox regression	1.16 (0.81; 1.68)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Bilateral knee pain, duration of morning stiffness	Inactivity gelling: Yes vs. No	WOMAC: physical function	cox regression	1.34 (0.98; 1.83)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	BMI, anxiety, duration of morning stiffness, bilateral knee pain,age	Inactivity gelling: Yes vs. No	WOMAC: physical function	cox regression	1.23 (0.89; 1.71)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	BMI, anxiety, duration of morning stiffness, bilateral knee pain,age, local tender point count, single-leg standing balance	Inactivity gelling: Yes vs. No	WOMAC: physical function	cox regression	1.19 (0.86; 1.66)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	BMI, anxiety, duration of morning stiffness, bilateral knee pain,age, local tender point count, single-leg standing balance, prevalent knee radiographic OA	Inactivity gelling: Yes vs. No	WOMAC: physical function	cox regression	1.19 (0.85; 1.65)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Unadjusted	Knee flexion Range of movement: < 120° vs. >=120°	WOMAC: physical function	cox regression	1.30 (0.98; 1.71)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Unadjusted	Locking: Pseudo-locking vs. no	WOMAC: physical function	cox regression	1.12 (0.81; 1.57)

Appendix Table F36. Association between joint mobility and functional performance (continued)

Author, year Study characteristics	Adjustment	Joint mobility measure	Functional outcome	Regression model	Mean (95% CI)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Unadjusted	Locking: True locking vs. no	WOMAC: physical function	cox regression	1.36 (0.68; 2.74)

Bold- statistically significant results

Appendix Table F37. Association between joint stability and alignment with functional performance

Author, year Study characteristics	Adjustment	Joint stability and alignment measure	Functional outcome	Regression model	Mean (95% CI)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Unadjusted	Giving way: Yes vs. No	WOMAC: physical function	cox regression	**1.33 (1.08; 1.64)**
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Unadjusted	Anteroposterior instability: Possible/definite vs. none	WOMAC: physical function	cox regression	0.85 (0.60; 1.20)
Kauppila, 2009[383] Country: Finland Age: >60 Sample: 88	BMI, gender, comorbidity, flexion and extension RPT (relative peak torque) of the affected lege, stair test, 15m walk-test, WOMAC pain, malalignments, restricted ROM, and previous surgery of the lower extremity	Antero-posterior laxity (knee instability) of the knee	WOMAC function	linear	**11.30 (3.21; 19.35)**
Kauppila, 2009[383] Country: Finland Age: >60 Sample: 88	BMI, gender, comorbidity, flexion and extension RPT (relative peak torque) of the affected lege, stair test, 15m walk-test, WOMAC pain, malalignments, restricted ROM, and previous surgery of the lower extremity, antero-posterior laxity (knee instability)	Antero-posterior laxity (knee instability) of the knee and WOMAC pain	WOMAC function	linear	**-0.53 (-0.94; -0.13)**
Van Der Esch, 2006[372] Country: The Netherlands Age: >40 Sample: 86	NR	Joint laxity (knee instability)	WOMAC physical function	linear	**-1.04 (-1.84; -0.24)**
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Unadjusted	Intercondylar gap in standing (cm): >0 vs. 0	WOMAC: physical function	cox regression	0.93 (0.72; 1.19)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Unadjusted	Intermalleolar gap in standing (cm): >0 vs. 0	WOMAC: physical function	cox regression	1.16 (0.93; 1.43)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Unadjusted	Fixed flexion deformity: Yes vs. no	WOMAC: physical function	cox regression	1.09 (0.80; 1.48)

Appendix Table F37. Association between joint stability and alignment with functional performance (continued)

Author, year Study characteristics	Adjustment	Joint stability and alignment measure	Functional outcome	Regression model	Mean (95% CI)
Hunt, 2010[373] Country: NR Age: NR Sample: 57	Disease severity, Symptoms(bilateral vs. unilateral), WOMAC pain, Quadriceps torque	Lower extremity alignment	Balance performance (center of pressure path length)	linear	**-2.73 (-4.74; -0.72)**
Sharma, 2003[375] Country: USA Age: NR Sample: 257	Age, BMI, knee pain intensity, and disease severity (higher K/L grade of the 2 knees)	Laxity (knee instability), degrees	WOMAC function scale	logistic	**1.58/30 (1.04; 2.40)**

Bold- statistically significant results

Appendix Table F38. Association between pain with poor functional status

Author, year Study characteristics	Adjustment	Independent measure	Functional outcome	Regression Model	Regression coefficient (95% CI)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Unadjusted	Patellofemoral joint compression: Glide pain vs. no pain	Poor WOMAC functional outcome	cox regression	1.29 (0.99; 1.70)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Unadjusted	Incident pain: Yes vs. No	Poor WOMAC functional outcome	cox regression	1.24 (0.97; 1.53)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Unadjusted	Bilateral knee pain :Yes vs. No	Poor WOMAC functional outcome	cox regression	**1.46 (1.12; 1.90)**
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	BMI, anxiety, inactivity gelling, duration of morning stiffness, age, local tender point count, single-leg standing balance, prevalent knee radiographic OA	Bilateral knee pain :Yes vs. No	Poor WOMAC functional outcome	cox regression	1.14 (0.86; 1.51)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	BMI, anxiety, chronic pain grade, inactivity gelling, Bilateral knee pain, duration of morning stiffness, age, local tender point count, single-leg standing balance, prevalent knee radiographic OA	Chronic pain grade: II vs. I	Poor WOMAC functional outcome	cox regression	1.19 (0.92; 1.54)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	BMI, anxiety, chronic pain grade, inactivity gelling, Bilateral knee pain, duration of morning stiffness, age, local tender point count, single-leg standing balance, prevalent knee radiographic OA	Chronic pain grade: III vs. I	Poor WOMAC functional outcome	cox regression	1.34 (0.93; 1.92)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	BMI, anxiety, chronic pain grade, inactivity gelling, Bilateral knee pain, duration of morning stiffness, age, local tender point count, single-leg standing balance, prevalent knee radiographic OA	Chronic pain grade: IV vs. I	Poor WOMAC functional outcome	cox regression	1.15 (0.78; 1.70)
Kauppila, 2009[383] Country: Finland Age: >60 Sample: 88	BMI, gender, comorbidity, flexion and extension RPT (relative peak torque) of the affected lege, stair test, 15m walk-test, antero-posterior laxity (knee instability), malalignments, restricted ROM, and previous surgery of the lower extremity	WOMAC pain	Poor WOMAC functional outcome	linear	**0.68 (0.52; 0.84)**

Appendix Table F38. Association between pain with poor functional status (continued)

Author, year Study characteristics	Adjustment	Independent measure	Functional outcome	Regression Model	Regression coefficient (95% CI)
Hunt, 2010[373] Country: NR Age: NR Sample: 57	Disease severity, Symptoms(bilateral vs. unilateral), Lower extremity alignment, Quadriceps torque	WOMAC pain	Balance performance (center of pressure path length)	linear	**2.57 (0.86; 4.29)**
Rejeski, 1998[190] Country: USA Age: NR Sample: 439	Baseline self-efficacy, 18-month knee pain, 18-month self-efficacy, baseline stair climb time	Baseline knee pain	Effect of treatment on stair climb time	linear	-0.48 (-1.21; 0.25)
Wolfe, 1999[384] Country: USA Age: NR Sample: 2115	Age, sex	Back pain	WOMAC stiffness	linear	**0.90 (0.08; 1.72)**
Jadelis, 2001[374] Country: USA Age: >65 Sample: 480	Radiographic score, BMI, gender, foot length, knee strength, ankle strength, pain*knee interaction	Pain (knee pain scale)	Anteroposterior dynamic balance	linear	-0.07 P-value =0.120
van Baar, 1998[379] Country: The Netherlands Age: NR Sample: 185	Pain coping: retreating	Psychological well being: Cheerfulness	Pain (VAS)	linear	-0.21 P value <=0.05
Clark, 1998[380] Country: USA Age: >40 Sample: 415	Education, employment, comorbidity, crepitus, bony enlargement, joint tenderness	Osteoarthritis of the Knee Severity Index	SF-36: Bodily pain	linear	**-1.14** **P value <0.001**
Clark, 1998[380] Country: USA Age: >40 Sample: 415	Age, education, comorbidity, crepitus, employment, bony enlargement	Joint tenderness	SF-36: Bodily pain	linear	-1.88 P value 0.38
van Baar, 1998[379] Country: The Netherlands Age: NR Sample: 185	Cheerfulness	Pain coping: Retreating	Pain (VAS)	linear	**0.36** **P value ≤0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Aage, sex, BMI, depression, MVC, activation, radiographic score	VAS pain	Self-reported limitations	linear	**-0.595,** **P value <0.01**

Appendix Table F38. Association between pain with poor functional status (continued)

Author, year Study characteristics	Adjustment	Independent measure	Functional outcome	Regression Model	Regression coefficient (95% CI)
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Age, sex, BMI, anxiety, MVC, activation (%), radiographic score	VAS pain	Self-reported limitations	linear	**-0.576, P value <0.01**
Maly, 2006[382] Country: Canada Age: >50 Sample: 54	Age, sex, BMI, anxiety, MVC, activation (%), radiographic score	Pain	SF-36 (disability)	linear	**-0.52, P value 0.001**
Topp, 2000[369] Country: ?USA Age: NR Sample: 78	Age, sex, BMI, anxiety, MVC, activation, radiographic score	Pain when getting down to the floor	Time to get down to the floor	linear	**-1.35, P value 0**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Age, sex, BMI, anxiety, MVC, activation, radiographic score	VAS pain	Performance -based limitations	linear	**0.156, P value <0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	Age, sex, BMI, anxiety, MVC, activation, radiographic score	VAS pain	Performance -based limitations	linear	**0.134, P value <0.05**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	NR	VAS pain	Performance -based limitations	linear	**0.161, P value <0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	NR	VAS pain	Self-reported limitations in activities	linear	**-0.675, P value <0.01**
van Dijk, 2009[381] Country: The Netherlands Age: >50 Sample: 288	NR	VAS pain	Performance -based limitations in activities	linear	**0.296, P value <0.01**

Appendix Table F38. Association between pain with poor functional status (continued)

Author, year Study characteristics	Adjustment	Independent measure	Functional outcome	Regression Model	Regression coefficient (95% CI)
Maly, 2007[376] Country: Canada Age: >50 Sample: 54	NR	Pain	Walking performance (Six Minute Walk test)	linear	-0.13 (-0.42; 0.16)
O'Reilly, 1998[378] Country: UK Age: >40 Sample: 300 each of cases and controls	NR	WOMAC pain score	WOMAC function	linear	**0.44 (0.05; 0.83)**

Bold- statistically significant results

Appendix Table F39. Association between intermediate outcomes with pain and physical performance

Author, year Study characteristics	Adjustment	Independent measure	Clinical outcomes	Regression Model	Regression coefficient (95% CI)
Rejeski, 1998[190] Country: USA Age: NR Sample: 439	18-month knee pain, baseline GHS(general health status) scores, aerobic, resistance training	Baseline knee pain KPS (Knee Pain Scale)	Effect of treatment on health perception using RAND 36-item health survey	linear	**3.28 (1.22; 5.34)**
Rejeski, 1998[190] Country: USA Age: NR Sample: 439	18-month knee pain, baseline knee pain, aerobic, resistance training	Baseline GHS scores	Effect of treatment on health perception using RAND 36-item health survey	linear	**0.74 (0.66; 0.82)**
Harrison, 2004[358] Country: USA Age: >50 Sample: 50	Functional self-efficacy	WOMAC pain scale	Poor WOMAC functional outcome	linear	**0.63 p-value<0.001**
Harrison, 2004[358] Country: USA Age: >50 Sample: 50	Functional self-efficacy	Balance	Timed measurements of 3 functions summed to provide a final physical performance score (in seconds): 1) walking 20m, 2)climbing up and down 9 stairs, and 3)going from sitting to standing for 5 repetitions	linear	**-0.48 p-value<0.001**
Harrison, 2004[358] Country: USA Age: >50 Sample: 50	Balance	Functional self-efficacy (Arthritis Self-Efficacy Scale)	Timed measurements of 3 functions summed to provide a final physical performance score (in seconds): 1) walking 20m, 2)climbing up and down 9 stairs, and 3)going from sitting to standing for 5 repetitions	linear	**-0.27 p-value <0.05**
Van Der Esch, 2006[372] Country: The Netherlands Age: >40 Sample: 86	NR	Joint laxity (knee instability)	Walking time	linear	0.70 (-0.38; 1.78)
Harrison, 2004[358] Country: USA Age: >50 Sample: 50	Pain	Functional self-efficacy (Arthritis Self-Efficacy Scale)	WOMAC function scale	linear	**0.34 p-value <0.001**
Wolfe, 1999[384] Country: USA Age: NR Sample: 2115	Age, sex	Fatigue	WOMAC pain	linear	**4.85 (3.69; 6.01)**

Appendix Table F39. Association between intermediate outcomes with pain and physical performance (continued)

Author, year Study characteristics	Adjustment	Independent measure	Clinical outcomes	Regression Model	Regression coefficient (95% CI)
Wolfe, 1999[384] Country: USA Age: NR Sample: 2115	Age, sex	Depression	WOMAC pain	linear	**0.95 (0.52; 1.38)**
Astephen Wilson, 2011[385] Country: Canada Age: >35 Sample: 40	NR	Gait speed	WOMAC pain severity	linear	**-10.20 (-15.30; -5.10)**
Clark, 1998[380] Country: USA Age: >40 Sample: 415	Education, employment, comorbidity, crepitus, bony enlargement, joint tenderness	Osteoarthritis of the Knee Severity Index	SF-36: Physical function	linear	**-1.36 P value <0.001**
Sharma, 2003[375] Country: USA Age: NR Sample: 257	Age, BMI, and disease severity (higher K/L grade of the 2 knees)	0-18 month increase in knee pain intensity, mm on VAS	WOMAC function scale	logistic	**1.48/20 mm (1.12; 1.95)**
Sharma, 2003[375] Country: USA Age: NR Sample: 257	Age, BMI, and disease severity (higher K/L grade of the 2 knees)	Knee pain intensity, mm on VAS	WOMAC function scale	logistic	1.12/20 mm (0.90; 1.40)
Clark, 1998[380] Country: USA Age: >40 Sample: 415	Education, employment, comorbidity, crepitus, bony enlargement, joint tenderness	Osteoarthritis of the Knee Severity Index	SF-36: General health perceptions	linear	**-0.53** P value <0.001
Clark, 1998[380] Country: USA Age: >40 Sample: 415	Age, education, comorbidity, crepitus, employment, bony enlargement	Joint tenderness	SF-36: General health perceptions	linear	2.21 P value 0.31

Bold- statistically significant results.

Appendix Table F40. Association between pain and functional performance

Author, year Study characteristics	Adjustment	Pain measure	Functional outcome	Regression model	Mean (95%CI)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	BMI, anxiety, duration of morning stiffness, bilateral knee pain, age, inactivity gelling, single-leg standing balance, prevalent knee radiographic OA	Local tender point count:1 vs. 0	WOMAC: physical function	cox regression	1.15 (0.83; 1.58)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	BMI, anxiety, duration of morning stiffness, bilateral knee pain, age, inactivity gelling, single-leg standing balance, prevalent knee radiographic OA	Local tender point count:2 vs. 0	WOMAC: physical function	cox regression	1.33 (0.97; 1.83)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	BMI, anxiety, duration of morning stiffness, bilateral knee pain, age, inactivity gelling, single-leg standing balance, prevalent knee radiographic OA	Local tender point count:3 vs. 0	WOMAC: physical function	cox regression	1.33 (0.94; 1.86)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	BMI, anxiety, duration of morning stiffness, bilateral knee pain, age, inactivity gelling, single-leg standing balance, prevalent knee radiographic OA	Local tender point count:4-6 vs. 0	WOMAC: physical function	cox regression	1.25 (0.89; 1.76)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Single-leg standing balance	Local tender point count:1 vs. 0	WOMAC: physical function	cox regression	1.16 (0.84; 1.58)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Single-leg standing balance	Local tender point count:2 vs. 0	WOMAC: physical function	cox regression	**1.45 (1.06; 1.96)**
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Single-leg standing balance	Local tender point count:3 vs. 0	WOMAC: physical function	cox regression	**1.54 (1.12; 2.12)**
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Single-leg standing balance	Local tender point count:4-6 vs. 0	WOMAC: physical function	cox regression	**1.48 (1.07; 2.04)**

Bold- statistically significant results

Appendix Table F41. Association between intermediate outcomes and Adjusted Activity Score (derived by subtraction of the number of activities the participant is no longer able to perform from the value of the MAS, and reflective of an individual's typical daily physical activities)

Author, year Study characteristics	Adjustment	Intermediate outcome	Regression model	Regression coefficient (95% CI)
Bennell, 2004[368] Country: Australia Age: >50 Sample: 259	NR	VAS: restriction	linear	**-1.46 (-2.03; -0.88)**
Bennell, 2004[368] Country: Australia Age: >50 Sample: 259	NR	TUG test	linear	**-0.83 (-1.34; -0.33)**
Bennell, 2004[368] Country: Australia Age: >50 Sample: 259	NR	Step test	linear	**0.58 (0.11; 1.06)**
Bennell, 2004[368] Country: Australia Age: >50 Sample: 259	NR	Walking speed	linear	**13.28 (6.23; 20.33)**

Bold- statistically significant results

Appendix Table F42. Association between intermediate outcomes and doctor indication for patients to undergo total joint replacement within a year after consultation

Author, year Study characteristics	Intermediate outcome	Regression model	Regression coefficient (95% CI)
Boutron, 2008[386] Country: France Age: >45 Sample: 4121	Lequesne score (>severity threshold)	logistic	**2.36 (1.71; 3.26)**
Boutron, 2008[386] Country: France Age: >45 Sample: 4121	Number of days with pain per month (10 days)	logistic	**1.39 (1.10; 1.75)**
Boutron, 2008[386] Country: France Age: >45 Sample: 4121	SF-36 PCS (measures HRQoL)	logistic	0.97 (0.95; 0.99)
Boutron, 2008[386] Country: France Age: >45 Sample: 4121	Number of days with disability per month (10 days)	logistic	**1.50 (1.19; 1.91)**
Boutron, 2008[386] Country: France Age: >45 Sample: 4121	Patients' opinion of their disability (moderate/severe)	logistic	**1.57 (1.01; 2.20)**

Bold- statistically significant results; underlined-large magnitude of the association

Appendix Table F43. Association between self reported health outcomes and poor functional status

Author, year Study characteristics	Adjustment	Intermediate outcome	Clinical outcome	Regression model	Regression coefficient (95% CI)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Unadjusted	Self-reported swelling in past month: Yes vs. No	Poor WOMAC functional outcome	Cox regression	**1.27 (1.03; 1.56)**
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	Unadjusted	Self-reported dramatic swelling: Yes vs. No	Poor WOMAC functional outcome	Cox regression	1.09 (0.83; 1.44)
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	BMI, age, chronic pain grade, inactivity gelling, Bilateral knee pain, duration of morning stiffness, local tender point count, single-leg standing balance, prevalent knee radiographic OA	Anxiety (0-21): Possible (8-11) vs. none (0-7)	Poor WOMAC functional outcome	Cox regression	**1.29 (1.01; 1.64)**
Thomas, 2008[371] Country: UK Age: >50 Sample: 621	BMI, age, chronic pain grade, inactivity gelling, Bilateral knee pain, duration of morning stiffness, local tender point count, single-leg standing balance, prevalent knee radiographic OA	Anxiety (0-21): Probable (12-21) vs. none (0-7)	Poor WOMAC functional outcome	Cox regression	1.31 (0.94; 1.82)
Rejeski, 1998[190] Country: USA Age: NR Sample: 439	Baseline knee pain, 18-month knee pain, 18-month self-efficacy, baseline stair climb time	Baseline Self-efficacy	Effect of treatment on stair climb time	linear	**0.02 (0.001; 0.04)**
Wolfe, 1999[384] Country: USA Age: NR Sample: 2115	Age, sex	Depression	WOMAC function	linear	**3.30 (1.85; 4.75)**
Wolfe, 1999[384] Country: USA Age: NR Sample: 2115	Age, sex	Depression	WOMAC stiffness	linear	**0.27 (0.07; 0.47)**
Wolfe, 1999[384] Country: USA Age: NR Sample: 2115	Age, sex	Fatigue	WOMAC stiffness	linear	**2.19 (1.64; 2.74)**

Appendix Table F43. Association between self reported health outcomes and poor functional status (continued)

Author, year Study characteristics	Adjustment	Intermediate outcome	Clinical outcome	Regression model	Regression coefficient (95% CI)
Wolfe, 1999[384] Country: USA Age: NR Sample: 2115	Age, sex	Fatigue	WOMAC function	linear	**17.58 (13.62; 21.54)**
Sharma, 2003[375] Country: USA Age: NR Sample: 257	Age, BMI, knee pain intensity, and disease severity (higher K/L grade of the 2 knees)	Mental health score	WOMAC function scale	logistic	**0.58/5 points (0.39; 0.86)**
Sharma, 2003[375] Country: USA Age: NR Sample: 257	Age, BMI, knee pain intensity, and disease severity (higher K/L grade of the 2 knees)	Role functioning emotional score	Chair-stand performance (Time required for 5 repetitions of rising from a chair and sitting down, using the protocol.	logistic	0.99/1 unit (0.75; 1.32)
Sharma, 2003[375] Country: USA Age: NR Sample: 257	Age, BMI, knee pain intensity, and disease severity (higher K/L grade of the 2 knees)	Self-efficacy score	WOMAC function scale	logistic	**0.80/5 points (0.65; 0.98)**
Sharma, 2003[375] Country: USA Age: NR Sample: 257	Age, BMI, knee pain intensity, and disease severity (higher K/L grade of the 2 knees)	Self-efficacy score	Chair-stand performance (Time required for 5 repetitions of rising from a chair and sitting down, using the protocol	logistic	0.86/5 points (0.68; 1.09)
Sharma, 2003[375] Country: USA Age: NR Sample: 257	Age, BMI, knee pain intensity, and disease severity (higher K/L grade of the 2 knees)	Social support scale	WOMAC function scale	logistic	**0.85/10 points (0.73; 0.98)**
O'Reilly, 1998[378]Country: UK Age: >40 Sample: 300 each of cases and controls	Age, sex, BMI, depression, MVC, activation (%), radiographic score	Anxiety: HAD score >=8 vs. <8	Disability (WOMAC function score >19)	logistic	1.91 (0.89; 4.05)
O'Reilly, 1998[378] Country: UK Age: >40 Sample: 300 each of cases and controls	Age, sex, BMI, depression, MVC, activation (%), radiographic score	Anxiety: HAD score >=8 vs. <8	Disability (SF-36 function score <90)	logistic	2.04 (0.95; 4.36)
O'Reilly, 1998[378] Country: UK Age: >40 Sample: 300 each of cases and controls	Age, sex, BMI, depression, MVC, activation, radiographic score	Anxiety	WOMAC function	linear	**0.43 (0.08; 0.78)**

Appendix Table F43. Association between self reported health outcomes and poor functional status (continued)

Author, year Study characteristics	Adjustment	Intermediate outcome	Clinical outcome	Regression model	Regression coefficient (95% CI)
O'Reilly, 1998[378] Country: UK Age: >40 Sample: 300 each of cases and controls	Age, sex, BMI, anxiety, MVC, activation (%), radiographic score	Depression: HAD score ≥8 vs. <8	Disability (WOMAC function score >19)	logistic	**6.15 (2.10; 17.98)**
O'Reilly, 1998[378] Country: UK Age: >40 Sample: 300 each of cases and controls	Age, sex, BMI, anxiety, MVC, activation (%), radiographic score	Depression: HAD score ≥8 vs. <8	Disability (SF-36 function score <90)	logistic	8.27 (0.91; 83.94)
O'Reilly, 1998[378] Country: UK Age: >40 Sample: 300 each of cases and controls	Age, sex, BMI, anxiety, MVC, activation, radiographic score	Depression	WOMAC function	linear	**2.15 (2.01; 2.29)**

Bold- statistically significant results

Appendix Table F44. Correlation between intermediate and clinical outcomes in adults with knee OA

		Number of hypotheses with different strength of correlation			Total number of hypotheses tested	% hypotheses with strong (with >50%) correlation
Exposure	**Outcomes**	**<20%**	**20-50%**	**>50%**		
Social isolation	Function	2	3	0	5	0
Social function	Function	0	2	0	2	0
Social function	Pain	0	1	0	1	0
Self-Efficacy	Disability	0	1	0	1	0
Self-Efficacy	Pain	0	2	0	2	0
Self-Efficacy	WOMAC-pain scale	0	1	0	1	0
Quality of Life	Disability	0	1	0	1	0
Quality of Life	Pain	2	0	0	2	0
Quality of Life	WOMAC-pain scale	1	0	0	1	0
Learned Resourcefulness	Function	7	7	0	14	0
Learned Resourcefulness	Pain	4	0	0	4	0
Irritability	Function	1	1	0	2	0
Irritability	Pain	0	1	0	1	0
Irritability	Social function	0	1	0	1	0
Helplessness	Disability	0	1	0	1	0
Helplessness	Pain	0	2	0	2	0
Helplessness	WOMAC-pain scale	0	1	0	1	0
Frustration	Function	0	1	1	2	50
Frustration	Pain	0	1	0	1	0
Fear Avoidance beliefs	Disability	0	1	0	1	0
Fear Avoidance beliefs	Pain	0	1	0	1	0
Fear Avoidance beliefs	Self-reported disability	0	1	0	1	0
Fatigue	Disability	0	1	0	1	0
Fatigue	Pain	0	2	0	2	0
Fatigue	WOMAC-pain scale	1	0	0	1	0
Energy	Function	1	4	0	5	0
Emotional reaction	Function	2	3	0	5	0
Depression	Disability	2	0	0	2	0
Depression	Function	1	10	3	14	21
Depression	Pain	3	4	0	7	0
Depression	Self-reported disability	1	0	0	1	0
Depression	WOMAC-pain scale	1	0	0	1	0
Cheerfulness	Disability	0	2	0	2	0
Cheerfulness	Pain	0	1	0	1	0

Appendix Table F45. Strength of correlation in validation testing of the tools to measure outcomes in adults with knee OA

	Number of hypotheses showing weak (<20%) correlation	Number of hypotheses showing medium (20-50%) correlation	Number of hypotheses showing strong (50-75%) correlation	Number of hypotheses showing very strong (>75%) correlation	% of hypotheses showing strong (>50%) correlation	Total number of hypotheses
Total	**139**	**368**	**269**	**47**	38.4	823
WOMAC	**17**	**36**	**36**	**14**	48.5	103
WOMAC- SF	**3**	**5**	**3**	**3**	42.9	14
36- Item Short Form Health Survey (SF-36)	**2**	**17**	**10**	**0**	34.5	29
Visual Analogue Scale (VAS)	**0**	**1**	**0**	**0**	0.0	1
EQ-5D	**0**	**5**	**0**	**0**	0.0	5
Health Assessment Questionnare (HAQ) Disability Index	**1**	**0**	**6**	**0**	**85.7**	7
Health Assessment Questionnare (HAQ): pain	**1**	**0**	**4**	**0**	**80.0**	5
Health Assessment Questionnare (HAQ): patient global assessment	1	0	0	0	0.0	1
Human Activity Profile (AAS)	1	4	3	0	37.5	8
Human Activity Profile (MAS)	1	7	0	0	0.0	8
Arthritis Impact Measurement Scale (AIMS)	25	35	6	0	9.1	66
Arthritis Impact Measurement Scale (AIMS) 2-SF	28	77	18	2	16.0	125
Extendable goniometer	0	0	1	0	**100.0**	1
Get Up and Go Test	3	7	0	0	0.0	10
Isokinetic dynamometer	1	2	2	0	40.0	5
Joint Specific Multidimensiional Assessment of Pain (J-MAP)	4	15	6	0	24.0	25
Knee Society Clinical Rating system	0	3	1	0	25.0	4
Knee Pain Scale (KPS)	5	20	7	0	21.9	32
Knee Patient -Specific (KPS)I)	0	7	6	1	**50.0**	14
Lower Extremity Activity Profil (LEAP)	0	4	0	0	0.0	4
Lequesne index	6	10	6	0	27.3	22
McGill Pain Questionnaire –Pain Rating Index (MPQ-PRI)	1	0	7	0	**87.5**	8
Numerical rating scale (NRS)	0	1	7	1	**88.9**	9
Performance and Activity scale (PAS)	1	0	0	0	0.0	1
Progressive Goal Attainment Program (PGAP)	16	18	2	0	5.6	36
Proprioceptive test	1	0	0	0	0.0	1
Walking speed	2	2	1	1	33.3	6
Walking Impairment Questionnaire (WIQ)	0	27	12	0	30.8	39

Bold: more than 50% of hypotheses found strong correlation

Appendix Table F46. Strength of correlation by validity type of the tools to measure outcomes in adults with knee OA

Tools	Validity Type	% of hypotheses showing strong (>50%) correlation	Total number of hypotheses
WOMAC	construct validity	44.6	65
WOMAC	convergent validity	**75.0**	20
WOMAC	divergent validity	33.3	18
WOMAC- SF	construct validity	42.9	14
36- Item Short Form Health Survey (SF-36)	construct validity	29.6	27
36- Item Short Form Health Survey (SF-36)	convergent validity	**100.0**	2
Health Assessment Questionniare (HAQ) Disability Index	construct validity	**83.3**	6
Health Assessment Questionniare (HAQ) Disability Index	convergent validity	**100.0**	1
Health Assessment Questionniare (HAQ): pain	construct validity	**80.0**	5
Health Assessment Questionniare (HAQ): patient global assessment	convergent validity	0.0	1
Human Activity Profile (AAS)	construct validity	37.5	8
Human Activity Profile (MAS)	construct validity	0.0	8
Arthritis Impact Measurement (AIMS)	construct validity	0.0	12
Arthritis Impact Measurement (AIMS)	convergent validity	11.1	54
Arthritis Impact Measurement (AIMS)2-SF	construct validity	0.0	10
Arthritis Impact Measurement (AIMS)2-SF	discriminant validity	17.4	115
Balance test	construct validity	**75.0**	4
Endurance	construct validity	33.3	3
Extendable goniometer	concurrent validity	**100.0**	1
Get Up and Go Test	concurrent validity	0.0	10
Grip strength	construct validity	0.0	3
Isokinetic dynamometer	construct validity	40.0	5
Joint Specific Multidimensional Assessment of Pain (J-MAP)	convergent and discriminant validity	24.0	25
Knee Society Clinical Rating system	construct validity	25.0	4
Knee Pain Scale (KPS)	construct validity	21.9	32
Knee Pain Specific Index (KPS)I	construct validity	**50.0**	14
Lower Extremity Activity Profile (LEAP)	construct validity	0.0	4
Lequesne index	construct validity	25.0	12
Lequesne index	convergent validity	**50.0**	6
Lequesne index	divergent validity	0.0	4
McGill Pain Questionniare –Pain Rating Index (MPQ-PRI)	construct validity	**87.5**	8
Numerical rating scale (NRS)	construct validity	**88.9**	9
Progressive Goal Attainment Program (PGAP)	construct validity	5.6	36
Walking speed	construct validity	33.3	6
Walking Impairment Questionniare (WIQ)	concurrent validity	26.9	26
Walking Impairment Questionniare (WIQ)	construct validity	41.7	12

Bold: 50% or more hypotheses found strong correlation

Appendix Table F47. Average size, percentage of women, and patient age in studies with validation of the tool to measure outcomes in adults with knee OA

	Variable	Mean	Standard Deviation	Maximum	Minimum	Median
Total	age	64	7	79	29	67
Total	size	254	402	2115	10	109
Total	% women	64	22	100	0	69
Australia	age	69	1	69	68	69
Australia	size	168	111	268	62	171
Australia	% women	65	4	70	61	64
Canada	age	64	5	70	55	65
Canada	size	309	624	1924	10	32
Canada	% women	64	24	100	44	52
Czech Republic	age	62	.	62	62	62
Czech Republic	size	.	.	.	.	.
Czech Republic	% women	76	.	76	76	76
Denmark	age	29	.	29	29	29
Denmark	size	200	.	200	200	200
Denmark	% women	35	.	35	35	35
Finland	age	60	.	60	60	60
Finland	size	130	.	130	130	130
Finland	% women	68	.	68	68	68
France	age	68	2	70	67	67
France	size	749	512	1218	19	880
France	% women	68	3	70	63	68
Germany	age	71	.	71	71	71
Germany	size	38	.	38	38	38
Germany	% women	58	.	58	58	58
Italy	age	64	.	64	64	64
Italy	size	61	.	61	61	61
Italy	% women	100	.	100	100	100
Netherlands	age	68	.	68	68	68
Netherlands	size	198	.	198	198	198
Netherlands	% women	78	.	78	78	78
Sweden	age	48	.	48	48	48
Sweden	size	52	.	52	52	52
Sweden	% women	25	.	25	25	25
Switzerland	age	67	2	70	64	68
Switzerland	size	85	52	161	51	65
Switzerland	% women	64	17	80	40	69
The Netherlands	age	63	5	68	55	64
The Netherlands	size	90	62	186	24	93
The Netherlands	% women	67	17	80	37	75
Turkey	age	56	.	56	56	56
Turkey	size	51	.	51	51	51
Turkey	% women	100	.	100	100	100
UK	age	66	3	70	63	66
UK	size	153	67	221	58	161
UK	% women	68	15	88	54	65
USA	age	65	7	79	44	67
USA	size	299	460	2115	17	152
USA	% women	62	26	89	0	71
USA, UK	age	68	.	68	68	68
USA, UK	size	84	.	84	84	84
USA, UK	% women	28	.	28	28	28
USA, UK and Australia	age	70	.	70	70	70
USA, UK and Australia	size	697	.	697	697	697
USA, UK and Australia	% women	59	.	59	59	59

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Endurance			
Lankhorst, 1982[92] Index: Endurance Reference: Maximal isometric torque	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis 0.282 P value: NR
Lankhorst, 1982[92] Index: Endurance Reference: Walking speed, number of steps and stair climbing	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis -0.178 P value: NR
Lankhorst, 1982[92] Index: Endurance Reference: Endurance and maximal impulse	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis -0.917 P value: NR
Gait			
Collins, 2008[387] Index: WIQ: speed subscale Reference: 6-minute walk distance	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking speed concurrent validity	Pearson r correlation 0.51 P value: 0.001
Collins, 2008[387] Index: WIQ:speed subscale Reference: WOMAC: stiffness subscale	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Pearson r correlation -0.24 P value: <0.02
Collins, 2008[387] Index: WIQ:speed subscale Reference: WOMAC: total score	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Pearson r correlation -0.51 P value: <0.001
Collins, 2008[387] Index: WIQ:speed subscale Reference: WOMAC: function subscale	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Pearson r correlation -0.52 P value: <0.001
Collins, 2008[387] Index: WIQ:speed subscale Reference: Examination and BOD POD(Body Mass Index)	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Pearson r correlation -0.37 P value: <0.001
Collins, 2008[387] Index: WIQ:speed subscale Reference: : BOD POD	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Pearson r correlation -0.26 P value: 0.007
Collins, 2008[387] Index: WIQ:speed subscale Reference: History (Duration of OA)	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Pearson r correlation -0.24 P value: <0.03
Collins, 2008[387] Index: WIQ:speed subscale Reference: History (American Rheumatism Association Functional Class)	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Spearman rank correlation coefficient -0.33 P value: 0.001

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Possley, [388] Index: WIQ: walking speed subscale Reference: 6 minute walk	USA Size: 105 Mean age: 67.5 % of females: 11	Not depressed patients category Domain: walking speed construct validity	0.59 P value: <0.001
Possley, [388] Index: WIQ: walking speed subscale Reference: 6 minute walk	USA Size: 105 Mean age: 67.5 % of females: 11	Depressed patients category Domain: walking speed construct validity	0.41 P value: <0.01
Possley, [388] Index: WIQ: walking speed subscale Reference: - 3-minute stair climb/descend	USA Size: 105 Mean age: 67.5 % of females: 11	Depressed patients category Domain: walking speed construct validity	0.33 P value: <0.05
Possley, [388] Index: WIQ: walking speed subscale Reference: 3-minute stair climb/descend	USA Size: 105 Mean age: 67.5 % of females: 11	Domain: walking speed construct validity	0.57 P value: <0.001
Bennell, 2004[368] Index: Human Activity Profile (AAS) Reference: Walking speed (m/s)	Australia Size: 259 Mean age: 69 in osteoarthritis group and 68 in control group % of females: 64. 1	construct validity	Spearman correlation coefficient 0.63 P value: <0.001
Bennell, 2004[368] Index: Human Activity Profile (MAS) Reference: Walking speed (m/s)	Australia Size: 259 Mean age: 69 in osteoarthritis group and 68 in control group % of females: 64.1	construct validity	Spearman correlation coefficient 0.44 P value: <0.001
Barker, 2004[389] Index: Sit-stand Reference: Walking speed	UK Size: 123 Mean age: 69.5 % of females: 53.7	construct validity	Spearman's rank correlation coefficient 0.391 P value: <0.01
Barker, 2004[389] Index: Walking speed Reference: Power (Leg extensor power)	UK Size: 123 Mean age: 69.5 % of females: 53.7	construct validity	Spearman's rank correlation coefficient 0.357 P value: <0.01
Barker, 2004[389] Index: Walking speed Reference: Power (Leg extensor power)	UK Size: 123 Mean age: 69.5 % of females: 53.7	construct validity	Spearman's rank correlation coefficient 0.394 P value: <0.01
Barker, 2004[389] Index: Walking speed Reference: Power (Leg extensor power)	UK Size: 123 Mean age: 69.5 % of females: 53.7	construct validity	Spearman's rank correlation coefficient 0.519 P value: <0.05
Lankhorst, 1982[92] Index: Maximal impulse Reference: Walking speed, number of steps and stair climbing	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis -0.178 P value: NR

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Lankhorst, 1982[92] Index: Maximal isometric torque Reference: Walking speed, number of steps and stair climbing	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis -0.13 P value: NR
Lankhorst, 1982[92] Index: Number of steps Reference: Walking speed, number of steps and stair climbing	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis 0.723 P value: NR
Lankhorst, 1982[92] Index: Stair climbing Reference: Walking speed, number of steps and stair climbing	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis 0.868 P value: NR
Lankhorst, 1982[92] Index: Walking speed Reference: Endurance and maximal impulse	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis 0.136 P value: NR
Lankhorst, 1982[92] Index: Walking speed Reference: Maximal isometric torque	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis 0.138 P value: NR
Lankhorst, 1982[92] Index: Walking speed Reference: Walking speed, number of steps and stair climbing	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis 0.903 P value: NR
Goniometer			
Gibson, 2010[390] Index: Extendable goniometer (non-radiographic measurement of frontal plane alignment) Reference: Radiographic measurement of frontal plane alignment	USA Size: 55 Mean age: 62.9 % of females: 74	concurrent validity	Pearson's correlation coefficient 0.75 P value: <0.001
Proprioception			
Birmingham, 2001[391] Index: Balance test (stable surface) Reference: Proprioceptive test	Canada Size: 20 Mean age: 59 % of females: NR	construct validity	Pearson' product-moment correlation -0.08 P value: 0.75
Range of motions			
Deniston, 1980[392] Index: Morning stiffness Reference: Grip strength	USA Size: 157 Mean age: 69 % of females: 75	construct validity	Spearman's rank correlation coefficient 0.1 P value: NR
Meenan, 1980[393] Index: AIMS: dexterity subscale: Likert format of the scale Reference: clinical history	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: dexterity convergent validity	Pearson correlation coefficient 0.14 P value: NR

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Meenan, 1980[393] Index: AIMS: dexterity subscale: Likert format of the scale Reference: doctor's opinion of number of joints affected (joint count)	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: dexterity convergent validity	Pearson correlation coefficient 0.25 P value: <0.05
Meenan, 1980[393] Index: AIMS: dexterity subscale: Likert format of the scale Reference: doctor's opinion of patient's functional level	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: dexterity convergent validity	Pearson correlation coefficient 0.39 P value: <0.01
Meenan, 1980[393] Index: AIMS: dexterity subscale: Likert format of the scale Reference: doctor's opinion of patient's recent disease activity	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: dexterity convergent validity	Pearson correlation coefficient 0.35 P value: <0.01
Meenan, 1980[393] Index: AIMS: dexterity subscale: Likert format of the scale Reference: questionnaire item: patient perception of general health	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: dexterity convergent validity	Pearson correlation coefficient 0.5 P value: <0.01
Meenan, 1980[393] Index: AIMS: dexterity subscale: Likert format of the scale Reference: questionnaire item: patient perception of recent disease activity	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: dexterity convergent validity	Pearson correlation coefficient 0.41 P value: <0.01
Wright, 2010[363] Index: KPSI Reference: WOMAC: stiffness scale	Canada Size: 100 Mean age: 69.7 % of females: 67	Domain: stiffness construct validity	Pearson coefficient 0.61 P value: NR
Faucher, 2002[394] Index: Lequesne index Reference: WOMAC: stiffness subscale	France Size: 19 Mean age: 70.31 % of females: 63.16	convergent validity	Spearman’s rank correlation coefficient 0.48 P value: NR
Deniston, 1980[392] Index: Morning stiffness Reference: Client assessment of "Good days": "How many "good days" have you had out of the last seven?” (The client was asked to interpret words such as "condition" and 'good days" in his or her own terms.)	USA Size: 157 Mean age: 69 % of females: 75	construct validity	Spearman's rank correlation coefficient 0.23 P value: NR

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Deniston, 1980[392] Index: Morning stiffness Reference: Client assessment of ability to deal: "Overall how would you rate your ability to deal with your arthritis and the problems it causes; would you say excellent, good, fair, or poor?"	USA Size: 157 Mean age: 69 % of females: 75	construct validity	Spearman's rank correlation coefficient 0.19 P value: NR
Deniston, 1980[392] Index: Morning stiffness Reference: Client assessment of joint condition: "Overall how would you rate the condition of your joints; would you say excellent, good, fair, or poor?"	USA Size: 157 Mean age: 69 % of females: 75	construct validity	Spearman's rank correlation coefficient 0.05 P value: NR
Deniston, 1980[392] Index: Morning stiffness Reference: Grip strength	USA Size: 157 Mean age: 69 % of females: 75	construct validity	Spearman's rank correlation coefficient 0.1 P value: NR
Faucher, 2002[394] Index: WOMAC:Stiffness subscale Reference: Lequesne stiffness score	France Size: 19 Mean age: 70.31 % of females: 63	Domain: stiffness convergent validity	Spearman rank correlation coefficient 0.51 P value: NR
Faucher, 2002[394] Index: WOMAC:Stiffness subscale Reference: Circumference of the thigh	France Size: 19 Mean age: 70.31 % of females: 63	Domain: stiffness divergent validity	Spearman rank correlation coefficient 0.23 P value: NR
Faucher, 2002[394] Index: WOMAC:Stiffness subscale Reference: Hospital Anxiety and Depression Scale(Score of anxiety)	France Size: 19 Mean age: 70.31 % of females: 63	Domain: stiffness divergent validity	Spearman rank correlation coefficient 0.27 P value: NR
Faucher, 2002[394] Index: WOMAC:Stiffness subscale Reference: Hospital Anxiety and Depression Scale(Score of depression)	France Size: 19 Mean age: 70.31 % of females: 63	Domain: stiffness divergent validity	Spearman rank correlation coefficient 0.17 P value: NR
Faucher, 2002[394] Index: WOMAC:Stiffness subscale Reference: Kellgren-Lawrence	France Size: 19 Mean age: 70.31 % of females: 63	Domain: stiffness divergent validity	Spearman rank correlation coefficient 0.12 P value: NR
Faucher, 2002[394] Index: WOMAC:Stiffness subscale Reference: WOMAC: function subscale	France Size: 19 Mean age: 70.31 % of females: 63	Domain: stiffness divergent validity	Spearman rank correlation coefficient 0.74 P value: NR
Faucher, 2002[394] Index: WOMAC:Stiffness subscale Reference: WOMAC: stiffness subscale	France Size: 19 Mean age: 70.31 % of females: 63	Domain: stiffness divergent validity	Spearman rank correlation coefficient 0.61 P value: NR
Possley, [388] Index: WOMAC :stiffness subscale Reference: 3-minute stair climb/descend	USA Size: 105 Mean age: 67.5 % of females: 11	Domain: stiffness construct validity	0.03 P value: NR

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Possley, [388] Index: WOMAC: stiffness subscale Reference: 6 minute walk	USA Size: 105 Mean age: 67.5 % of females: 11	Domain: stiffness construct validity	-0.02 P value: NR
Possley, [388] Index: WOMAC: stiffness subscale Reference: 6 minute walk	USA Size: 105 Mean age: 67.5 % of females: 11	Domain: stiffness construct validity	0.04 P value: NR
Possley, [388] Index: WOMAC: stiffness subscale Reference: 6 minute walk	USA Size: 105 Mean age: 67.5 % of females: 11	Domain: stiffness construct validity	0.12 P value: NR
Stucki, 1998[352] Index: WOMAC knee: stiffness Reference: Extension deficit	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: stiffness construct validity	Spearman's rank correlation coefficient 0.33 P value:
Stucki, 1998[352] Index: WOMAC knee: stiffness Reference: Flexion	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: stiffness construct validity	Spearman's rank correlation coefficient -0.36 P value: <0.05
Stucki, 1998[352] Index: WOMAC knee: stiffness Reference: Kellgren -Lawrence scale	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: stiffness construct validity	Spearman's rank correlation coefficient 0.24 P value: NR
Bruce, 2004[395] Index: WOMAC: stiffness Reference: HAQ: patient global assessment	USA Size: 271 Mean age: 65.7 % of females: 79	Domain: stiffness convergent validity	Spearman rank correlation coefficient 0.54 P value: NR
Bruce, 2004[395] Index: WOMAC: stiffness Reference: Total Knee Score	USA Size: 271 Mean age: 65.7 % of females: 79	Domain: stiffness convergent validity	Spearman rank correlation coefficient 0.08 P value: NR
Yang, 2007[396] Index: Traditional WOMAC Reference: KOOS stiffness	The Netherlands Size: 100 Mean age: 54.9 % of females: 37	construct validity	Lin's concordance correlation coefficient 0.6 P value: NR
Yang, 2007[396] Index: Modified short-form WOMAC Reference: KOOS stiffness	The Netherlands Size: 100 Mean age: 54.9 % of females: 37	construct validity	Lin's concordance correlation coefficient 0.61 P value: NR
Yang, 2007[396] Index: Short-form WOMAC function scale Reference: KOOS stiffness	The Netherlands Size: 100 Mean age: 54.9 % of females: 37	construct validity	Lin's concordance correlation coefficient 0.58 P value: NR
Strength			
Deniston, 1980[392] Index: Grip strength Reference: Client assessment of "Good days": "How many "good days" have you had out of the last seven? (The client was asked to interpret words such as "condition" and 'good days" in his or her own terms.)	USA Size: 157 Mean age: 69 % of females: 75	construct validity	Spearman's rank correlation coefficient 0.05 P value: NR

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Deniston, 1980[392] Index: Grip strength Reference: Client assessment of ability to deal: "Overall how would you rate your ability to deal with your arthritis and the problems it causes; would you say excellent, good, fair, or poor?"	USA Size: 157 Mean age: 69 % of females: 75	construct validity	Spearman's rank correlation coefficient 0.03 P value: NR
Deniston, 1980[392] Index: Grip strength Reference: Client assessment of joint condition: "Overall how would you rate the condition of your joints; would you say excellent, good, fair, or poor?"	USA Size: 157 Mean age: 69 % of females: 75	construct validity	Spearman's rank correlation coefficient 0.22 P value: NR
Steultjens, 2001[397] Index: Hip abduction:ipsilateral side:dynamometer Reference: Hip abduction:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.83 P value: <0.01
Steultjens, 2001[397] Index: Hip abduction:ipsilateral side:dynamometer Reference: Knee flexion:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.5 P value: <0.01
Steultjens, 2001[397] Index: Hip abduction:ipsilateral side:dynamometer Reference: Knee extension:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.6 P value: <0.01
Steultjens, 2001[397] Index: Hip abduction:contralateral side:dynamometer Reference: Knee flexion:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.6 P value: <0.01
Steultjens, 2001[397] Index: Hip abduction:contralateral side:dynamometer Reference: Knee extension:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.63 P value: <0.01
Steultjens, 2001[397] Index: Hip abduction:ipsilateral side:dynamometer Reference: Knee flexion:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.65 P value: <0.01

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Steultjens, 2001[397] Index: Hip abduction:contralateral side:dynamometer Reference: Knee flexion:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.69 P value: <0.01
Steultjens, 2001[397] Index: Hip abduction:ipsilateral side:dynamometer Reference: Knee extension:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.7 P value: <0.01
Steultjens, 2001[397] Index: Hip abduction:contralateral side:dynamometer Reference: Knee extension:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.73 P value: <0.01
Steultjens, 2001[397] Index: Hip adduction:contralateral side:dynamometer Reference: Hip abduction:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.76 P value: <0.01
Steultjens, 2001[397] Index: Hip adduction:contralateral side:dynamometer Reference: Hip abduction:ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.76 P value: <0.01
Steultjens, 2001[397] Index: Hip adduction: ipsilateral side:dynamometer Reference: Hip adduction:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.8 P value: <0.01
Steultjens, 2001[397] Index: Hip adduction:contralateral side:dynamometer Reference: Knee flexion:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.55 P value: <0.01
Steultjens, 2001[397] Index: Hip adduction: ipsilateral side:dynamometer Reference: Knee flexion:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	: correlation	Pearson correlation coefficient 0.56 P value: <0.01

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Steultjens, 2001[397] Index: Hip adduction: ipsilateral side:dynamometer Reference: Knee extension:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.57 P value: <0.01
Steultjens, 2001[397] Index: Hip adduction: ipsilateral side:dynamometer Reference: Knee extension:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.65 P value: <0.01
Steultjens, 2001[397] Index: Hip adduction:contralateral side:dynamometer Reference: Knee extension:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.69 P value: <0.01
Steultjens, 2001[397] Index: Hip adduction:contralateral side:dynamometer Reference: Knee extension:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.69 P value: <0.01
Steultjens, 2001[397] Index: Hip adduction:contralateral side:dynamometer Reference: Knee flexion:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.7 P value: <0.01
Steultjens, 2001[397] Index: Hip adduction: ipsilateral side:dynamometer Reference: Hip abduction:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.71 P value: <0.01
Steultjens, 2001[397] Index: Hip adduction: ipsilateral side:dynamometer Reference: Hip abduction:ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	: correlation	Pearson correlation coefficient 0.71 P value: <0.01
Steultjens, 2001[397] Index: Hip adduction: ipsilateral side:dynamometer Reference: Knee flexion:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.71 P value: <0.01

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Steultjens, 2001[397] Index: Hip extension: ipsilateral side:dynamometer Reference: Hip extension:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.8 P value: <0.01
Steultjens, 2001[397] Index: Hip extension:contralateral side:dynamometer Reference: Hip internal rotation: ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.37 P value: <0.01
Steultjens, 2001[397] Index: Hip extension: ipsilateral side:dynamometer Reference: Knee extension:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.37 P value: <0.01
Steultjens, 2001[397] Index: Hip extension: ipsilateral side:dynamometer Reference: Hip internal rotation: ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.4 P value: <0.01
Steultjens, 2001[397] Index: Hip extension:contralateral side:dynamometer Reference: Knee extension:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.42 P value: <0.01
Steultjens, 2001[397] Index: Hip extension:contralateral side:dynamometer Reference: Knee extension:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.45 P value: <0.01
Steultjens, 2001[397] Index: Hip extension: ipsilateral side:dynamometer Reference: Hip adduction:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.46 P value: <0.01
Steultjens, 2001[397] Index: Hip extension: ipsilateral side:dynamometer Reference: Hip abduction:ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.48 P value: <0.01

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Steultjens, 2001[397] Index: Hip extension:contralateral side:dynamometer Reference: Hip external rotation: ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.49 P value: <0.01
Steultjens, 2001[397] Index: Hip extension: ipsilateral side:dynamometer Reference: Hip adduction: ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.5 P value: <0.01
Steultjens, 2001[397] Index: Hip extension: ipsilateral side:dynamometer Reference: Knee extension:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.5 P value: <0.01
Steultjens, 2001[397] Index: Hip extension:contralateral side:dynamometer Reference: Hip abduction:ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.51 P value: <0.01
Steultjens, 2001[397] Index: Hip extension:contralateral side:dynamometer Reference: Hip adduction: ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.52 P value: <0.01
Steultjens, 2001[397] Index: Hip extension: ipsilateral side:dynamometer Reference: Hip abduction:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.53 P value: <0.01
Steultjens, 2001[397] Index: Hip extension: ipsilateral side:dynamometer Reference: Hip external rotation: ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.53 P value: <0.01
Steultjens, 2001[397] Index: Hip extension: ipsilateral side:dynamometer Reference: Hip internal rotation: contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.53 P value: <0.01

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Steultjens, 2001[397] Index: Hip extension:contralateral side:dynamometer Reference: Hip adduction:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.54 P value: <0.01
Steultjens, 2001[397] Index: Hip extension:contralateral side:dynamometer Reference: Hip external rotation: contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.55 P value: <0.01
Steultjens, 2001[397] Index: Hip extension: ipsilateral side:dynamometer Reference: Knee flexion:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.55 P value: <0.01
Steultjens, 2001[397] Index: Hip extension: ipsilateral side:dynamometer Reference: Hip external rotation: contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.56 P value: <0.01
Steultjens, 2001[397] Index: Hip extension:contralateral side:dynamometer Reference: Hip abduction:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.57 P value: <0.01
Steultjens, 2001[397] Index: Hip extension: ipsilateral side:dynamometer Reference: Knee flexion:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.6 P value: <0.01
Steultjens, 2001[397] Index: Hip extension:contralateral side:dynamometer Reference: Hip internal rotation: contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.61 P value: <0.01
Steultjens, 2001[397] Index: Hip extension:contralateral side:dynamometer Reference: Knee flexion:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74. 80	correlation	Pearson correlation coefficient 0.61 P value: <0.01

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Steultjens, 2001[397] Index: Hip extension:contralateral side:dynamometer Reference: Knee flexion:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.64 P value: <0.01
Steultjens, 2001[397] Index: Hip external rotation: ipsilateral side:dynamometer Reference: Hip external rotation: contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.8 P value: <0.01
Steultjens, 2001[397] Index: Hip external rotation: ipsilateral side:dynamometer Reference: Knee extension:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.58 P value: <0.01
Steultjens, 2001[397] Index: Hip external rotation: ipsilateral side:dynamometer Reference: Knee flexion:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.59 P value: <0.01
Steultjens, 2001[397] Index: Hip external rotation: contralateral side:dynamometer Reference: Hip adduction: ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.6 P value: <0.01
Steultjens, 2001[397] Index: Hip external rotation: contralateral side:dynamometer Reference: Knee flexion:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.63 P value: <0.01
Steultjens, 2001[397] Index: Hip external rotation: contralateral side:dynamometer Reference: Hip abduction:ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.66 P value: <0.01
Steultjens, 2001[397] Index: Hip external rotation: contralateral side:dynamometer Reference: Knee extension:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.66 P value: <0.01

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Steultjens, 2001[397] Index: Hip external rotation: ipsilateral side:dynamometer Reference: Knee extension:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.66 P value: <0.01
Steultjens, 2001[397] Index: Hip external rotation: contralateral side:dynamometer Reference: Knee extension:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.66 P value: <0.01
Steultjens, 2001[397] Index: Hip external rotation: ipsilateral side:dynamometer Reference: Hip abduction:ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.67 P value: <0.01
Steultjens, 2001[397] Index: Hip external rotation: contralateral side:dynamometer Reference: Hip adduction:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.7 P value: <0.01
Steultjens, 2001[397] Index: Hip external rotation: contralateral side:dynamometer Reference: Knee flexion:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.7 P value: <0.01
Steultjens, 2001[397] Index: Hip external rotation: ipsilateral side:dynamometer Reference: Hip abduction:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.72 P value: <0.01
Steultjens, 2001[397] Index: Hip external rotation: ipsilateral side:dynamometer Reference: Hip adduction: ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	: correlation	Pearson correlation coefficient 0.72 P value: <0.01
Steultjens, 2001[397] Index: Hip external rotation: ipsilateral side:dynamometer Reference: Hip adduction:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.72 P value: <0.01

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Steultjens, 2001[397] Index: Hip external rotation: contralateral side:dynamometer Reference: Hip abduction:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.74 P value: <0.01
Steultjens, 2001[397] Index: Hip external rotation: ipsilateral side:dynamometer Reference: Knee flexion:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.75 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion contralateral side:dynamometer Reference: Hip internal rotation: contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.76 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion contralateral side:dynamometer Reference: Knee flexion:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.77 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion contralateral side:dynamometer Reference: Knee flexion:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.8 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion contralateral side:dynamometer Reference: Hip internal rotation: ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.46 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion contralateral side:dynamometer Reference: Hip extension: ipsilateral side: dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.53 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion contralateral side:dynamometer Reference: Hip extension:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.59 P value: <0.01

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Steultjens, 2001[397] Index: Hip flexion contralateral side:dynamometer Reference: Knee extension:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.6 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion contralateral side:dynamometer Reference: Hip adduction: ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.64 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion contralateral side:dynamometer Reference: Hip abduction:ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.66 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion contralateral side:dynamometer Reference: Hip abduction:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.68 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion contralateral side:dynamometer Reference: Knee extension:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.68 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion contralateral side:dynamometer Reference: Hip adduction:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.69 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion contralateral side:dynamometer Reference: Hip external rotation: ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.71 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion contralateral side:dynamometer Reference: Hip external rotation: contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.72 P value: <0.01

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Steultjens, 2001[397] Index: Hip flexion ipsilateral side:dynamometer Reference: Hip external rotation: ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.77 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion ipsilateral side:dynamometer Reference: Knee flexion:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.81 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion ipsilateral side: dynamometer Reference: Hip flexion: contralateral side: dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.84 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion ipsilateral side:dynamometer Reference: Hip extension:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.54 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion ipsilateral side:dynamometer Reference: Hip extension: ipsilateral side: dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.58 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion ipsilateral side:dynamometer Reference: Knee extension:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.59 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion ipsilateral side:dynamometer Reference: Hip internal rotation: ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.6 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion ipsilateral side:dynamometer Reference: Knee extension:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.64 P value: <0.01

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Steultjens, 2001[397] Index: Hip flexion ipsilateral side:dynamometer Reference: Knee flexion:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.65 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion ipsilateral side:dynamometer Reference: Hip internal rotation: contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.66 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion ipsilateral side:dynamometer Reference: Hip abduction:ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.67 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion ipsilateral side:dynamometer Reference: Hip abduction:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.69 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion ipsilateral side:dynamometer Reference: Hip external rotation: contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.7 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion ipsilateral side:dynamometer Reference: Hip adduction:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.72 P value: <0.01
Steultjens, 2001[397] Index: Hip flexion ipsilateral side:dynamometer Reference: Hip adduction: ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.73 P value: <0.01
Steultjens, 2001[397] Index: Hip internal rotation: contralateral side:dynamometer Reference: Knee extension:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.76 P value: <0.01

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Steultjens, 2001[397] Index: Hip internal rotation: contralateral side:dynamometer Reference: Hip external rotation: ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.77 P value: <0.01
Steultjens, 2001[397] Index: Hip internal rotation: contralateral side:dynamometer Reference: Hip external rotation: contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.82 P value: <0.01
Steultjens, 2001[397] Index: Hip internal rotation: ipsilateral side:dynamometer Reference: Knee flexion:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.3 P value: <0.01
Steultjens, 2001[397] Index: Hip internal rotation: ipsilateral side:dynamometer Reference: Knee extension:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.42 P value: <0.01
Steultjens, 2001[397] Index: Hip internal rotation: ipsilateral side:dynamometer Reference: Knee flexion:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.51 P value: <0.01
Steultjens, 2001[397] Index: Hip internal rotation: ipsilateral side:dynamometer Reference: Hip abduction:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.54 P value: <0.01
Steultjens, 2001[397] Index: Hip internal rotation: ipsilateral side:dynamometer Reference: Hip abduction:ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.54 P value: <0.01
Steultjens, 2001[397] Index: Hip internal rotation: ipsilateral side:dynamometer Reference: Knee extension:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.55 P value: <0.01

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Steultjens, 2001[397] Index: Hip internal rotation: ipsilateral side:dynamometer Reference: Hip adduction:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.58 P value: <0.01
Steultjens, 2001[397] Index: Hip internal rotation: ipsilateral side:dynamometer Reference: Hip adduction: ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.6 P value: <0.01
Steultjens, 2001[397] Index: Hip internal rotation: contralateral side:dynamometer Reference: Hip adduction: ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.61 P value: <0.01
Steultjens, 2001[397] Index: Hip internal rotation: ipsilateral side:dynamometer Reference: Hip external rotation: contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.62 P value: <0.01
Steultjens, 2001[397] Index: Hip internal rotation: contralateral side:dynamometer Reference: Knee extension:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.63 P value: <0.01
Steultjens, 2001[397] Index: Hip internal rotation: contralateral side:dynamometer Reference: Hip abduction:ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.64 P value: <0.01
Steultjens, 2001[397] Index: Hip internal rotation: contralateral side:dynamometer Reference: Knee flexion:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.66 P value: <0.01
Steultjens, 2001[397] Index: Hip internal rotation: ipsilateral side:dynamometer Reference: Hip internal rotation: contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.67 P value: <0.01

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Steultjens, 2001[397] Index: Hip internal rotation: contralateral side:dynamometer Reference: Hip abduction:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.71 P value: <0.01
Steultjens, 2001[397] Index: Hip internal rotation: contralateral side:dynamometer Reference: Knee flexion:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.71 P value: <0.01
Steultjens, 2001[397] Index: Hip internal rotation: ipsilateral side:dynamometer Reference: Hip external rotation: ipsilateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.73 P value: <0.01
Steultjens, 2001[397] Index: Hip internal rotation: contralateral side:dynamometer Reference: Hip adduction:contralateral side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.75 P value: <0.01
Steultjens, 2001[397] Index: Knee extension:affected side:dynamometer Reference: Knee extension:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.77 P value: <0.01
Steultjens, 2001[397] Index: Knee flexion:affected side:dynamometer Reference: Knee flexion:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.8 P value: <0.01
Steultjens, 2001[397] Index: Knee flexion:unaffected side:dynamometer Reference: Knee extension:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.51 P value: <0.01
Steultjens, 2001[397] Index: Knee flexion:unaffected side:dynamometer Reference: Knee extension:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.63 P value: <0.01

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Steultjens, 2001[397] Index: Knee flexion:affected side:dynamometer Reference: Knee extension:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.68 P value: <0.01
Steultjens, 2001[397] Index: Knee flexion:affected side:dynamometer Reference: Knee extension:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.73 P value: <0.01
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC:pain scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: chair -rise construct validity	spearman correlation 0.33 P value: <0.005
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC:stiffness scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: walking construct validity	spearman correlation 0.33 P value: <0.005
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC:stiffness scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: chair -rise construct validity	spearman correlation 0.36 P value: <0.005
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC:stiffness scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: stairs:descending construct validity	spearman correlation 0.37 P value: <0.005
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC:pain scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: walking construct validity	spearman correlation 0.38 P value: <0.005
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC:pain scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: stairs:descending construct validity	spearman correlation 0.38 P value: <0.005
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC:stiffness scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: stairs:ascending construct validity	spearman correlation 0.38 P value: <0.005
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC:pain scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: stairs:ascending construct validity	spearman correlation 0.45 P value: <0.005
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC:physical function scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: walking construct validity	spearman correlation 0.48 P value: <0.005
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC:physical function scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: stairs:descending construct validity	spearman correlation 0.52 P value: <0.005

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC:physical function scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: stairs:ascending construct validity	spearman correlation 0.53 P value: <0.005
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC:physical function scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: chair -rise construct validity	spearman correlation 0.54 P value: <0.005
Lankhorst, 1982[92] Index: Maximal impulse Reference: Walking speed, number of steps and stair climbing	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis -0.178 P value:
Lankhorst, 1982[92] Index: Maximal impulse Reference: Endurance and maximal impulse	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis -0.893 P value:
Lankhorst, 1982[92] Index: Maximal impulse Reference: Maximal isometric torque	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis -0.382 P value:
Lankhorst, 1982[92] Index: Maximal isometric torque Reference: Walking speed, number of steps and stair climbing	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis -0.13 P value:
Lankhorst, 1982[92] Index: Maximal isometric torque Reference: Endurance and maximal impulse	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis -0.023 P value:
Lankhorst, 1982[92] Index: Maximal isometric torque Reference: Maximal isometric torque	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis -0.972 P value:
Van Der Esch, 2006[372] Index: isokinetic dynamometer Reference: isokinetic dynamometer	The Netherlands Size: 86 Mean age: 63.6 % of females: 76	construct validity	Pearson's correlation coefficient -0.34 P value: <0.05
Van Der Esch, 2006[372] Index: isokinetic dynamometer Reference: Walking time	The Netherlands Size: 86 Mean age: 63.6 % of females: 76	construct validity	Pearson's correlation coefficient 0.25 P value: <0.05
Van Der Esch, 2006[372] Index: isokinetic dynamometer Reference: Walking time	The Netherlands Size: 86 Mean age: 63.6 % of females: 76	construct validity	Pearson's correlation coefficient -0.5 P value: <0.001
Van Der Esch, 2006[372] Index: isokinetic dynamometer Reference: WOMAC physical function	The Netherlands Size: 86 Mean age: 63.6 % of females: 76	construct validity	Pearson's correlation coefficient 0.03 P value: 0.799
Van Der Esch, 2006[372] Index: isokinetic dynamometer Reference: WOMAC physical function	The Netherlands Size: 86 Mean age: 63.6 % of females: 76	construct validity	Pearson's correlation coefficient -0.61 P value: <0.001

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Steultjens, 2001[397] Index: Knee extension:affected side:dynamometer Reference: Knee extension:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.77 P value: <0.01
Steultjens, 2001[397] Index: Knee flexion:affected side:dynamometer Reference: Knee extension:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.73 P value: <0.01
Steultjens, 2001[397] Index: Knee flexion:unaffected side:dynamometer Reference: Knee extension:affected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.51 P value: <0.01
Steultjens, 2001[397] Index: Knee flexion:affected side:dynamometer Reference: Knee extension:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.68 P value: <0.01
Steultjens, 2001[397] Index: Knee flexion:unaffected side:dynamometer Reference: Knee extension:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.63 P value: <0.01
Steultjens, 2001[397] Index: Knee flexion:affected side:dynamometer Reference: Knee flexion:unaffected side:dynamometer	The Netherlands Size: 122 Mean age: Mean for hip OA=67.8 and for knee OA=68.2 % of females: 74.80	correlation	Pearson correlation coefficient 0.8 P value: <0.01
Clark, 1998[380] Index: Knees ever give away Reference: Osteoarthritis Severity Scale: Assessed by 2 questions about pain and stiffness while: 1) Resting 2)Sleeping	USA Size: 415 Mean age: 66 % of females: 0	construct validity	Pearson correlation coefficient 0.29 P value:
Clark, 1998[380] Index: Knees ever give away Reference: Osteoarthritis Severity Scale: Assessed by 2 questions about impaired function: 1) limping 2)knees giving way with activity	USA Size: 415 Mean age: 66 % of females: 0	construct validity	Pearson correlation coefficient 0.33 P value:

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Clark, 1998[380] Index: Knees ever give away Reference: Osteoarthritis Severity Scale: global severity assessed by 4 questions: 1)Persistence of pain in worst knee; 2) Intensity of pain in worst knee; 3)Diurnal duration of pain and stiffness in the worst knee; 4) Frequency of severe pain in the worst knee	USA Size: 415 Mean age: 66 % of females: 0	construct validity	Pearson correlation coefficient 0.37 P value:
Clark, 1998[380] Index: Knees ever give away Reference: Osteoarthritis Severity Scale: Assessed by 3 questions about pain and stiffness during: 1) walking 2)using stairs 3)standing	USA Size: 415 Mean age: 66 % of females: 0	construct validity	Pearson correlation coefficient 0.37 P value:
Clark, 1998[380] Index: Knees ever give away Reference: Osteoarthritis Severity Scale: Assessed by 12 questions: 1)Persistence of pain in worst knee; 2) Intensity of pain in worst knee; 3)Diurnal duration of pain and stiffness in the worst knee; 4) Frequency of severe pain in the worst knee; 5) Pain and stiffing	USA Size: 415 Mean age: 66 % of females: 0	construct validity	Pearson correlation coefficient 0.42 P value:
Lankhorst, 1982[92] Index: Maximal impulse Reference: Maximal isometric torque	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis -0.382 P value: NR
Lankhorst, 1982[92] Index: Maximal impulse Reference: Endurance and maximal impulse	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis -0.893 P value: NR
Lankhorst, 1982[92] Index: Maximal isometric torque Reference: Endurance and maximal impulse	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis -0.023 P value: NR
Lankhorst, 1982[92] Index: Maximal isometric torque Reference: Maximal isometric torque	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis -0.972 P value: NR
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC:pain scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: chair -rise construct validity	spearman correlation 0.33 P value: <0.005
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC:stiffness scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: walking construct validity	spearman correlation 0.33 P value: <0.005

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC:stiffness scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: chair -rise construct validity	spearman correlation 0.36 P value: <0.005
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC:stiffness scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: stairs: descending construct validity	spearman correlation 0.37 P value: <0.005
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC:pain scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: walking construct validity	spearman correlation 0.38 P value: <0.005
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC: pain scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: stairs: descending construct validity	spearman correlation 0.38 P value: <0.005
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC: stiffness scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: stairs: ascending construct validity	spearman correlation 0.38 P value: <0.005
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC: pain scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: stairs: ascending construct validity	spearman correlation 0.45 P value: <0.005
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC: physical function scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: walking construct validity	spearman correlation 0.48 P value: <0.005
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC: physical function scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: stairs: descending construct validity	spearman correlation 0.52 P value: <0.005
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC: physical function scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: stairs: ascending construct validity	spearman correlation 0.53 P value: <0.005
Lin, 2001[398] Index: Physical performance measures Reference: WOMAC: physical function scale	UK Size: 106 Mean age: 69.4 % of females: 88	Domain: chair -rise construct validity	spearman correlation 0.54 P value: <0.005
Balance			
Birmingham, 2001[391] Index: Balance test (foam surface) Reference: Degenerative changes (radiograph)	Canada Size: 20 Mean age: 59 % of females: NR	construct validity	Pearson' product-moment correlation 0.58 P value: 0.007
Birmingham, 2001[391] Index: Balance test (stable surface) Reference: Degenerative changes (radiograph)	Canada Size: 20 Mean age: 59 % of females: NR	construct validity	Pearson' product-moment correlation 0.55 P value: 0.013
Birmingham, 2001[391] Index: Balance test (stable surface) Reference: Balance test (foam surface)	Canada Size: 20 Mean age: 59 % of females: NR	construct validity	Pearson' product-moment correlation 0.89 P value: <0.0001

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Transfers			
Rejeski, 1995[399] Index: KPS Reference: 6 min walk test	USA Size: 440 Mean age: 68.8 % of females: 69.32	Domain: transfer frequency construct validity	NR 0.2 P value: NR
Rejeski, 1995[399] Index: KPS Reference: 6 min walk test	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: ambulation frequency construct validity	NR 0.224 P value: NR
Rejeski, 1995[399] Index: KPS Reference: 6 min walk test	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: transfer intensity construct validity	NR 0.274 P value: NR
Rejeski, 1995[399] Index: KPS Reference: 6 min walk test	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: ambulation intensity construct validity	NR 0.277 P value: NR
Rejeski, 1995[399] Index: KPS Reference: CES -D (depression scale)	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: transfer frequency construct validity	NR 0.118 P value: NR
Rejeski, 1995[399] Index: KPS Reference: CES -D (depression scale)	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: ambulation frequency construct validity	NR 0.056 P value: NR
Rejeski, 1995[399] Index: KPS Reference: CES -D (depression scale)	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: transfer intensity construct validity	NR 0.192 P value: NR
Rejeski, 1995[399] Index: KPS Reference: CES -D (depression scale)	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: ambulation intensity construct validity	NR 0.093 P value: NR
Rejeski, 1995[399] Index: KPS Reference: FAST Functional Performance Inventory: Ambulation ADL subscale	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: transfer frequency construct validity	NR 0.47 P value: NR
Rejeski, 1995[399] Index: KPS Reference: FAST Functional Performance Inventory: Ambulation ADL subscale	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: ambulation frequency construct validity	NR 0.642 P value: NR
Rejeski, 1995[399] Index: KPS Reference: FAST Functional Performance Inventory: Ambulation ADL subscale	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: transfer intensity construct validity	NR 0.42 P value: NR
Rejeski, 1995[399] Index: KPS Reference: FAST Functional Performance Inventory: Ambulation ADL subscale	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: ambulation intensity construct validity	NR 0.604 P value: NR

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Rejeski, 1995[399] Index: KPS Reference: FAST Functional Performance Inventory: Transfer ADL subscale	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: transfer frequency construct validity	NR 0.565 P value: NR
Rejeski, 1995[399] Index: KPS Reference: FAST Functional Performance Inventory: Transfer ADL subscale	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: ambulation frequency construct validity	NR 0.423 P value: NR
Rejeski, 1995[399] Index: KPS Reference: FAST Functional Performance Inventory: Transfer ADL subscale	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: transfer intensity construct validity	NR 0.573 P value: NR
Rejeski, 1995[399] Index: KPS Reference: FAST Functional Performance Inventory: Transfer ADL subscale	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: ambulation intensity construct validity	NR 0.41 P value: NR
Rejeski, 1995[399] Index: KPS Reference: FAST Functional Performance Inventory:ADL subscale	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: transfer frequency construct validity	NR 0.211 P value: NR
Rejeski, 1995[399] Index: KPS Reference: FAST Functional Performance Inventory:ADL subscale	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: ambulation frequency construct validity	NR 0.165 P value: NR
Rejeski, 1995[399] Index: KPS Reference: FAST Functional Performance Inventory:ADL subscale	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: transfer intensity construct validity	NR 0.297 P value: NR
Rejeski, 1995[399] Index: KPS Reference: FAST Functional Performance Inventory:ADL subscale	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: ambulation intensity construct validity	NR 0.211 P value: NR
Rejeski, 1995[399] Index: KPS Reference: FAST Functional Performance Inventory:IADL subscale	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: transfer frequency construct validity	NR 0.355 P value: NR
Rejeski, 1995[399] Index: KPS Reference: FAST Functional Performance Inventory:IADL subscale	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: ambulation frequency construct validity	NR 0.377 P value: NR

Appendix Table F48. Correlation between index methods to measure intermediate outcomes and reference standards in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Rejeski, 1995[399] Index: KPS Reference: FAST Functional Performance Inventory:IADL subscale	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: transfer intensity construct validity	NR 0.338 P value: NR
Rejeski, 1995[399] Index: KPS Reference: FAST Functional Performance Inventory:IADL subscale	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: ambulation intensity construct validity	NR 0.351 P value: NR
Rejeski, 1995[399] Index: KPS Reference: MPQ (McGill Pain Questionnaire)	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: transfer frequency construct validity	NR 0.519 P value: NR
Rejeski, 1995[399] Index: KPS Reference: MPQ (McGill Pain Questionnaire)	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: ambulation frequency construct validity	NR 0.455 P value: NR
Rejeski, 1995[399] Index: KPS Reference: MPQ (McGill Pain Questionnaire)	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: transfer intensity construct validity	NR 0.572 P value: NR
Rejeski, 1995[399] Index: KPS Reference: MPQ (McGill Pain Questionnaire)	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: ambulation intensity construct validity	NR 0.499 P value: NR
Rejeski, 1995[399] Index: KPS Reference: Stair climb	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: transfer frequency construct validity	NR 0.226 P value: NR
Rejeski, 1995[399] Index: KPS Reference: Stair climb	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: ambulation frequency construct validity	NR 0.234 P value: NR
Rejeski, 1995[399] Index: KPS Reference: Stair climb	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: transfer intensity construct validity	NR 0.305 P value: NR
Rejeski, 1995[399] Index: KPS Reference: Stair climb	USA Size: 440 Mean age: 68.8 % of females: 69.-32	Domain: ambulation intensity construct validity	NR 0.322 P value: NR

Bold-strong correlations of >50%; NR-not reported

Appendix Table F49. Validity of the functional tests in patients with knee OA

Author, year Index Reference methods	Country Size Mean age % of females	Validity	Estimate, significance
Barker, 2004[389] Index: Sit-stand Reference: Power (Leg extensor power)	UK Size: 123 Mean age: 69.5 % of females: 53.7	construct validity	Spearman's rank correlation coefficient 0.392 P value: <0.01
Barker, 2004[389] Index: Sit-stand Reference: VAS: pain	UK Size: 123 Mean age: 69.5 % of females: 53.7	construct validity	Spearman's rank correlation coefficient 0.383 P value: <0.01
Barker, 2004[389] Index: Sit-stand Reference: WOMAC: pain subscale	UK Size: 123 Mean age: 69.5 % of females: 53.7	construct validity	Spearman's rank correlation coefficient 0.292 P value: <0.01
Piva, 2004[400] Index: Get Up and Go Test Reference: ADLS (Activities of Daily Living) of the Knee Outcome Surgery	USA Size: 105 Mean age: 62 % of females: 76.19	concurrent validity	Pearson Product-Moment correlation coefficient -0.34 P value: <0.001
Piva, 2004[400] Index: Get Up and Go Test Reference: SF-36: bodily pain	USA Size: 105 Mean age: 62 % of females: 76.19	concurrent validity	Pearson Product-Moment correlation coefficient -0.27 P value: 0.005
Piva, 2004[400] Index: Get Up and Go Test Reference: SF-36: general health	USA Size: 105 Mean age: 62 % of females: 76.19	concurrent validity	Pearson Product-Moment correlation coefficient -0.28 P value: 0.005
Piva, 2004[400] Index: Get Up and Go Test Reference: SF-36: mental health	USA Size: 105 Mean age: 62 % of females: 76.19	concurrent validity	Pearson Product-Moment correlation coefficient -0.34 P value: <0.001
Piva, 2004[400] Index: Get Up and Go Test Reference: SF-36: physical function	USA Size: 105 Mean age: 62 % of females: 76.19	concurrent validity	Pearson Product-Moment correlation coefficient -0.44 P value: <0.001
Piva, 2004[400] Index: Get Up and Go Test Reference: SF-36: role-emotional	USA Size: 105 Mean age: 62 % of females: 76.19	concurrent validity	Pearson Product-Moment correlation coefficient -0.23 P value: 0.021
Piva, 2004[400] Index: Get Up and Go Test Reference: SF-36: role-physical	USA Size: 105 Mean age: 62 % of females: 76.19	concurrent validity	Pearson Product-Moment correlation coefficient -0.15 P value: 0.128
Piva, 2004[400] Index: Get Up and Go Test Reference: SF-36: social function	USA Size: 105 Mean age: 62 % of females: 76.19	concurrent validity	Pearson Product-Moment correlation coefficient -0.17 P value: 0.081
Piva, 2004[400] Index: Get Up and Go Test Reference: SF-36: vitality	USA Size: 105 Mean age: 62 % of females: 76.19	concurrent validity	Pearson Product-Moment correlation coefficient -0.13 P value: 0.195

Appendix Table F49. Validity of the functional tests in patients with knee OA (continued)

Author, year Index Reference methods	Country Size Mean age % of females	Validity	Estimate, significance
Piva, 2004[400] Index: Get Up and Go Test Reference: WOMAC: Likert version	USA Size: 105 Mean age: 62 % of females: 76.19	concurrent validity	Pearson Product-Moment correlation coefficient 0.39 P value: <0.001
Lankhorst, 1982[92] Index: Number of steps Reference: Endurance and maximal impulse	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis -0.031 P value: NR
Lankhorst, 1982[92] Index: Number of steps Reference: Maximal isometric torque	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis 0.609 P value: NR
Lankhorst, 1982[92] Index: Stair climbing Reference: Endurance and maximal impulse	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis 0.297 P value: NR
Lankhorst, 1982[92] Index: Stair climbing Reference: Maximal isometric torque	The Netherlands Size: 24 Mean age: NR % of females: NR	construct validity	Factor analysis 0.034 P value: NR
Steultjens, 1999[401] Index: IRGL dexterity Reference: Keefe and Block (adapted version) + subscales of 4 questionnaires (The Influence of Rheumatic Disease on General Health and Lifestyle mobility subscale that is a Dutch adaptation of the Arthritis Impact Measurement Scales; Nottingham Health Profile mobility subscale; EuroQoL mobility subscale; QR & S questionnaire (Questionnaire Rising and Sitting Down))	Netherlands Size: 198 Mean age: 68 % of females: 78.3	factor analysis	factor analysis 0.11 P value: NR
Steultjens, 1999[401] Index: IRGL dexterity Reference: The Influence of Rheumatic Disease on General Health and Lifestyle mobility subscale and EuroQoL self-care subscale that measures self-reported disability in self-care	Netherlands Size: 198 Mean age: 68 % of females: 78.3	factor analysis	factor analysis 0.67 P value: NR

Abbreviations:
J-MAP: Joint-Specific Multidimensional Assessment of Pain
SF-36: 36-Item Short Form Health Survey
KPS: Knee Pain Scale

Appendix Table F49. Validity of the functional tests in patients with knee OA (continued)

CES –D: Center for Epidemiologic Studies Depression Scale
FAST: Fitness and Arthritis in Seniors Trial
ADL: Activities of Daily Living
IADL: Instrumental Activities of Daily Living
KPSI: Knee Patient -Specific Index
LEAP: Lower Extremity Activity Profile
MPQ-PRI: McGill Pain Questionnaire- Pain Rating Index
WIQ: Walking Impairment Questionnaire
AIMS2-SF: Short form Arthritis Impact Measurement Scale 2
EQ-5D: EuroQoL (first part consisting of 5 questions covering 5 dimensions)
MCS: Mental Component Summary
EQ-VAS: EuroQoL-Visual Analogue Scale
HAQ: DI: Health Assessment Questionnaire: Disability Index
WOMAC: Western Ontario McMaster Universities Osteoarthritis Index
HAQ: Health Assessment Questionnaire
AAS: Adjusted Activity Score
VAS: Visual Analogue Scale
TUG: Timed Up and Go Test
MAS: Maximal Activity Score
IRGL: The Influence of Rheumatic Disease on General Health and Lifestyle mobility subscale

Appendix Table F50. Validity of the scales in patients with knee OA

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
O'Malley, 2003[402] Index: J-MAP: pain affect subscale Reference: AIMS2 (Arthritis Impact Measurement Scale) pain	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain affect convergent and discriminant validity	NR **0.56** P value: <0.001
O'Malley, 2003[402] Index: J-MAP: pain sensory subscale Reference: AIMS2 (Arthritis Impact Measurement Scale) pain	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain sensory convergent and discriminant validity	NR 0.49 P value: <0.001
O'Malley, 2003[402] Index: J-MAP: pain affect subscale Reference: AIMS2 walking and bending	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain affect convergent and discriminant validity	NR **0.53** P value: <0.001
O'Malley, 2003[402] Index: J-MAP: pain sensory subscale Reference: AIMS2 walking and bending	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain sensory convergent and discriminant validity	NR 0.43 P value: <0.001
O'Malley, 2003[402] Index: J-MAP: pain affect subscale Reference: General Health Satisfaction	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain affect convergent and discriminant validity	NR **0.64** P value: <0.001
O'Malley, 2003[402] Index: J-MAP: pain sensory subscale Reference: General Health Satisfaction	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain sensory convergent and discriminant validity	NR 0.36 P value: <0.001
O'Malley, 2003[402] Index: J-MAP: pain affect subscale Reference: J-MAP: pain sensory subscale	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain affect convergent and discriminant validity	NR 0.56 P value: <0.001
O'Malley, 2003[402] Index: J-MAP: pain affect subscale Reference: Perceived stress scale	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain affect convergent and discriminant validity	NR 0.19 P value: NR
O'Malley, 2003[402] Index: J-MAP: pain sensory subscale Reference: Perceived stress scale	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain sensory convergent and discriminant validity	NR 0.32 P value: <0.001
O'Malley, 2003[402] Index: J-MAP: pain affect subscale Reference: SF-36 bodily pain	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain affect convergent and discriminant validity	NR 0.59 P value: <0.001
O'Malley, 2003[402] Index: J-MAP: pain sensory subscale Reference: SF-36 bodily pain	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain sensory convergent and discriminant validity	NR 0.63 P value: <0.001
O'Malley, 2003[402] Index: J-MAP: pain affect subscale Reference: SF-36 general health	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain affect convergent and discriminant validity	NR 0.34 P value: <0.001

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
O'Malley, 2003[402] Index: J-MAP: pain sensory subscale Reference: SF-36 general health	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain sensory convergent and discriminant validity	NR 0.36 P value: <0.001
O'Malley, 2003[402] Index: J-MAP: pain affect subscale Reference: SF-36 mental health	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain affect convergent and discriminant validity	NR 0.33 P value: <0.001
O'Malley, 2003[402] Index: J-MAP: pain sensory subscale Reference: SF-36 mental health	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain sensory convergent and discriminant validity	NR 0.33 P value: <0.001
O'Malley, 2003[402] Index: J-MAP: pain affect subscale Reference: SF-36 physical functioning	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain affect convergent and discriminant validity	NR 0.44 P value: <0.001
O'Malley, 2003[402] Index: J-MAP: pain sensory subscale Reference: SF-36 physical functioning	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain sensory convergent and discriminant validity	NR 0.4 P value: <0.001
O'Malley, 2003[402] Index: J-MAP: pain affect subscale Reference: SF-36 role emotional	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain affect convergent and discriminant validity	NR 0.08 P value: NR
O'Malley, 2003[402] Index: J-MAP: pain sensory subscale Reference: SF-36 role emotional	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain sensory convergent and discriminant validity	NR 0.17 P value: NR
O'Malley, 2003[402] Index: J-MAP: pain affect subscale Reference: SF-36 role physical	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain affect convergent and discriminant validity	NR 0.24 P value: <0.01
O'Malley, 2003[402] Index: J-MAP: pain sensory subscale Reference: SF-36 role physical	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain sensory convergent and discriminant validity	NR 0.15 P value: NR
O'Malley, 2003[402] Index: J-MAP: pain affect subscale Reference: SF-36 social functioning	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain affect convergent and discriminant validity	NR 0.44 P value: <0.001
O'Malley, 2003[402] Index: J-MAP: pain sensory subscale Reference: SF-36 social functioning	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain sensory convergent and discriminant validity	NR 0.42 P value: <0.001
O'Malley, 2003[402] Index: J-MAP: pain affect subscale Reference: SF-36 vitality	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain affect convergent and discriminant validity	NR 0.29 P value: <0.001
O'Malley, 2003[402] Index: J-MAP: pain sensory subscale Reference: SF-36 vitality	USA Size: 180 Mean age: 56 % of females: 7	Domain: pain sensory convergent and discriminant validity	NR 0.31 P value: <0.001

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Steultjens, 1999[401] Index: Keefe and Block (adapted version) Reference: Keefe and Block (adapted version) + subscales of 4 questionnaires (The Influence of Rheumatic Disease on General Health and Lifestyle mobility subscale that is a Dutch adaptation of the Arthritis Impact Measurement Scales; Nottingham Health Profile mobility subscale; EuroQoL mobility subscale; QR & S questionnaire (Questionnaire Rising and Sitting Down))	Netherlands Size: 198 Mean age: 68 % of females: 78.3	factor analysis	factor analysis 0.79 P value: NR
Steultjens, 1999[401] Index: Keefe and Block (adapted version) Reference: The Influence of Rheumatic Disease on General Health and Lifestyle mobility subscale and EuroQoL self-care subscale that measures self-reported disability in self-care	Netherlands Size: 198 Mean age: 68 % of females: 78.3	factor analysis	factor analysis -0.01 P value: NR
Lingard, 2001[403] Index: Knee Society Clinical Rating system: pain score Reference: SF-36: bodily pain score	USA, UK and Australia Size: 697 Mean age: 70 % of females: 58.9	Domain: pain construct validity	Pearson coefficient 0.31 P value: NR
Lingard, 2001[403] Index: Knee Society Clinical Rating system: function score Reference: SF-36:Physical Functioning score	USA, UK and Australia Size: 697 Mean age: 70 % of females: 58.9	Domain: function construct validity	Pearson coefficient 0.63 P value: NR
Lingard, 2001[403] Index: Knee Society Clinical Rating system: pain score Reference: WOMAC: pain scale	USA, UK and Australia Size: 697 Mean age: 70 % of females: 58.9	Domain: pain construct validity	Pearson coefficient 0.44 P value: NR
Lingard, 2001[403] Index: Knee Society Clinical Rating system: function score Reference: WOMAC: function score	USA, UK and Australia Size: 697 Mean age: 70 % of females: 58.9	Domain: function construct validity	Pearson coefficient 0.46 P value: NR
Wright, 2010[363] Index: KPSI Reference: Knee Society score, pain score	Canada Size: 100 Mean age: 69.7 % of females: 67	Domain: pain construct validity	Pearson coefficient 0.47 P value: NR
Wright, 2010[363] Index: KPSI Reference: Knee Society score, pain score	Canada Size: 100 Mean age: 69.7 % of females: 67	Domain: function construct validity	Pearson coefficient 0.36 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Wright, 2010[363] Index: KPSI Reference: SF-36	Canada Size: 100 Mean age: 69.7 % of females: 67	Domain: pain construct validity	Pearson coefficient 0.6 P value: NR
Wright, 2010[363] Index: KPSI Reference: SF-36	Canada Size: 100 Mean age: 69.7 % of females: 67	Domain: physical function construct validity	Pearson coefficient 0.56 P value: NR
Wright, 2010[363] Index: KPSI Reference: SF-36	Canada Size: 100 Mean age: 69.7 % of females: 67	Domain: role physical construct validity	Pearson coefficient 0.38 P value: NR
Wright, 2010[363] Index: KPSI Reference: SF-36	Canada Size: 100 Mean age: 69.7 % of females: 67	Domain: vitality construct validity	Pearson coefficient 0.39 P value: NR
Wright, 2010[363] Index: KPSI Reference: SF-36	Canada Size: 100 Mean age: 69.7 % of females: 67	Domain: general health construct validity	Pearson coefficient 0.32 P value: NR
Wright, 2010[363] Index: KPSI Reference: SF-36	Canada Size: 100 Mean age: 69.7 % of females: 67	Domain: physical component summary construct validity	Pearson coefficient 0.53 P value: NR
Wright, 2010[363] Index: KPSI Reference: SF-36	Canada Size: 100 Mean age: 69.7 % of females: 67	Domain: timed get-up-and-go construct validity	Pearson coefficient 0.59 P value: NR
Wright, 2010[363] Index: KPSI Reference: SF-36	Canada Size: 100 Mean age: 69.7 % of females: 67	Domain: 50-ft walk construct validity	Pearson coefficient 0.26 P value: NR
Wright, 2010[363] Index: KPSI Reference: WOMAC: pain scale	Canada Size: 100 Mean age: 69.7 % of females: 67	Domain: pain construct validity	Pearson coefficient 0.72 P value: NR
Wright, 2010[363] Index: KPSI Reference: WOMAC: physical function scale	Canada Size: 100 Mean age: 69.7 % of females: 67	Domain: physical function construct validity	Pearson coefficient 0.79 P value: NR
Finch, 1995[404] Index: LEAP Reference: Global functional rating	Canada Size: 32 Mean age: 66 % of females: 43.7	Domain: change in patient satisfaction social activities construct validity	Pearson coefficient 0.456 P value: 0.013
Finch, 1995[404] Index: LEAP Reference: Global functional rating	Canada Size: 32 Mean age: 66 % of females: 43.7	Domain: change in sleep and rest satisfaction construct validity	Pearson coefficient 0.366 P value: 0.046
Finch, 1995[404] Index: LEAP Reference: SPW (Self-Paced Walk)	Canada Size: 32 Mean age: 66 % of females: 43.7	Domain: change in patient satisfaction with emotional health construct validity	Pearson coefficient 0.44 P value: 0.015

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Finch, 1995[404] Index: LEAP Reference: ROM (range of motion)	Canada Size: 32 Mean age: 66 % of females: 43.7	Domain: functional ability	The lack of significant correlations between ROM and the LEAP suggests that range of a given joint is not as crucial a component of physical function as once thought. This means we cannot assume that increase in ROM reflects improved functional ability P value: NS
Stucki, 1998[352] Index: Lequesne knee: Composite Reference: Extension deficit	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: composite construct validity	Spearman's rank correlation coefficient 0.39 P value: <0.05
Stucki, 1998[352] Index: Lequesne knee: function Reference: Extension deficit	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: function construct validity	Spearman's rank correlation coefficient 0.38 P value: <0.05
Stucki, 1998[352] Index: Lequesne knee: pain Reference: Extension deficit	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: pain construct validity	Spearman's rank correlation coefficient 0.37 P value: NR
Stucki, 1998[352] Index: Lequesne knee: walk distance Reference: Extension deficit	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: walk distance construct validity	Spearman's rank correlation coefficient 0.17 P value: NR
Stucki, 1998[352] Index: Lequesne knee: Composite Reference: Flexion	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: composite construct validity	Spearman's rank correlation coefficient -0.51 P value: <0.01
Stucki, 1998[352] Index: Lequesne knee: function Reference: Flexion	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: function construct validity	Spearman's rank correlation coefficient -0.62 P value: <0.01
Stucki, 1998[352] Index: Lequesne knee: pain Reference: Flexion	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: pain construct validity	Spearman's rank correlation coefficient -0.16 P value: NR
Stucki, 1998[352] Index: Lequesne knee: walk distance Reference: Flexion	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: walk distance construct validity	Spearman's rank correlation coefficient -0.48 P value: <0.05
Stucki, 1998[352] Index: Lequesne knee: Composite Reference: Kellgren-Lawrence scale	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: composite construct validity	Spearman's rank correlation coefficient 0.47 P value: <0.01
Stucki, 1998[352] Index: Lequesne knee: function Reference: Kellgren-Lawrence scale	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: function construct validity	Spearman's rank correlation coefficient 0.59 P value: <0.01

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Stucki, 1998[352] Index: Lequesne knee: pain Reference: Kellgren-Lawrence scale	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: pain construct validity	Spearman's rank correlation coefficient 0.1 P value: NR
Stucki, 1998[352] Index: Lequesne knee: walk distance Reference: Kellgren-Lawrence scale	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: walk distance construct validity	Spearman's rank correlation coefficient 0.42 P value: <0.05
Faucher, 2002[394] Index: Lequesne index Reference: VAS Dw (VAS discomfort in walking for daily living activities)	France Size: 19 Mean age: 70.31 % of females: 63.16	convergent validity	Spearman’s rank correlation coefficient 0.64 P value: NR
Faucher, 2002[394] Index: Lequesne index Reference: VAS handicap	France Size: 19 Mean age: 70.31 % of females: 63.16	convergent validity	Spearman’s rank correlation coefficient 0.38 P value: NR
Faucher, 2002[394] Index: Lequesne index Reference: VAS pain score	France Size: 19 Mean age: 70.31 % of females: 63.16	convergent validity	Spearman’s rank correlation coefficient 0.45 P value: NR
Faucher, 2002[394] Index: Lequesne index Reference: WOMAC: pain subscale	France Size: 19 Mean age: 70.31 % of females: 63.16	convergent validity	Spearman’s rank correlation coefficient 0.56 P value: NR
Faucher, 2002[394] Index: Lequesne index Reference: Circumference of the thigh	France Size: 19 Mean age: 70.31 % of females: 63.16	Domain: functional limitation divergent validity	Spearman’s rank correlation coefficient 0.17 P value: NR
Faucher, 2002[394] Index: Lequesne index Reference: Hospital Anxiety and Depression Scale(Score of anxiety)	France Size: 19 Mean age: 70.31 % of females: 63.16	Domain: functional limitation divergent validity	Spearman’s rank correlation coefficient 0.15 P value: NR
Faucher, 2002[394] Index: Lequesne index Reference: Hospital Anxiety and Depression Scale(Score of depression)	France Size: 19 Mean age: 70.31 % of females: 63.16	Domain: functional limitation divergent validity	Spearman’s rank correlation coefficient 0.3 P value: NR
Faucher, 2002[394] Index: Lequesne index Reference: Kellgren-Lawrence	France Size: 19 Mean age: 70.31 % of females: 63.16	Domain: functional limitation divergent validity	Spearman’s rank correlation coefficient 0.11 P value: NR
Faucher, 2002[394] Index: Lequesne index Reference: WOMAC: function subscale	France Size: 19 Mean age: 70.31 % of females: 63.16	convergent validity	Spearman’s rank correlation coefficient 0.75 P value: NR
Salaffi, 1991[405] Index: MPQ-PRI affective (Italian version) Reference: AIMS (Italian version of Arthritis Impact Measurement Scale)	Italy Size: 61 Mean age: 63.5 % of females: 100	Domain: affective construct validity	Pearson's product moment correlation 0.567 P value: <0.001

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Salaffi, 1991[405] Index: MPQ-PRI evaluative (Italian version) Reference: AIMS (Italian version of Arthritis Impact Measurement Scale)	Italy Size: 61 Mean age: 63.5 % of females: 100	Domain: evaluative construct validity	Pearson's product moment correlation 0.559 P value: <0.001
Salaffi, 1991[405] Index: MPQ-PRI sensory (Italian version) Reference: AIMS (Italian version of Arthritis Impact Measurement Scale)	Italy Size: 61 Mean age: 63.5 % of females: 100	Domain: sensory construct validity	Pearson's product moment correlation 0.59 P value: <0.001
Salaffi, 1991[405] Index: MPQ-PRI total (Italian version) Reference: AIMS (Italian version of Arthritis Impact Measurement Scale)	Italy Size: 61 Mean age: 63.5 % of females: 100	Domain: total construct validity	Pearson's product moment correlation 0.607 P value: <0.001
Salaffi, 1991[405] Index: MPQ-PRI affective (Italian version) Reference: PAS (Performance and Activity scale)	Italy Size: 61 Mean age: 63.5 % of females: 100	Domain: affective construct validity	Pearson's product moment correlation -0.508 P value: <0.001
Salaffi, 1991[405] Index: MPQ-PRI evaluative (Italian version) Reference: PAS (Performance and Activity scale)	Italy Size: 61 Mean age: 63.5 % of females: 100	Domain: evaluative construct validity	Pearson's product moment correlation -0.184 P value: NR
Salaffi, 1991[405] Index: MPQ-PRI sensory (Italian version) Reference: PAS (Performance and Activity scale)	Italy Size: 61 Mean age: 63.5 % of females: 100	Domain: sensory construct validity	Pearson's product moment correlation -0.652 P value: <0.001
Salaffi, 1991[405] Index: MPQ-PRI total (Italian version) Reference: PAS (Performance and Activity scale)	Italy Size: 61 Mean age: 63.5 % of females: 100	Domain: total construct validity	Pearson's product moment correlation -0.608 P value: <0.001
Steultjens, 1999[401] Index: Nottingham Health Profile mobility Reference: Keefe and Block (adapted version) + subscales of 4 questionnaires (The Influence of Rheumatic Disease on General Health and Lifestyle mobility subscale that is a Dutch adaptation of the Arthritis Impact Measurement Scales; Nottingham Health Profile mobility subscale; EuroQoL mobility subscale; QR & S questionnaire (Questionnaire Rising and Sitting Down))	Netherlands Size: 198 Mean age: 68 % of females: 78.3	factor analysis	factor analysis 0.72 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Steultjens, 1999[401] Index: Nottingham Health Profile mobility Reference: The Influence of Rheumatic Disease on General Health and Lifestyle mobility subscale and EuroQoL self-care subscale that measures self-reported disability in self-care	Netherlands Size: 198 Mean age: 68 % of females: 78.3	factor analysis	factor analysis 0.21 P value: NR
Ornetti, 2011[406] Index: Patient NRS: "What is the degree of difficulty you have experienced for the daily activities during the last 48 hours due to your (knee or hip) OA?" Reference: Physician NRS	France Size: 881 Mean age: 66.7 % of females: 67.6	construct validity	Spearman's correlation coefficient 0.6 P value: <0.001
Ornetti, 2011[406] Index: Patient NRS: "What is the degree of difficulty you have experienced for the daily activities during the last 48 hours due to your (knee or hip) OA?" Reference: VAS: pain	France Size: 881 Mean age: 66.7 % of females: 67.6	construct validity	Spearman's correlation coefficient 0.666 P value: <0.001
Ornetti, 2011[406] Index: Physician NRS Reference: VAS: pain	France Size: 881 Mean age: 66.7 % of females: 67.6	construct validity	Spearman's correlation coefficient 0.508 P value: <0.001
Ornetti, 2011[406] Index: Patient NRS: "What is the degree of difficulty you have experienced for the daily activities during the last 48 hours due to your (knee or hip) OA?" Reference: VAS: patient global assessment	France Size: 881 Mean age: 66.7 % of females: 67.6	construct validity	Spearman's correlation coefficient 0.714 P value: <0.001
Ornetti, 2011[406] Index: Physician NRS Reference: VAS: patient global assessment	France Size: 881 Mean age: 66.7 % of females: 67.6	construct validity	Spearman's correlation coefficient 0.532 P value: <0.001
Ornetti, 2011[406] Index: Patient NRS: "What is the degree of difficulty you have experienced for the daily activities during the last 48 hours due to your (knee or hip) OA?" Reference: VAS: physician global assessment	France Size: 881 Mean age: 66.7 % of females: 67.6	construct validity	Spearman's correlation coefficient 0.555 P value: <0.001

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Ornetti, 2011[406] Index: Physician NRS Reference: VAS: physician global assessment	France Size: 881 Mean age: 66.7 % of females: 67.6	construct validity	Spearman's correlation coefficient 0.785 P value: <0.001
Ornetti, 2011[406] Index: Patient NRS: "What is the degree of difficulty you have experienced for the daily activities during the last 48 hours due to your (knee or hip) OA?" Reference: WOMAC: function subscale	France Size: 881 Mean age: 66.7 % of females: 67.6	construct validity	Spearman's correlation coefficient 0.616 P value: <0.001
Ornetti, 2011[406] Index: Physician NRS Reference: WOMAC: function subscale	France Size: 881 Mean age: 66.7 % of females: 67.6	construct validity	Spearman's correlation coefficient 0.458 P value: <0.001
Deniston, 1980[392] Index: PGAP instrument: dependence Reference: "How many "good days" have you had out of the last seven?" (The client was asked to interpret words such as "condition" and "good days" in his or her own terms.)	USA Size: 157 Mean age: 69 % of females: 75	In dumps category Domain: Dependence construct validity	Spearman's Rank correlation coefficient 0.07 P value: NR
Deniston, 1980[392] Index: PGAP instrument: dependence Reference: "How many "good days" have you had out of the last seven?" (The client was asked to interpret -words such as "condition" and "good days" in his or her own terms.)	USA Size: 157 Mean age: 69 % of females: 75	Not in dumps category Domain: Dependence construct validity	Spearman's Rank correlation coefficient 0.09 P value: NR
Deniston, 1980[392] Index: PGAP instrument: difficulty Reference: "How many "good days" have you had out of the last seven?" (The client was asked to interpret -words such as "condition" and "good days" in his or her own terms.)	USA Size: 157 Mean age: 69 % of females: 75	In dumps category Domain: Difficulty construct validity	Spearman's Rank correlation coefficient 0.44 P value: <0.01
Deniston, 1980[392] Index: PGAP instrument: difficulty Reference: "How many "good days" have you had out of the last seven?" (The client was asked to interpret -words such as "condition" and "good days" in his or her own terms.)	USA Size: 157 Mean age: 69 % of females: 75	Not in dumps category Domain: Difficulty construct validity	Spearman's Rank correlation coefficient 0.49 P value: <0.01

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Deniston, 1980[392] Index: PGAP instrument: pain Reference: "How many "good days" have you had out of the last seven?" (The client was asked to interpret words such as "condition" and "good days" in his or her own terms.)	USA Size: 157 Mean age: 69 % of females: 75	In dumps category Domain: Pain construct validity	Spearman's Rank correlation coefficient 0.57 P value: <0.01
Deniston, 1980[392] Index: PGAP instrument: pain Reference: "How many "good days" have you had out of the last seven?" (The client was asked to interpret words such as "condition" and "good days" in his or her own terms.)	USA Size: 157 Mean age: 69 % of females: 75	Not in dumps category Domain: Pain construct validity	Spearman's Rank correlation coefficient 0.51 P value: <0.01
Deniston, 1980[392] Index: PGAP instrument: total status Reference: "How many "good days" have you had out of the last seven?" (The client was asked to interpret words such as "condition" and "good days" in his or her own terms.)	USA Size: 157 Mean age: 69 % of females: 75	Domain: Total status construct validity	Spearman's Rank correlation coefficient 0.44 P value: <0.01
Deniston, 1980[392] Index: PGAP instrument: total status Reference: "How many "good days" have you had out of the last seven?" (The client was asked to interpret words such as "condition" and "good days" in his or her own terms.)	USA Size: 157 Mean age: 69 % of females: 75	In dumps category Domain: Total status construct validity	Spearman's Rank correlation coefficient 0.47 P value: <0.01
Deniston, 1980[392] Index: PGAP instrument: joint condition Reference: Client assessment of "Good days": "How many "good days" have you had out of the last seven?" (The client was asked to interpret words such as "condition" and 'good days" in his or her own terms.)	USA Size: 157 Mean age: 69 % of females: 75	Domain: Difficulty construct validity	Spearman's Rank correlation coefficient 0.4 P value: NR
Deniston, 1980[392] Index: PGAP instrument: pain Reference: Client assessment of "Good days": "How many "good days" have you had out of the last seven?" (The client was asked to interpret words such as "condition" and 'good days" in his or her own terms.)	USA Size: 157 Mean age: 69 % of females: 75	Domain: Difficulty construct validity	Spearman's Rank correlation coefficient 0.46 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Deniston, 1980[392] Index: PGAP instrument: dependence Reference: Client assessment of ability to deal: "Overall how would you rate your ability to deal with your arthritis and the problems it causes; would you say excellent, good, fair, or poor?"	USA Size: 157 Mean age: 69 % of females: 75	Domain: Pain construct validity	Spearman's Rank correlation coefficient 0.18 P value: NR
Deniston, 1980[392] Index: PGAP instrument: difficulty Reference: Client assessment of ability to deal: "Overall how would you rate your ability to deal with your arthritis and the problems it causes; would you say excellent, good, fair, or poor?"	USA Size: 157 Mean age: 69 % of females: 75	Domain: Difficulty construct validity	Spearman's Rank correlation coefficient 0.26 P value: NR
Deniston, 1980[392] Index: PGAP instrument: joint condition Reference: Client assessment of ability to deal: "Overall how would you rate your ability to deal with your arthritis and the problems it causes; would you say excellent, good, fair, or poor?"	USA Size: 157 Mean age: 69 % of females: 75	Domain: Difficulty construct validity	Spearman's Rank correlation coefficient 0.24 P value: NR
Deniston, 1980[392] Index: PGAP instrument: pain Reference: Client assessment of ability to deal: "Overall how would you rate your ability to deal with your arthritis and the problems it causes; would you say excellent, good, fair, or poor?"	USA Size: 157 Mean age: 69 % of females: 75	Domain: Difficulty construct validity	Spearman's Rank correlation coefficient 0.2 P value: NR
Deniston, 1980[392] Index: PGAP instrument: dependence Reference: Client assessment of joint condition: "Overall how would you rate the condition of your joints; would you say excellent, good, fair, or poor?"	USA Size: 157 Mean age: 69 % of females: 75	Domain: Pain construct validity	Spearman's Rank correlation coefficient 0.32 P value: NR
Deniston, 1980[392] Index: PGAP instrument: difficulty Reference: Client assessment of joint condition: "Overall how would you rate the condition of your joints; would you say excellent, good, fair, or poor?"	USA Size: 157 Mean age: 69 % of females: 75	Domain: Difficulty construct validity	Spearman's Rank correlation coefficient 0.33 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Deniston, 1980[392] Index: PGAP instrument: joint condition Reference: Client assessment of joint condition: "Overall how would you rate the condition of your joints; would you say excellent, good, fair, or poor?"	USA Size: 157 Mean age: 69 % of females: 75	Domain: Difficulty construct validity	Spearman's Rank correlation coefficient 0.39 P value: NR
Deniston, 1980[392] Index: PGAP instrument: pain Reference: Client assessment of joint condition: "Overall how would you rate the condition of your joints; would you say excellent, good, fair, or poor?"	USA Size: 157 Mean age: 69 % of females: 75	Domain: Difficulty construct validity	Spearman's Rank correlation coefficient 0.37 P value: NR
Deniston, 1980[392] Index: PGAP instrument: dependence Reference: Grip strength	USA Size: 157 Mean age: 69 % of females: 75	Domain: Pain construct validity	Spearman's Rank correlation coefficient 0.12 P value: NR
Deniston, 1980[392] Index: PGAP instrument: difficulty Reference: Grip strength	USA Size: 157 Mean age: 69 % of females: 75	Domain: Difficulty construct validity	Spearman's Rank correlation coefficient 0.26 P value: NR
Deniston, 1980[392] Index: PGAP instrument: joint condition Reference: Grip strength	USA Size: 157 Mean age: 69 % of females: 75	Domain: Difficulty construct validity	Spearman's Rank correlation coefficient 0.2 P value: NR
Deniston, 1980[392] Index: PGAP instrument: pain Reference: Grip strength	USA Size: 157 Mean age: 69 % of females: 75	Domain: Difficulty construct validity	Spearman's Rank correlation coefficient 0.07 P value: NR
Deniston, 1980[392] Index: PGAP instrument: dependence Reference: Morning stiffness	USA Size: 157 Mean age: 69 % of females: 75	Domain: Pain construct validity	Spearman's Rank correlation coefficient 0.06 P value: NR
Deniston, 1980[392] Index: PGAP instrument: difficulty Reference: Morning stiffness	USA Size: 157 Mean age: 69 % of females: 75	Domain: Difficulty construct validity	Spearman's Rank correlation coefficient 0.14 P value: NR
Deniston, 1980[392] Index: PGAP instrument: joint condition Reference: Morning stiffness	USA Size: 157 Mean age: 69 % of females: 75	Domain: Difficulty construct validity	Spearman's Rank correlation coefficient 0.08 P value: NR
Deniston, 1980[392] Index: PGAP instrument: pain Reference: Morning stiffness	USA Size: 157 Mean age: 69 % of females: 75	Domain: Difficulty construct validity	Spearman's Rank correlation coefficient 0.01 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Deniston, 1980[392] Index: PGAP instrument: dependence Reference: Professional assessment of ability to deal: "Overall how would you rate the client's ability to deal with his arthritis and the problems it causes; would you say excellent, good, fair, or poor?"	USA Size: 157 Mean age: 69 % of females: 75	Domain: Pain construct validity	Spearman's Rank correlation coefficient -0.09 P value: NR
Deniston, 1980[392] Index: PGAP instrument: difficulty Reference: Professional assessment of ability to deal: "Overall how would you rate the client's ability to deal with his arthritis and the problems it causes; would you say excellent, good, fair, or poor?"	USA Size: 157 Mean age: 69 % of females: 75	Domain: Difficulty construct validity	Spearman's Rank correlation coefficient 0.08 P value: NR
Deniston, 1980[392] Index: PGAP instrument: joint condition Reference: Professional assessment of ability to deal: "Overall how would you rate the client's ability to deal with his arthritis and the problems it causes; would you say excellent, good, fair, or poor?"	USA Size: 157 Mean age: 69 % of females: 75	Domain: Difficulty construct validity	Spearman's Rank correlation coefficient 0.04 P value: NR
Deniston, 1980[392] Index: PGAP instrument: pain Reference: Professional assessment of ability to deal: "Overall how would you rate the client's ability to deal with his arthritis and the problems it causes; would you say excellent, good, fair, or poor?"	USA Size: 157 Mean age: 69 % of females: 75	Domain: Difficulty construct validity	Spearman's Rank correlation coefficient 0.14 P value: NR
Deniston, 1980[392] Index: PGAP instrument: dependence Reference: Professional assessment of joint condition: "Overall how would you rate the client's joint status; would you say excellent, good, fair, or poor?"	USA Size: 157 Mean age: 69 % of females: 75	Domain: Pain construct validity	Spearman's Rank correlation coefficient 0.11 P value: NR
Deniston, 1980[392] Index: PGAP instrument: difficulty Reference: Professional assessment of joint condition: "Overall how would you rate the client's joint status; would you say excellent, good, fair, or poor?"	USA Size: 157 Mean age: 69 % of females: 75	Domain: Difficulty construct validity	Spearman's Rank correlation coefficient -0.11 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Deniston, 1980[392] Index: PGAP instrument: joint condition Reference: Professional assessment of joint condition: "Overall how would you rate the client's joint status; would you say excellent, good, fair, or poor?"	USA Size: 157 Mean age: 69 % of females: 75	Domain: Difficulty construct validity	Spearman's Rank correlation coefficient 0.2 P value: NR
Deniston, 1980[392] Index: PGAP instrument: pain Reference: Professional assessment of joint condition: "Overall how would you rate the client's joint status; would you say excellent, good, fair, or poor?"	USA Size: 157 Mean age: 69 % of females: 75	Domain: Difficulty construct validity	Spearman's Rank correlation coefficient -0.22 P value: NR
Possley, [388] Index: SF-36 Physical Composite Score Reference: 3-minute stair climb/descend	USA Size: 105 Mean age: 67.5 % of females: 11	Nondepressed patients Domain: physical composite construct validity	Pearson r correlation coefficient 0.3 P value: 0.05
Possley, [388] Index: SF-36 Physical Composite Score Reference: 6 minute walk	USA Size: 105 Mean age: 67.5 % of females: 11	Nondepressed patients Domain: physical composite construct validity	Pearson r correlation coefficient 0.25 P value: 0.05
Possley, [388] Index: SF-36 Physical Composite Score Reference: 6 minute walk	USA Size: 105 Mean age: 67.5 % of females: 11	Depressed patients Domain: physical composite construct validity	Pearson r correlation coefficient 0.3 P value: NR
Possley, [388] Index: SF-36 Physical Composite Score Reference: -3-minute stair climb/descend	USA Size: 105 Mean age: 67.5 % of females: 11	Depressed patients Domain: physical composite construct validity	Pearson r correlation coefficient 0.22 P value: NR
Clark, 1998[380] Index: SF-36: bodily pain Reference: Osteoarthritis Severity Scale: Assessed by 12 questions: 1)Persistence of pain in worst knee; 2) Intensity of pain in worst knee; 3)Diurnal duration of pain and stiffness in the worst knee; 4) Frequency of severe pain in the worst knee; 5) Pain and stiffness while walking; 6)Pain and stiffness while using stairs; 7)Pain and stiffness while standing; 8)Pain and stiffness while resting; 9)Pain and stiffness while sleeping;10)Sensations of crepitus: clicking or sandpaper sensation; 11) Impaired function : limping; 12)Impaired function: knees giving way with activity	USA Size: 415 Mean age: 66 % of females: 0	construct validity	Pearson correlation coefficient -0.58 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Lingard, 2001[403] Index: SF-36: bodily pain score Reference: Knee Society Clinical Rating system: pain score	USA, UK and Australia Size: 697 Mean age: 70 % of females: 58.9	Domain: pain construct validity	Pearson coefficient 0.35 P value: NR
Lingard, 2001[403] Index: SF-36: bodily pain score Reference: WOMAC: pain scale	USA, UK and Australia Size: 697 Mean age: 70 % of females: 58.9	Domain: pain construct validity	Pearson coefficient 0.5 P value: NR
Clark, 1998[380] Index: SF-36: general health perceptions Reference: Osteoarthritis Severity Scale:	USA Size: 415 Mean age: 66 % of females: 0	construct validity	Pearson correlation coefficient -0.35 P value: NR
Clark, 1998[380] Index: SF-36: Physical component summary Reference: Osteoarthritis Severity Scale:	USA Size: 415 Mean age: 66 % of females: 0	construct validity	Pearson correlation coefficient -0.48 P value: NR
Clark, 1998[380] Index: SF-36: Physical function index Reference: Osteoarthritis Severity Scale:	USA Size: 415 Mean age: 66 % of females: 0	construct validity	Pearson correlation coefficient -0.54 P value: NR
Clark, 1998[380] Index: SF-36: Role performance with physical limitations Reference: Osteoarthritis Severity Scale:	USA Size: 415 Mean age: 66 % of females: 0	construct validity	Pearson correlation coefficient -0.4 P value: NR
Clark, 1998[380] Index: SF-36: social functioning Reference: Osteoarthritis Severity Scale:	USA Size: 415 Mean age: 66 % of females: 0	construct validity	Pearson correlation coefficient -0.47 P value: NR
Clark, 1998[380] Index: SF-36: vitality Reference: Osteoarthritis Severity Scale:	USA Size: 415 Mean age: 66 % of females: 0	construct validity	Pearson correlation coefficient -0.37 P value: NR
Roos, 1999[407] Index: SF-36:bodily pain subscale Reference: WOMAC: Likert version: function scale	Sweden Size: 52 Mean age: 48 % of females: 25	Domain: bodily pain construct validity	Spearman's correlation coefficient 0.65 P value: <0.002
Roos, 1999[407] Index: SF-36:bodily pain subscale Reference: WOMAC: Likert version :pain scale	Sweden Size: 52 Mean age: 48 % of females: 25	Domain: bodily pain construct validity	Spearman's correlation coefficient 0.67 P value: <0.002
Roos, 1999[407] Index: SF-36:bodily pain subscale Reference: WOMAC: Likert version: stiffness	Sweden Size: 52 Mean age: 48 % of females: 25	Domain: bodily pain construct validity	Spearman's correlation coefficient 0.44 P value: <0.002
Brazier, 1999[408] Index: SF-36:pain Reference: WOMAC: pain subscale	UK Mean age: 64 % of females: NR	Domain: function convergent validity	Spearman's rank correlation coefficient 0.7 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Roos, 1999[407] Index: SF-36:physical function subscale Reference: WOMAC: Likert version: function scale	Sweden Size: 52 Mean age: 48 % of females: 25	Domain: physical function construct validity	Spearman's correlation coefficient 0.64 P value: <0.002
Roos, 1999[407] Index: SF-36:physical function subscale Reference: WOMAC: Likert version: pain scale	Sweden Size: 52 Mean age: 48 % of females: 25	Domain: physical function construct validity	Spearman's correlation coefficient 0.4 P value: <0.002
Roos, 1999[407] Index: SF-36:physical function subscale Reference: WOMAC: Likert version: stiffness	Sweden Size: 52 Mean age: 48 % of females: 25	Domain: physical function construct validity	Spearman's correlation coefficient 0.45 P value: <0.002
Brazier, 1999[408] Index: SF-36:physical functioning Reference: WOMAC: function subscale	UK Size: Mean age: mean age of knee replacement sample: 71 and rheumatology clinic sample: 64 % of females: NR	convergent validity	Spearman's rank correlation coefficient 0.7 P value: NR
Lingard, 2001[403] Index: SF-36:Physical Functioning score Reference: Knee Society Clinical Rating system: function score	USA, UK and Australia Size: 697 Mean age: 70 % of females: 58.9	Domain: function construct validity	Pearson coefficient 0.72 P value: NR
Lingard, 2001[403] Index: SF-36:Physical Functioning score Reference: WOMAC: function score	USA, UK and Australia Size: 697 Mean age: 70 % of females: 58.9	Domain: function construct validity	Pearson coefficient 0.69 P value: NR
Roos, 1999[407] Index: SF-36:Question 11a:"I seem to get sick a little easier than other people" definitely true-definitely false (1-5) Reference: WOMAC: Likert version: function scale	Sweden Size: 52 Mean age: 48 % of females: 25	Domain: quality of life construct validity	Spearman's correlation coefficient 0.03 P value: NR
Roos, 1999[407] Index: SF-36:Question 11a:"I seem to get sick a little easier than other people" definitely true-definitely false (1-5) Reference: WOMAC: Likert version: pain scale	Sweden Size: 52 Mean age: 48 % of females: 25	Domain: quality of life construct validity	Spearman's correlation coefficient 0.08 P value: NR
Roos, 1999[407] Index: SF-36:Question 11a:"I seem to get sick a little easier than other people" definitely true-definitely false (1-5) Reference: WOMAC: Likert version: stiffness	Sweden Size: 52 Mean age: 48 % of females: 25	Domain: quality of life construct validity	Spearman's correlation coefficient -0.21 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Steultjens, 1999[401] Index: The QR & S high chair Reference: Keefe and Block (adapted version) + subscales of 4 questionnaires (The Influence of Rheumatic Disease on General Health and Lifestyle mobility subscale that is a Dutch adaptation of the Arthritis Impact Measurement Scales; Nottingham Health Profile mobility subscale; EuroQoL mobility subscale; QR & S questionnaire (Questionnaire Rising and Sitting Down))	Netherlands Size: 198 Mean age: 68 % of females: 78.3	factor analysis	factor analysis 0.84 P value: NR
Steultjens, 1999[401] Index: The QR & S high chair Reference: The Influence of Rheumatic Disease on General Health and Lifestyle mobility subscale and EuroQoL self-care subscale that measures self-reported disability in self-care	Netherlands Size: 198 Mean age: 68 % of females: 78.3	factor analysis	factor analysis -0.06 P value: NR
Steultjens, 1999[401] Index: The QR & S low chair Reference: The Influence of Rheumatic Disease on General Health and Lifestyle mobility subscale and EuroQoL self-care subscale that measures self-reported disability in self-care	Netherlands Size: 198 Mean age: 68 % of females: 78.3	factor analysis	factor analysis -0.18 P value: NR
Barker, 2004[389] Index: VAS: pain Reference: Power (Leg extensor power)	UK Size: 123 Mean age: 69.5 % of females: 53.7	construct validity	Spearman's rank correlation coefficient 0.273 P value: <0.01
Collins, 2008[387] Index: WIQ: stair-climbing subscale Reference: 3-minute test (Actual number of stairs ascended and descended)	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: stair-climbing concurrent validity	Pearson r correlation 0.44 P value: <0.001
Collins, 2008[387] Index: WIQ: distance subscale Reference: 6-minute walk distance	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Pearson r correlation 0.52 P value: <0.001
Collins, 2008[387] Index: WIQ: distance subscale Reference: WOMAC: pain subscale	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Pearson r correlation -0.45 P value: <0.001
Collins, 2008[387] Index: WIQ: speed subscale Reference: WOMAC: pain subscale	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Pearson r correlation -0.42 P value: <0.001

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Collins, 2008[387] Index: WIQ: stair-climbing subscale Reference: WOMAC: pain subscale	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Pearson r correlation -0.49 P value: <0.001
Collins, 2008[387] Index: WIQ: distance subscale Reference: WOMAC: stiffness subscale	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Pearson r correlation -0.23 P value: 0.02
Collins, 2008[387] Index: WIQ: stair-climbing subscale Reference: WOMAC: stiffness subscale	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Pearson r correlation -0.3 P value: 0.002
Collins, 2008[387] Index: WIQ: distance subscale Reference: WOMAC: total score	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Pearson r correlation -0.49 P value: <0.001
Collins, 2008[387] Index: WIQ: stair-climbing subscale Reference: WOMAC: total score	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Pearson r correlation -0.55 P value: <0.001
Collins, 2008[387] Index: WIQ: distance subscale Reference: WOMAC: function subscale	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Pearson r correlation -0.5 P value: <0.001
Collins, 2008[387] Index: WIQ: stair-climbing subscale Reference: WOMAC: function subscale	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Pearson r correlation -0.56 P value: <0.001
Collins, 2008[387] Index: WIQ: distance subscale Reference: Examination and BOD POD(Body Mass Index)	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Pearson r correlation -0.32 P value: 0.001
Collins, 2008[387] Index: WIQ: distance subscale Reference: BOD POD	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Pearson r correlation -0.24 P value: 0.012
Collins, 2008[387] Index: WIQ: distance subscale Reference: History (Duration of OA)	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Pearson r correlation -0.23 P value: <0.03
Collins, 2008[387] Index: WIQ: distance subscale Reference: History (ARA (American Rheumatism Association) Functional Class)	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Spearman rank correlation coefficient -0.24 P value: <0.02
Collins, 2008[387] Index: WIQ: stair-climbing subscale Reference: Examination and BOD POD(Body Mass Index)	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Pearson r correlation -0.29 P value: 0.002

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Collins, 2008[387] Index: WIQ: stair-climbing subscale Reference: BOD POD	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Pearson r correlation -0.21 P value: 0.03
Collins, 2008[387] Index: WIQ: stair-climbing subscale Reference: History (ARA (American Rheumatism Association) Functional Class)	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance concurrent validity	Pearson r correlation -0.27 P value: 0.01
Possley, [388] Index: WIQ: stair climbing ability subscale Reference: 3-minute stair climb/descend	USA Size: 105 Mean age: 67.5 % of females: 11	Not depressed patients Domain: stair climbing ability construct validity	0.51 P value: <0.001
Possley, [388] Index: WIQ: walking distance subscale Reference: 3-minute stair climb/descend	USA Size: 105 Mean age: 67.5 % of females: 11	Domain: walking distance construct validity	0.52 P value: <0.001
Possley, [388] Index: WIQ: stair climbing ability subscale Reference: 6 minute walk	USA Size: 105 Mean age: 67.5 % of females: 11	Not depressed patients Domain: stair climbing ability construct validity	0.44 P value: <0.001
Possley, [388] Index: WIQ: stair climbing ability subscale Reference: 6 minute walk	USA Size: 105 Mean age: 67.5 % of females: 11	Depressed patients Domain: stair climbing ability construct validity	0.43 P value: <0.01
Possley, [388] Index: WIQ: stair climbing ability subscale Reference: - 3-minute stair climb/descend	USA Size: 105 Mean age: 67.5 % of females: 11	Depressed patients Domain: stair climbing ability construct validity	0.3 P value: NR
Possley, [388] Index: WIQ: walking distance subscale Reference: 6 minute walk	USA Size: 105 Mean age: 67.5 % of females: 11	Not depressed patients Domain: walking distance construct validity	0.5 P value: <0.001
Possley, [388] Index: WIQ: walking distance subscale Reference: 6 minute walk	USA Size: 105 Mean age: 67.5 % of females: 11	Depressed patients Domain: walking distance construct validity	0.49 P value: <0.001
Possley, [388] Index: WIQ: walking distance subscale Reference: 3-minute stair climb/descend	USA Size: 105 Mean age: 67.5 % of females: 11	Depressed patients Domain: walking distance construct validity	0.33 P value: <0.05
Collins, 2008[387] Index: WIQ: stair-climbing subscale Reference: : History (ARA (American Rheumatism Association) Functional Class)	USA Size: 112 Mean age: 64.47 % of females: 88.57	Domain: walking distance correlation	Pearson r correlation -0.3 P value: 0.002

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Salaffi, 1991[405] Index: AIMS (Italian version of Arthritis Impact Measurement Scale) dimension: physical function Reference: Total Knee Score calculated from grading 10 radiological variables of the knee (osteoporosis, joint space, sclerosis, geode, osteophyte, erosion, malalignment, soft tissue swelling, meniscal, tendinous or ligamentous calcifications, and chondromatosis)	Italy Size: 61 Mean age: 63.5 % of females: 100	Domain: physical function construct validity	Pearson's product moment correlation 0.127 P value: NR
Salaffi, 1991[405] Index: AIMS (Italian version of Arthritis Impact Measurement Scale) subscale: ADL Reference: Total Knee Score calculated from grading 10 radiological variables of the knee (osteoporosis, joint space, sclerosis, geode, osteophyte, erosion, malalignment, soft tissue swelling, meniscal, tendinous or ligamentous calcifications, and chondromatosis)	Italy Size: 61 Mean age: 63.5 % of females: 100	Domain: ADL construct validity	Pearson's product moment correlation 0.188 P value: NR
Salaffi, 1991[405] Index: AIMS (Italian version of Arthritis Impact Measurement Scale) subscale: Dexterity Reference: Total Knee Score calculated from grading 10 radiological variables of the knee (osteoporosis, joint space, sclerosis, geode, osteophyte, erosion, malalignment, soft tissue swelling, meniscal, tendinous or ligamentous calcifications, and chondromatosis)	Italy Size: 61 Mean age: 63.5 % of females: 100	Domain: dexterity construct validity	Pearson's product moment correlation 0.049 P value: NR
Salaffi, 1991[405] Index: AIMS (Italian version of Arthritis Impact Measurement Scale) subscale: Household activities Reference: Total Knee Score calculated from grading 10 radiological variables of the knee (osteoporosis, joint space, sclerosis, geode, osteophyte, erosion, malalignment, soft tissue swelling, meniscal, tendinous or ligamentous calcifications, and chondromatosis)	Italy Size: 61 Mean age: 63.5 % of females: 100	Domain: household activities construct validity	Pearson's product moment correlation 0.218 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Salaffi, 1991[405] Index: AIMS (Italian version of Arthritis Impact Measurement Scale) subscale: Mobility Reference: Total Knee Score calculated from grading 10 radiological variables of the knee (osteoporosis, joint space, sclerosis, geode, osteophyte, erosion, malalignment, soft tissue swelling, meniscal, tendinous or ligamentous calcifications, and chondromatosis)	Italy Size: 61 Mean age: 63.5 % of females: 100	Domain: mobility construct validity	Pearson's product moment correlation 0.002 P value: NR
Salaffi, 1991[405] Index: AIMS (Italian version of Arthritis Impact Measurement Scale) subscale: Pain Reference: Total Knee Score calculated from grading 10 radiological variables of the knee (osteoporosis, joint space, sclerosis, geode, osteophyte, erosion, malalignment, soft tissue swelling, meniscal, tendinous or ligamentous calcifications, and chondromatosis)	Italy Size: 61 Mean age: 63.5 % of females: 100	Domain: pain construct validity	Pearson's product moment correlation 0.208 P value: NR
Salaffi, 1991[405] Index: AIMS (Italian version of Arthritis Impact Measurement Scale) subscale: Physical activity Reference: Total Knee Score calculated from grading 10 radiological variables of the knee (osteoporosis, joint space, sclerosis, geode, osteophyte, erosion, malalignment, soft tissue swelling, meniscal, tendinous or ligamentous calcifications, and chondromatosis)	Italy Size: 61 Mean age: 63.5 % of females: 100	Domain: physical activity construct validity	Pearson's product moment correlation 0.059 P value: NR
Salaffi, 1991[405] Index: AIMS (Italian version of Arthritis Impact Measurement Scale) subscale: Social activity Reference: Total Knee Score calculated from grading 10 radiological variables of the knee (osteoporosis, joint space, sclerosis, geode, osteophyte, erosion, malalignment, soft tissue swelling, meniscal, tendinous or ligamentous calcifications, and chondromatosis)	Italy Size: 61 Mean age: 63.5 % of females: 100	Domain: social activity construct validity	Pearson's product moment correlation 0.244 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Salaffi, 1991[405] Index: AIMS (Italian version of Arthritis Impact Measurement Scale) total Reference: Total Knee Score calculated from grading 10 radiological variables of the knee (osteoporosis, joint space, sclerosis, geode, osteophyte, erosion, malalignment, soft tissue swelling, meniscal, tendinous or ligamentous calcifications, and chondromatosis)	Italy Size: 61 Mean age: 63.5 % of females: 100	Domain: total construct validity	Pearson's product moment correlation 0.218 P value: NR
Meenan, 1980[393] Index: AIMS: activities of daily living subscale: Likert format of the scale Reference: clinical history	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: activities of daily living convergent validity	Pearson correlation coefficient 0.12 P value: NR
Meenan, 1980[393] Index: AIMS: mobility subscale: Likert format of the scale Reference: clinical history	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: mobility convergent validity	Pearson correlation coefficient 0.31 P value: <0.01
Meenan, 1980[393] Index: AIMS: physical activity subscale: Likert format of the scale Reference: clinical history	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: physical activity convergent validity	Pearson correlation coefficient 0.49 P value: <0.01
Meenan, 1980[393] Index: AIMS: social activity subscale: Likert format of the scale Reference: clinical history	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: social activity convergent validity	Pearson correlation coefficient 0.18 P value: <0.05
Meenan, 1980[393] Index: AIMS: social role subscale: Likert format of the scale Reference: clinical history	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: social role convergent validity	Pearson correlation coefficient 0.4 P value: <0.01
Meenan, 1980[393] Index: AIMS: pain subscale: Likert format of the scale Reference: clinical history	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: pain convergent validity	Pearson correlation coefficient 0.25 P value: <0.01
Meenan, 1980[393] Index: AIMS: activities of daily living subscale: Likert format of the scale Reference: doctor's opinion of number of joints affected (joint count)	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: activities of daily living convergent validity	Pearson correlation coefficient 0.28 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Meenan, 1980[393] Index: AIMS: mobility subscale: Likert format of the scale Reference: doctor's opinion of number of joints affected (joint count)	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: mobility convergent validity	Pearson correlation coefficient 0.11 P value: NR
Meenan, 1980[393] Index: AIMS: physical activity subscale: Likert format of the scale Reference: doctor's opinion of number of joints affected (joint count)	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: physical activity convergent validity	Pearson correlation coefficient 0.18 P value: NR
Meenan, 1980[393] Index: AIMS: social activity subscale: Likert format of the scale Reference: doctor's opinion of number of joints affected (joint count)	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: social activity convergent validity	Pearson correlation coefficient 0.02 P value: NR
Meenan, 1980[393] Index: AIMS: social role subscale: Likert format of the scale Reference: doctor's opinion of number of joints affected (joint count)	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: social role convergent validity	Pearson correlation coefficient 0.14 P value: NR
Meenan, 1980[393] Index: AIMS: pain subscale: Likert format of the scale Reference: doctor's opinion of number of joints affected (joint count)	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: pain convergent validity	Pearson correlation coefficient 0.18 P value: <0.05
Meenan, 1980[393] Index: AIMS: activities of daily living subscale: Likert format of the scale Reference: doctor's opinion of patient's functional level	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: activities of daily living convergent validity	Pearson correlation coefficient 0.39 P value: <0.01
Meenan, 1980[393] Index: AIMS: mobility subscale: Likert format of the scale Reference: doctor's opinion of patient's functional level	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: mobility convergent validity	Pearson correlation coefficient 0.41 P value: <0.01
Meenan, 1980[393] Index: AIMS: physical activity subscale: Likert format of the scale Reference: doctor's opinion of patient's functional level	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: physical activity convergent validity	Pearson correlation coefficient 0.51 P value: <0.01

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Meenan, 1980[393] Index: AIMS: social activity subscale: Likert format of the scale Reference: doctor's opinion of patient's functional level	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: social activity convergent validity	Pearson correlation coefficient 0.23 P value: <0.05
Meenan, 1980[393] Index: AIMS: social role subscale: Likert format of the scale Reference: doctor's opinion of patient's functional level	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: social role convergent validity	Pearson correlation coefficient 0.55 P value: <0.01
Meenan, 1980[393] Index: AIMS: pain subscale: Likert format of the scale Reference: doctor's opinion of patient's functional level	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: pain convergent validity	Pearson correlation coefficient 0.36 P value: <0.01
Meenan, 1980[393] Index: AIMS: activities of daily living subscale: Likert format of the scale Reference: doctor's opinion of patient's recent disease activity	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: activities of daily living convergent validity	Pearson correlation coefficient 0.39 P value: <0.01
Meenan, 1980[393] Index: AIMS: mobility subscale: Likert format of the scale Reference: doctor's opinion of patient's recent disease activity	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: mobility convergent validity	Pearson correlation coefficient 0.23 P value: <0.05
Meenan, 1980[393] Index: AIMS: physical activity subscale: Likert format of the scale Reference: doctor's opinion of patient's recent disease activity	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: physical activity convergent validity	Pearson correlation coefficient 0.38 P value: <0.01
Meenan, 1980[393] Index: AIMS: social activity subscale: Likert format of the scale Reference: doctor's opinion of patient's recent disease activity	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: social activity convergent validity	Pearson correlation coefficient 0.17 P value: NR
Meenan, 1980[393] Index: AIMS: social role subscale: Likert format of the scale Reference: doctor's opinion of patient's recent disease activity	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: social role convergent validity	Pearson correlation coefficient 0.31 P value: <0.01

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Meenan, 1980[393] Index: AIMS: pain subscale: Likert format of the scale Reference: doctor's opinion of patient's recent disease activity	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: pain convergent validity	Pearson correlation coefficient 0.44 P value: <0.01
Meenan, 1980[393] Index: AIMS: activities of daily living subscale: Likert format of the scale Reference: questionnaire item: patient perception of general health	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: activities of daily living convergent validity	Pearson correlation coefficient 0.35 P value: <0.01
Meenan, 1980[393] Index: AIMS: mobility subscale: Likert format of the scale Reference: questionnaire item: patient perception of general health	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: mobility convergent validity	Pearson correlation coefficient 0.48 P value: <0.01
Meenan, 1980[393] Index: AIMS: physical activity subscale: Likert format of the scale Reference: questionnaire item: patient perception of general health	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: physical activity convergent validity	Pearson correlation coefficient 0.55 P value: <0.01
Meenan, 1980[393] Index: AIMS: social activity subscale: Likert format of the scale Reference: questionnaire item: patient perception of general health	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: social activity convergent validity	Pearson correlation coefficient 0.4 P value: <0.01
Meenan, 1980[393] Index: AIMS: social role subscale: Likert format of the scale Reference: questionnaire item: patient perception of general health	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: social role convergent validity	Pearson correlation coefficient 0.38 P value: <0.01
Meenan, 1980[393] Index: AIMS: pain subscale: Likert format of the scale Reference: questionnaire item: patient perception of general health	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: pain convergent validity	Pearson correlation coefficient 0.56 P value: <0.01
Meenan, 1980[393] Index: AIMS: activities of daily living subscale: Likert format of the scale Reference: questionnaire item: patient perception of recent disease activity	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: activities of daily living convergent validity	Pearson correlation coefficient 0.29 P value: <0.01

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Meenan, 1980[393] Index: AIMS: mobility subscale: Likert format of the scale Reference: questionnaire item: patient perception of recent disease activity	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: mobility convergent validity	Pearson correlation coefficient 0.27 P value: <0.01
Meenan, 1980[393] Index: AIMS: physical activity subscale: Likert format of the scale Reference: questionnaire item: patient perception of recent disease activity	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: physical activity convergent validity	Pearson correlation coefficient 0.47 P value: <0.01
Meenan, 1980[393] Index: AIMS: social activity subscale: Likert format of the scale Reference: questionnaire item: patient perception of recent disease activity	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: social activity convergent validity	Pearson correlation coefficient 0.31 P value: <0.01
Meenan, 1980[393] Index: AIMS: social role subscale: Likert format of the scale Reference: questionnaire item: patient perception of recent disease activity	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: social role convergent validity	Pearson correlation coefficient 0.35 P value: <0.01
Meenan, 1980[393] Index: AIMS: pain subscale: Likert format of the scale Reference: questionnaire item: patient perception of recent disease activity	USA Size: 104 Mean age: 53 % of females: 70.19	Domain: pain convergent validity	Pearson correlation coefficient 0.68 P value: <0.01
Ren, 1999[353] Index: AIMS2-SF: lower body limitations domain Reference: AIMS2-SF: affect domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function construct validity	correlation coefficient (not specified) 0.42 P value: NR
Ren, 1999[353] Index: AIMS2-SF: upper body limitations domain Reference: AIMS2-SF: affect domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function construct validity	correlation coefficient (not specified) 0.22 P value: NR
Ren, 1999[353] Index: AIMS2-SF: upper body limitations domain Reference: AIMS2-SF: lower body limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function construct validity	correlation coefficient (not specified) 0.44 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Ren, 1999[353] Index: AIMS2-SF: lower body limitations domain Reference: AIMS2-SF: social function domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function construct validity	correlation coefficient (not specified) 0.3 P value: NR
Ren, 1999[353] Index: AIMS2-SF: symptom bother domain Reference: AIMS2-SF: social function domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: bothered by symptoms construct validity	correlation coefficient (not specified) 0.22 P value: NR
Ren, 1999[353] Index: AIMS2-SF: upper body limitations domain Reference: AIMS2-SF: social function domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function construct validity	correlation coefficient (not specified) 0.28 P value: NR
Ren, 1999[353] Index: AIMS2-SF: lower body limitations domain Reference: AIMS2-SF: symptom bother domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function construct validity	correlation coefficient (not specified) 0.31 P value: NR
Ren, 1999[353] Index: AIMS2-SF: symptom bother domain Reference: AIMS2-SF: symptom bother domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: bothered by symptoms construct validity	correlation coefficient (not specified) 0.43 P value: NR
Ren, 1999[353] Index: AIMS2-SF: upper body limitations domain Reference: AIMS2-SF: symptom bother domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function construct validity	correlation coefficient (not specified) 0.3 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Comb or brush your hair" Reference: AIMS2-SF: affect domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.2 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Drive a car or use public transportation" Reference: AIMS2-SF: affect domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.28 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Get together with friends or relatives" Reference: AIMS2-SF: affect domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: Social function discriminant validity	correlation coefficient (not specified) 0.38 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Go to a meeting of a church, club, team, or other group" Reference: AIMS2-SF: affect domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: Social function discriminant validity	correlation coefficient (not specified) 0.22 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Ren, 1999[353] Index: Item of AIMS2-SF: "In a bed or a chair for most or all of the day" Reference: AIMS2-SF: affect domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.24 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Morning stiffness lasts more than one hour" Reference: AIMS2-SF: affect domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: bothered by symptoms discriminant validity	correlation coefficient (not specified) 0.41 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Need help to get dressed" Reference: AIMS2-SF: affect domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.18 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Need help to get in or out of bed" Reference: AIMS2-SF: affect domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.15 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "On the telephone with close friends or relatives" Reference: AIMS2-SF: affect domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: Social function discriminant validity	correlation coefficient (not specified) 0.12 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Pain makes it difficult for you to sleep" Reference: AIMS2-SF: affect domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: bothered by symptoms discriminant validity	correlation coefficient (not specified) 0.44 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Reach shelves that were above your head" Reference: AIMS2-SF: affect domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.25 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Severe pain from arthritis" Reference: AIMS2-SF: affect domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: bothered by symptoms discriminant validity	correlation coefficient (not specified) 0.23 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Trouble doing vigorous activities" Reference: AIMS2-SF: affect domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.26 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Trouble walking several blocks/climbing a few flights of stairs" Reference: AIMS2-SF: affect domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.23 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Ren, 1999[353] Index: Item of AIMS2-SF: "Unable to walk unless assisted" Reference: AIMS2-SF: affect domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.17 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Write with a pen or pencil" Reference: AIMS2-SF: affect domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.26 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Comb or brush your hair" Reference: AIMS2-SF: lower limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.42 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Drive a car or use public transportation" Reference: AIMS2-SF: lower limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.48 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Get together with friends or relatives" Reference: AIMS2-SF: lower limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: Social function discriminant validity	correlation coefficient (not specified) 0.3 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Go to a meeting of a church, club, team, or other group" Reference: AIMS2-SF: lower limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: Social function discriminant validity	correlation coefficient (not specified) 0.37 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "In a bed or a chair for most or all of the day" Reference: AIMS2-SF: lower limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.68 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Morning stiffness lasts more than one hour" Reference: AIMS2-SF: lower limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: bothered by symptoms discriminant validity	correlation coefficient (not specified) 0.24 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Ren, 1999[353] Index: Item of AIMS2-SF: "Need help to get dressed" Reference: AIMS2-SF: lower limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.64 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Need help to get in or out of bed" Reference: AIMS2-SF: lower limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.61 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "On the telephone with close friends or relatives" Reference: AIMS2-SF: lower limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: Social function discriminant validity	correlation coefficient (not specified) 0.21 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Pain makes it difficult for you to sleep" Reference: AIMS2-SF: lower limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: bothered by symptoms discriminant validity	correlation coefficient (not specified) 0.34 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Reach shelves that were above your head" Reference: AIMS2-SF: lower limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.53 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Severe pain from arthritis" Reference: AIMS2-SF: lower limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: bothered by symptoms discriminant validity	correlation coefficient (not specified) 0.1 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Trouble doing vigorous activities" Reference: AIMS2-SF: lower limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.52 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Trouble walking several blocks/climbing a few flights of stairs" Reference: AIMS2-SF: lower limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.63 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Ren, 1999[353] Index: Item of AIMS2-SF: "Unable to walk unless assisted" Reference: AIMS2-SF: lower limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.56 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Write with a pen or pencil" Reference: AIMS2-SF: lower limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.13 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Comb or brush your hair" Reference: AIMS2-SF: social function domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.27 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Drive a car or use public transportation" Reference: AIMS2-SF: social function domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.37 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Get together with friends or relatives" Reference: AIMS2-SF: social function domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: Social function discriminant validity	correlation coefficient (not specified) 0.55 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Go to a meeting of a church, club, team, or other group" Reference: AIMS2-SF: social function domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: Social function discriminant validity	correlation coefficient (not specified) 0.4 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "In a bed or a chair for most or all of the day" Reference: AIMS2-SF: social function domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.25 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Morning stiffness lasts more than one hour" Reference: AIMS2-SF: social function domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: bothered by symptoms discriminant validity	correlation coefficient (not specified) 0.19 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Need help to get dressed" Reference: AIMS2-SF: social function domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.21 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Ren, 1999[353] Index: Item of AIMS2-SF: "Need help to get in or out of bed" Reference: AIMS2-SF: social function domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.21 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "On the telephone with close friends or relatives" Reference: AIMS2-SF: social function domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: Social function discriminant validity	correlation coefficient (not specified) 0.49 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Pain makes it difficult for you to sleep" Reference: AIMS2-SF: social function domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: bothered by symptoms discriminant validity	correlation coefficient (not specified) 0.16 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Reach shelves that were above your head" Reference: AIMS2-SF: social function domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.26 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Severe pain from arthritis" Reference: AIMS2-SF: social function domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: bothered by symptoms discriminant validity	correlation coefficient (not specified) 0.12 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Trouble doing vigorous activities" Reference: AIMS2-SF: social function domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.13 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Trouble walking several blocks/climbing a few flights of stairs" Reference: AIMS2-SF: social function domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.16 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Unable to walk unless assisted" Reference: AIMS2-SF: social function domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.23 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Write with a pen or pencil" Reference: AIMS2-SF: social function domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.19 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Comb or brush your hair" Reference: AIMS2-SF: symptom bother domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.17 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Ren, 1999[353] Index: Item of AIMS2-SF: "Drive a car or use public transportation" Reference: AIMS2-SF: symptom bother domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.25 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Get together with friends or relatives" Reference: AIMS2-SF: symptom bother domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: Social function discriminant validity	correlation coefficient (not specified) 0.19 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Go to a meeting of a church, club, team, or other group" Reference: AIMS2-SF: symptom bother domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: Social function discriminant validity	correlation coefficient (not specified) 0.24 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "In a bed or a chair for most or all of the day" Reference: AIMS2-SF: symptom bother domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.26 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Morning stiffness lasts more than one hour" Reference: AIMS2-SF: symptom bother domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: bothered by symptoms discriminant validity	correlation coefficient (not specified) 0.64 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Need help to get dressed" Reference: AIMS2-SF: symptom bother domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.22 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Need help to get in or out of bed" Reference: AIMS2-SF: symptom bother domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.22 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "On the telephone with close friends or relatives" Reference: AIMS2-SF: symptom bother domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: Social function discriminant validity	correlation coefficient (not specified) 0 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Ren, 1999[353] Index: Item of AIMS2-SF: "Pain makes it difficult for you to sleep" Reference: AIMS2-SF: symptom bother domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: bothered by symptoms discriminant validity	correlation coefficient (not specified) 0.65 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Reach shelves that were above your head" Reference: AIMS2-SF: symptom bother domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.27 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Severe pain from arthritis" Reference: AIMS2-SF: symptom bother domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: bothered by symptoms discriminant validity	correlation coefficient (not specified) 0.64 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Trouble doing vigorous activities" Reference: AIMS2-SF: symptom bother domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.44 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Trouble walking several blocks/climbing a few flights of stairs" Reference: AIMS2-SF: symptom bother domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.49 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Unable to walk unless assisted" Reference: AIMS2-SF: symptom bother domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.02 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Write with a pen or pencil" Reference: AIMS2-SF: symptom bother domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.17 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Comb or brush your hair" Reference: AIMS2-SF: upper limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.65 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Ren, 1999[353] Index: Item of AIMS2-SF: "Drive a car or use public transportation" Reference: AIMS2-SF: upper limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.37 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Get together with friends or relatives" Reference: AIMS2-SF: upper limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: Social function discriminant validity	correlation coefficient (not specified) 0.36 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Go to a meeting of a church, club, team, or other group" Reference: AIMS2-SF: upper limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: Social function discriminant validity	correlation coefficient (not specified) 0.22 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "In a bed or a chair for most or all of the day" Reference: AIMS2-SF: upper limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.28 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Morning stiffness lasts more than one hour" Reference: AIMS2-SF: upper limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: bothered by symptoms discriminant validity	correlation coefficient (not specified) 0.21 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Need help to get dressed" Reference: AIMS2-SF: upper limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.45 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Need help to get in or out of bed" Reference: AIMS2-SF: upper limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.31 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "On the telephone with close friends or relatives" Reference: AIMS2-SF: upper limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: Social function discriminant validity	correlation coefficient (not specified) 0.13 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Ren, 1999[353] Index: Item of AIMS2-SF: "Pain makes it difficult for you to sleep" Reference: AIMS2-SF: upper limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: bothered by symptoms discriminant validity	correlation coefficient (not specified) 0.32 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Reach shelves that were above your head" Reference: AIMS2-SF: upper limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.64 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Severe pain from arthritis" Reference: AIMS2-SF: upper limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: bothered by symptoms discriminant validity	correlation coefficient (not specified) 0.17 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Trouble doing vigorous activities" Reference: AIMS2-SF: upper limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.3 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Trouble walking several blocks/climbing a few flights of stairs" Reference: AIMS2-SF: upper limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.29 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Unable to walk unless assisted" Reference: AIMS2-SF: upper limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.28 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Write with a pen or pencil" Reference: AIMS2-SF: upper limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.6 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Button a shirt or blouse" Reference: AIMS2-SF: affect domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.24 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Ren, 1999[353] Index: Item of AIMS2-SF: "Turn a key in a lock" Reference: AIMS2-SF: affect domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.3 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Button a shirt or blouse" Reference: AIMS2-SF: lower limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.29 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Turn a key in a lock" Reference: AIMS2-SF: lower limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.39 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Button a shirt or blouse" Reference: AIMS2-SF: social function domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.22 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Turn a key in a lock" Reference: AIMS2-SF: social function domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.23 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Button a shirt or blouse" Reference: AIMS2-SF: symptom bother domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.17 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Turn a key in a lock" Reference: AIMS2-SF: symptom bother domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.18 P value: NR
Ren, 1999[353] Index: Item of AIMS2-SF: "Button a shirt or blouse" Reference: AIMS2-SF: upper limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.82 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Ren, 1999[353] Index: Item of AIMS2-SF: "Turn a key in a lock" Reference: AIMS2-SF: upper limitations domain	USA Size: 147 Mean age: 66 % of females: 81	Domain: physical function discriminant validity	correlation coefficient (not specified) 0.79 P value: NR
Steultjens, 1999[401] Index: EuroQoL mobility Reference: Keefe and Block (adapted version) + subscales of 4 questionnaires (The Influence of Rheumatic Disease on General Health and Lifestyle mobility subscale that is a Dutch adaptation of the Arthritis Impact Measurement Scales; Nottingham Health Profile mobility subscale; EuroQoL mobility subscale; QR & S questionnaire (Questionnaire Rising and Sitting Down))	Netherlands Size: 198 Mean age: 68 % of females: 78.3	factor analysis	factor analysis 0.31 P value: NR
Steultjens, 1999[401] Index: EuroQoL self-care Reference: Keefe and Block (adapted version) + subscales of 4 questionnaires (The Influence of Rheumatic Disease on General Health and Lifestyle mobility subscale that is a Dutch adaptation of the Arthritis Impact Measurement Scales; Nottingham Health Profile mobility subscale; EuroQoL mobility subscale; QR & S questionnaire (Questionnaire Rising and Sitting Down))	Netherlands Size: 198 Mean age: 68 % of females: 78.3	factor analysis	factor analysis -0.09 P value: NR
Steultjens, 1999[401] Index: EuroQoL mobility Reference: The Influence of Rheumatic Disease on General Health and Lifestyle mobility subscale and EuroQoL self-care subscale that measures self-reported disability in self-care	Netherlands Size: 198 Mean age: 68 % of females: 78.3	factor analysis	factor analysis 0.21 P value: NR
Steultjens, 1999[401] Index: EuroQoL self-care Reference: The Influence of Rheumatic Disease on General Health and Lifestyle mobility subscale and EuroQoL self-care subscale that measures self-reported disability in self-care	Netherlands Size: 198 Mean age: 68 % of females: 78.3	factor analysis	factor analysis 0.84 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Fransen, 1999[409] Index: EQ-5D Reference: EQ-VAS	Australia Size: 82 Mean age: 68 % of females: 69.5121951219512	construct validity	Spearman's rho, rank correlation coefficient 0.42 P value: NR
Fransen, 1999[409] Index: EQ-5D Reference: SF-36 MCS	Australia Size: 82 Mean age: 68 % of females: 69.5121951219512	construct validity	Spearman's rho, rank correlation coefficient 0.39 P value: NR
Fransen, 1999[409] Index: EQ-5D Reference: SF-36 PCS	Australia Size: 82 Mean age: 68 % of females: 69.5121951219512	construct validity	Spearman's rho, rank correlation coefficient 0.2 P value: NR
Fransen, 1999[409] Index: EQ-5D Reference: WOMAC: function subscale	Australia Size: 82 Mean age: 68 % of females: 69.5121951219512	construct validity	Spearman's rho, rank correlation coefficient -0.33 P value: NR
Fransen, 1999[409] Index: EQ-5D Reference: WOMAC: pain subscale	Australia Size: 82 Mean age: 68 % of females: 69.5121951219512	construct validity	Spearman's rho, rank correlation coefficient -0.3 P value: NR
Bruce, 2004[395] Index: HAQ: DI Reference: HAQ pain	USA Size: 271 Mean age: 65.7 % of females: 79	construct validity	Spearman rank correlation coefficient 0.62 P value: NR
Bruce, 2004[395] Index: HAQ: DI Reference: HAQ: patient global assessment	USA Size: 271 Mean age: 65.7 % of females: 79	construct validity	Spearman rank correlation coefficient 0.59 P value: NR
Bruce, 2004[395] Index: HAQ: DI Reference: Total Knee Score	USA Size: 271 Mean age: 65.7 % of females: 79	construct validity	Spearman rank correlation coefficient 0.13 P value: NR
Bruce, 2004[395] Index: HAQ: DI Reference: WOMAC: function	USA Size: 271 Mean age: 65.7 % of females: 79	construct validity	Spearman rank correlation coefficient 0.71 P value: NR
Bruce, 2004[395] Index: HAQ: DI Reference: WOMAC: pain	USA Size: 271 Mean age: 65.7 % of females: 79	construct validity	Spearman rank correlation coefficient 0.64 P value: NR
Bruce, 2004[395] Index: HAQ: DI Reference: WOMAC: stiffness	USA Size: 271 Mean age: 65.7 % of females: 79	construct validity	Spearman rank correlation coefficient 0.61 P value: NR

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Brazier, 1999[408] Index: HAQ Disability Index Reference: WOMAC: function subscale	UK Size: Mean age: mean age of knee replacement sample: 71 and rheumatology clinic sample: 64 % of females: NR	convergent validity	Spearman's rank correlation coefficient 0.68 P value: NR
Bruce, 2004[395] Index: HAQ: pain Reference: HAQ: patient global assessment	USA Size: 271 Mean age: 65.7 % of females: 79	construct validity	Spearman rank correlation coefficient 0.62 P value: NR
Bruce, 2004[395] Index: HAQ: pain Reference: Total Knee Score	USA Size: 271 Mean age: 65.7 % of females: 79	construct validity	Spearman rank correlation coefficient 0.12 P value: NR
Bruce, 2004[395] Index: HAQ: pain Reference: WOMAC: function	USA Size: 271 Mean age: 65.7 % of females: 79	construct validity	Spearman rank correlation coefficient 0.66 P value: NR
Bruce, 2004[395] Index: HAQ: pain Reference: WOMAC: pain	USA Size: 271 Mean age: 65.7 % of females: 79	construct validity	Spearman rank correlation coefficient 0.7 P value: NR
Bruce, 2004[395] Index: HAQ: pain Reference: WOMAC: stiffness	USA Size: 271 Mean age: 65.7 % of females: 79	construct validity	Spearman rank correlation coefficient 0.59 P value: NR
Bruce, 2004[395] Index: HAQ: patient global assessment Reference: Total Knee Score	USA Size: 271 Mean age: 65.7 % of females: 79	convergent validity	Spearman rank correlation coefficient 0.18 P value: NR
Bennell, 2004[368] Index: Human Activity Profile (AAS) Reference: Step test (N)	Australia Size: 259 Mean age: 69 in osteoarthritis group and 68 in control group % of females: 64.1	construct validity	Spearman correlation coefficient 0.52 P value: <0.001
Bennell, 2004[368] Index: Human Activity Profile (AAS) Reference: TUG test (s)	Australia Size: 259 Mean age: 69 in osteoarthritis group and 68 in control group % of females: 64. 1	construct validity	Spearman correlation coefficient -0.59 P value: <0.001
Bennell, 2004[368] Index: Human Activity Profile (AAS) Reference: VAS (cm)	Australia Size: 259 Mean age: 69 in osteoarthritis group and 68 in control group % of females: 64. 1	construct validity	Spearman correlation coefficient -0.48 P value: <0.001

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Bennell, 2004[368] Index: Human Activity Profile (AAS) Reference: VAS: pain at rest (cm)	Australia Size: 259 Mean age: 69 in osteoarthritis group and 68 in control group % of females: 64. 1	construct validity	Spearman correlation coefficient -0.19 P value: <0.01
Bennell, 2004[368] Index: Human Activity Profile (AAS) Reference: VAS: pain on movement (cm)	Australia Size: 259 Mean age: 69 in osteoarthritis group and 68 in control group % of females: 64. 1	construct validity	Spearman correlation coefficient -0.39 P value: <0.01
Bennell, 2004[368] Index: Human Activity Profile (AAS) Reference: WOMAC: pain	Australia Size: 259 Mean age: 69 in osteoarthritis group and 68 in control group % of females: 64. 1	construct validity	Spearman correlation coefficient -0.32 P value: <0.001
Bennell, 2004[368] Index: Human Activity Profile (AAS) Reference: WOMAC: physical function	Australia Size: 259 Mean age: 69 in osteoarthritis group and 68 in control group % of females: 64. 1	construct validity	Spearman correlation coefficient -0.39 P value: <0.001
Bennell, 2004[368] Index: Human Activity Profile (MAS) Reference: Step test (N)	Australia Size: 259 Mean age: 69 in osteoarthritis group and 68 in control group % of females: 64.1	construct validity	Spearman correlation coefficient 0.34 P value: <0.001
Bennell, 2004[368] Index: Human Activity Profile (MAS) Reference: TUG test (s)	Australia Size: 259 Mean age: 69 in osteoarthritis group and 68 in control group % of females: 64. 1	construct validity	Spearman correlation coefficient -0.46 P value: <0.001
Bennell, 2004[368] Index: Human Activity Profile (MAS) Reference: VAS (cm)	Australia Size: 259 Mean age: 69 in osteoarthritis group and 68 in control group % of females: 64. 1	construct validity	Spearman correlation coefficient -0.27 P value: <0.001
Bennell, 2004[368] Index: Human Activity Profile (MAS) Reference: VAS: pain at rest (cm)	Australia Size: 259 Mean age: 69 in osteoarthritis group and 68 in control group % of females: 64. 1	construct validity	Spearman correlation coefficient -0.18 P value: <0.01

Appendix Table F50. Validity of the scales in patients with knee OA (continued)

Author, year Index Reference methods	Country Size; Mean age % of females	Domain Validity type	Estimate, significance
Bennell, 2004[368] Index: Human Activity Profile (MAS) Reference: VAS: pain on movement (cm)	Australia Size: 259 Mean age: 69 in osteoarthritis group and 68 in control group % of females: 64.1	construct validity	Spearman correlation coefficient -0.27 P value: <0.01
Bennell, 2004[368] Index: Human Activity Profile (MAS) Reference: WOMAC: pain	Australia Size: 259 Mean age: 69 in osteoarthritis group and 68 in control group % of females: 64. 1	construct validity	Spearman correlation coefficient -0.23 P value: <0.001
Bennell, 2004[368] Index: Human Activity Profile (MAS) Reference: WOMAC: physical function	Australia Size: 259 Mean age: 69 in osteoarthritis group and 68 in control group % of females: 64.1	construct validity	Spearman correlation coefficient -0.23 P value: <0.001

Appendix Table F51. Validity of Western Ontario and McMaster Universities Osteoarthritis Index

Author, year Index and reference methods	Country Size , Mean age % of females	Domain Validity type	Validity estimate and significance
Stucki, 1998[352] Index: WOMAC knee: composite Reference: Extension deficit	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: composite construct validity	Spearman's rank correlation coefficient 0.38 P value: <0.05
Stucki, 1998[352] Index: WOMAC knee: function Reference: Extension deficit	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: function construct validity	Spearman's rank correlation coefficient 0.45 P value: <0.05
Stucki, 1998[352] Index: WOMAC knee: pain Reference: Extension deficit	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: pain construct validity	Spearman's rank correlation coefficient 0.42 P value: <0.05
Stucki, 1998[352] Index: WOMAC knee: composite Reference: Flexion	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: composite construct validity	Spearman's rank correlation coefficient -0.44 P value: <0.05
Stucki, 1998[352] Index: WOMAC knee: function Reference: Flexion	**Switzerland Size: 51 Mean age: 70 % of females: 67**	**Domain: function construct validity**	**Spearman's rank correlation coefficient -0.54 P value: <0.01**
Stucki, 1998[352] Index: WOMAC knee: pain Reference: Flexion	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: pain construct validity	Spearman's rank correlation coefficient -0.27 P value:
Stucki, 1998[352] Index: WOMAC knee: composite Reference: Kellgren -Lawrence scale	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: composite construct validity	Spearman's rank correlation coefficient 0.34 P value: NR
Stucki, 1998[352] Index: WOMAC knee: function Reference: Kellgren -Lawrence scale	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: function construct validity	Spearman's rank correlation coefficient 0.44 P value: <0.05
Stucki, 1998[352] Index: WOMAC knee: pain Reference: Kellgren -Lawrence scale	Switzerland Size: 51 Mean age: 70 % of females: 67	Domain: pain construct validity	Spearman's rank correlation coefficient 0.28 P value: NR
Wolfe, 1999[384] Index: WOMAC pain scale Reference: HAQ disability index	**USA Size: 2115 Mean age: 67.8(OA cohort) % of females: 66.5 (OA cohort)**	**construct validity**	**Spearman correlation coefficient 0.727 P value: NR**
Wolfe, 1999[384] Index: WOMAC function Reference: HAQ disability index	**USA Size: 2115 Mean age: 67.8(OA cohort) % of females: 66.5 (OA cohort)**	**construct validity**	**Spearman correlation coefficient 0.779 P value: NR**
Brazier, 1999[408] Index: WOMAC: function subscale Reference: WOMAC: pain subscale	**UK Size: Mean age: mean age of knee replacement sample: 71 and rheumatology clinic sample: 64 % of females: NR**	**Domain: function convergent validity**	**Spearman's rank correlation coefficient 0.65 P value: NR**

Appendix Table F51. Validity of Western Ontario and McMaster Universities Osteoarthritis Index (continued)

Author, year Index and reference methods	Country Size , Mean age % of females	Domain Validity type	Validity estimate and significance
Brazier, 1999[408] Index: WOMAC: function subscale Reference: WOMAC: stiffness subscale	**UK Size: Mean age: mean age of knee replacement sample: 71 and rheumatology clinic sample: 64 % of females: NR**	**Domain: function convergent validity**	**Spearman's rank correlation coefficient 0.63 P value: NR**
Lingard, 2001[403] Index: WOMAC:function score Reference: Knee Society Clinical Rating system:function score	**USA, UK and Australia Size: 697 Mean age: 70 % of females: 58.9**	**Domain: function construct validity**	**Pearson coefficient 0.58 P value: NR**
Lingard, 2001[403] Index: WOMAC: pain scale Reference: Knee Society Clinical Rating system:pain score	**USA, UK and Australia Size: 697 Mean age: 70 % of females: 58.9**	**Domain: pain construct validity**	**Pearson coefficient 0.68 P value: NR**
Lingard, 2001[403] Index: WOMAC: pain scale Reference: SF-36: bodily pain score	**USA, UK and Australia Size: 697 Mean age: 70 % of females: 58.9**	**Domain: pain construct validity**	**Pearson coefficient 0.51 P value: NR**
Lingard, 2001[403] Index: WOMAC:function score Reference: SF-36:Physical Functioning score	**USA, UK and Australia Size: 697 Mean age: 70 % of females: 58.9**	**Domain: function construct validity**	**Pearson coefficient 0.57 P value: NR**
Faucher, 2002[394] Index: WOMAC:Function subscale Reference: Lequesne function score	**France Size: 19 Mean age: 70.31 % of females: 63**	**Domain: functional limitation convergent validity**	**Spearman rank correlation coefficient 0.72 P value: NR**
Faucher, 2002[394] Index: WOMAC:Pain scale Reference: Lequesne pain score	France Size: 19 Mean age: 70.31 % of females: 63.	Domain: pain convergent validity	Spearman rank correlation coefficient 0.43 P value: NR
Faucher, 2002[394] Index: WOMAC:Function subscale Reference: VAS Dw (VAS discomfort in walking for daily living activities)	**France Size: 19 Mean age: 70.31 % of females: 63**	**Domain: functional limitation convergent validity**	**Spearman rank correlation coefficient 0.72 P value: NR**
Faucher, 2002[394] Index: WOMAC:Function subscale Reference: VAS handicap	France Size: 19 Mean age: 70.31 % of females: 63	Domain: functional limitation convergent validity	Spearman rank correlation coefficient 0.37 P value: NR
Faucher, 2002[394] Index: WOMAC:Pain scale Reference: VAS pain score	**France Size: 19 Mean age: 70.31 % of females: 63**	**Domain: pain convergent validity**	**Spearman rank correlation coefficient 0.69 P value: NR**
Faucher, 2002[394] Index: WOMAC:Function subscale Reference: Circumference of the thigh	France Size: 19 Mean age: 70.31 % of females: 63	Domain: functional limitation divergent validity	Spearman rank correlation coefficient 0.36 P value: NR

Appendix Table F51. Validity of Western Ontario and McMaster Universities Osteoarthritis Index (continued)

Author, year Index and reference methods	Country Size , Mean age % of females	Domain Validity type	Validity estimate and significance
Faucher, 2002[394] Index: WOMAC:Pain subscale Reference: Circumference of the thigh	France Size: 19 Mean age: 70.31 % of females: 63	Domain: pain divergent validity	Spearman rank correlation coefficient 0.26 P value: NR
Faucher, 2002[394] Index: WOMAC:Function subscale Reference: Hospital Anxiety and Depression Scale(Score of anxiety)	France Size: 19 Mean age: 70.31 % of females: 63	Domain: functional limitation divergent validity	Spearman rank correlation coefficient 0.38 P value: NR
Faucher, 2002[394] Index: WOMAC:Pain subscale Reference: Hospital Anxiety and Depression Scale(Score of anxiety)	France Size: 19 Mean age: 70.31 % of females: 63	Domain: pain divergent validity	Spearman rank correlation coefficient 0.38 P value: NR
Faucher, 2002[394] Index: WOMAC:Function subscale Reference: Hospital Anxiety and Depression Scale(Score of depression)	France Size: 19 Mean age: 70.31 % of females: 63	Domain: functional limitation divergent validity	Spearman rank correlation coefficient 0.35 P value: NR
Faucher, 2002[394] Index: WOMAC:Pain subscale Reference: Hospital Anxiety and Depression Scale(Score of depression)	France Size: 19 Mean age: 70.31 % of females: 63	Domain: pain divergent validity	Spearman rank correlation coefficient 0.27 P value: NR
Faucher, 2002[394] Index: WOMAC:Function subscale Reference: Kellgren-Lawrence	France Size: 19 Mean age: 70.31 % of females: 63	Domain: functional limitation divergent validity	Spearman rank correlation coefficient 0.18 P value: NR
Faucher, 2002[394] Index: WOMAC:Pain subscale Reference: Kellgren-Lawrence	France Size: 19 Mean age: 70.31 % of females: 63	Domain: pain divergent validity	Spearman rank correlation coefficient 0.01 P value: NR
Faucher, 2002[394] Index: WOMAC:Function subscale Reference: WOMAC: function subscale	**France Size: 19 Mean age: 70.31 % of females: 63**	**Domain: functional limitation divergent validity**	**Spearman rank correlation coefficient 0.74 P value: NR**
Faucher, 2002[394] Index: WOMAC:Pain subscale Reference: WOMAC: stiffness subscale	**France Size: 19 Mean age: 70.31 % of females: 63**	**Domain: pain divergent validity**	**Spearman rank correlation coefficient 0.61 P value: NR**
Faucher, 2002[394] Index: WOMAC:Pain subscale Reference: WOMAC: function subscale	**France Size: 19 Mean age: 70.31 % of females: 63**	**Domain: pain divergent validity**	**Spearman rank correlation coefficient 0.84 P value: NR**

Appendix Table F51. Validity of Western Ontario and McMaster Universities Osteoarthritis Index (continued)

Author, year Index and reference methods	Country Size , Mean age % of females	Domain Validity type	Validity estimate and significance
Faucher, 2002[394] Index: WOMAC:Function subscale Reference: WOMAC: stiffness subscale	**France Size: 19 Mean age: 70.31 % of females: 63**	**Domain: functional limitation divergent validity**	**Spearman rank correlation coefficient 0.84 P value: NR**
Bruce, 2004[395] Index: WOMAC: pain Reference: WOMAC: stiffness	**USA Size: 271 Mean age: 65.7 % of females: 79**	**Domain: pain construct validity**	**Spearman rank correlation coefficient 0.71 P value: NR**
Bruce, 2004[395] Index: WOMAC: function Reference: WOMAC: pain	**USA Size: 271 Mean age: 65.7 % of females: 79**	**Domain: function construct validity**	**Spearman rank correlation coefficient 0.86 P value: NR**
Bruce, 2004[395] Index: WOMAC: function Reference: WOMAC: stiffness	**USA Size: 271 Mean age: 65.7 % of females: 79**	**Domain: function construct validity**	**Spearman rank correlation coefficient 0.76 P value: NR**
Bruce, 2004[395] Index: WOMAC: function Reference: HAQ: patient global assessment	**USA Size: 271 Mean age: 65.7 % of females: 79**	**Domain: function convergent validity**	**Spearman rank correlation coefficient 0.68 P value: NR**
Bruce, 2004[395] Index: WOMAC: pain Reference: HAQ: patient global assessment	**USA Size: 271 Mean age: 65.7 % of females: 79**	**Domain: pain convergent validity**	**Spearman rank correlation coefficient 0.66 P value: NR**
Bruce, 2004[395] Index: WOMAC: function Reference: Total Knee Score	USA Size: 271 Mean age: 65.7 % of females: 79	Domain: function convergent validity	Spearman rank correlation coefficient 0.49 P value: NR
Bruce, 2004[395] Index: WOMAC: pain Reference: Total Knee Score	USA Size: 271 Mean age: 65.7 % of females: 79	Domain: pain convergent validity	Spearman rank correlation coefficient 0.19 P value: NR
Barker, 2004[389] Index: WOMAC: function subscale Reference: Power (Leg extensor power)	UK Size: 123 Mean age: 69.5 % of females: 53.7	Domain: function construct validity	Spearman's rank correlation coefficient 0.374 P value: <0.01
Barker, 2004[389] Index: WOMAC: pain subscale Reference: Power (Leg extensor power)	**UK Size: 123 Mean age: 69.5 % of females: 53.7**	**Domain: pain construct validity**	**Spearman's rank correlation coefficient 0.654 P value: <0.05**
Barker, 2004[389] Index: WOMAC: pain subscale Reference: Power (Leg extensor power)	UK Size: 123 Mean age: 69.5 % of females: 53.7	Domain: pain construct validity	Spearman's rank correlation coefficient 0.388 P value: <0.01

Appendix Table F51. Validity of Western Ontario and McMaster Universities Osteoarthritis Index (continued)

Author, year Index and reference methods	Country Size , Mean age % of females	Domain Validity type	Validity estimate and significance
Barker, 2004[389] Index: WOMAC: function subscale Reference: Sit-stand	UK Size: 123 Mean age: 69.5 % of females: 53.7	Domain: function construct validity	Spearman's rank correlation coefficient 0.361 P value: <0.01
Barker, 2004[389] Index: WOMAC: function subscale Reference: VAS: pain	**UK Size: 123 Mean age: 69.5 % of females: 53.7**	**Domain: function construct validity**	**Spearman's rank correlation coefficient 0.64 P value: <0.05**
Barker, 2004[389] Index: WOMAC: function subscale Reference: Walking speed	UK Size: 123 Mean age: 69.5 % of females: 53.7	Domain: function construct validity	Spearman's rank correlation coefficient 0.348 P value: <0.01
Barker, 2004[389] Index: WOMAC: function subscale Reference: WOMAC: pain subscale	**UK Size: 123 Mean age: 69.5 % of females: 53.7**	**Domain: function construct validity**	**Spearman's rank correlation coefficient 0.807 P value: <0.05**
Angst, 2005[410] Index: WOMAC factor: Ascending/descending Reference: Validation questionnaire	**Switzerland Size: 76 Mean age: 68.1 % of females: 80**	**construct validity**	**kappa 0.62 P value: <0.01**
Angst, 2005[410] Index: WOMAC factor: Ascending/descending Reference: Validation questionnaire	Switzerland Size: 76 Mean age: 68.1 % of females: 80	construct validity	kappa 0.22 P value: NR
Angst, 2005[410] Index: WOMAC factor: Bending Reference: Validation questionnaire	**Switzerland Size: 76 Mean age: 68.1 % of females: 80**	**construct validity**	**kappa 0.66 P value: <0.01**
Angst, 2005[410] Index: WOMAC factor: Bending Reference: Validation questionnaire	Switzerland Size: 76 Mean age: 68.1 % of females: 80	construct validity	kappa 0.09 P value: NR
Angst, 2005[410] Index: WOMAC factor: Lying/sitting Reference: Validation questionnaire	**Switzerland Size: 76 Mean age: 68.1 % of females: 80**	**construct validity**	**kappa 0.65 P value: <0.01**
Angst, 2005[410] Index: WOMAC factor: Lying/sitting Reference: Validation questionnaire	Switzerland Size: 76 Mean age: 68.1 % of females: 80	construct validity	kappa 0.27 P value: 0.01<=p<0.05
Angst, 2005[410] Index: WOMAC factor: Standing/walking Reference: Validation questionnaire	**Switzerland Size: 76 Mean age: 68.1 % of females: 80**	**construct validity**	**kappa 0.68 P value: <0.01**
Angst, 2005[410] Index: WOMAC factor: Standing/walking Reference: Validation questionnaire	Switzerland Size: 76 Mean age: 68.1 % of females: 80	construct validity	kappa 0.17 P value: NR

Appendix Table F51. Validity of Western Ontario and McMaster Universities Osteoarthritis Index (continued)

Author, year Index and reference methods	Country Size , Mean age % of females	Domain Validity type	Validity estimate and significance
Yang, 2007[396] Index: Traditional WOMAC Reference: Knee Society score, function score	The Netherlands Size: 100 Mean age: 54.9 % of females: 37	construct validity	Lin's concordance correlation coefficient 0.4 P value: NR
Yang, 2007[396] Index: Traditional WOMAC Reference: KOOS quality of life	The Netherlands Size: 100 Mean age: 54.9 % of females: 37	construct validity	Lin's concordance correlation coefficient 0.2 P value: NR
Yang, 2007[396] Index: Traditional WOMAC Reference: KOOS sport	The Netherlands Size: 100 Mean age: 54.9 % of females: 37	construct validity	Lin's concordance correlation coefficient 0.18 P value: NR
Yang, 2007[396] Index: Traditional WOMAC Reference: Visual Analogue sclae for pain	The Netherlands Size: 100 Mean age: 54.9 % of females: 37	construct validity	Lin's concordance correlation coefficient 0.37 P value: NR
Yang, 2007[396] Index: Traditional WOMAC Reference: KOOS activities of daily living	**The Netherlands Size: 100 Mean age: 54.9 % of females: 37**	**construct validity**	**Lin's concordance correlation coefficient 0.98 P value: NR**
Yang, 2007[396] Index: Traditional WOMAC Reference: KOOS pain	**The Netherlands Size: 100 Mean age: 54.9 % of females: 37**	**construct validity**	**Lin's concordance correlation coefficient 0.75 P value: NR**
Yang, 2007[396] Index: Modified short-form WOMAC Reference: Knee Society score, function score	The Netherlands Size: 100 Mean age: 54.9 % of females: 37	construct validity	Lin's concordance correlation coefficient 0.37 P value: NR
Yang, 2007[396] Index: Short-form WOMAC function scale Reference: Knee Society score, function score	The Netherlands Size: 100 Mean age: 54.9 % of females: 37	construct validity	Lin's concordance correlation coefficient 0.41 P value: NR
Yang, 2007[396] Index: Short-form WOMAC function scale Reference: KOOS pain	**The Netherlands Size: 100 Mean age: 54.9 % of females: 37**	**construct validity**	**Lin's concordance correlation coefficient 0.66 P value: NR**
Yang, 2007[396] Index: Modified short-form WOMAC Reference: KOOS qaulity of life	The Netherlands Size: 100 Mean age: 54.9 % of females: 37	construct validity	Lin's concordance correlation coefficient 0.2 P value: NR
Yang, 2007[396] Index: Short-form WOMAC function scale Reference: KOOS qaulity of life	The Netherlands Size: 100 Mean age: 54.9 % of females: 37	construct validity	Lin's concordance correlation coefficient 0.18 P value: NR

Appendix Table F51. Validity of Western Ontario and McMaster Universities Osteoarthritis Index (continued)

Author, year Index and reference methods	Country Size , Mean age % of females	Domain Validity type	Validity estimate and significance
Yang, 2007[396] Index: Modified short-form WOMAC Reference: KOOS sport	The Netherlands Size: 100 Mean age: 54.9 % of females: 37	construct validity	Lin's concordance correlation coefficient 0.15 P value: NR
Yang, 2007[396] Index: Short-form WOMAC function scale Reference: KOOS sport	The Netherlands Size: 100 Mean age: 54.9 % of females: 37	construct validity	Lin's concordance correlation coefficient 0.17 P value: NR
Yang, 2007[396] Index: Modified short-form WOMAC Reference: Visual Analogue sclae for pain	The Netherlands Size: 100 Mean age: 54.9 % of females: 37	construct validity	Lin's concordance correlation coefficient 0.39 P value: NR
Yang, 2007[396] Index: Short-form WOMAC function scale Reference: Visual Analogue sclae for pain	The Netherlands Size: 100 Mean age: 54.9 % of females: 37	construct validity	Lin's concordance correlation coefficient 0.33 P value: NR
Yang, 2007[396] Index: Modified short-form WOMAC Reference: KOOS activities of daily living	**The Netherlands Size: 100 Mean age: 54.9 % of females: 37**	**construct validity**	**Lin's concordance correlation coefficient 0.94 P value: NR**
Yang, 2007[396] Index: Short-form WOMAC function scale Reference: KOOS activities of daily living	**The Netherlands Size: 100 Mean age: 54.9 % of females: 37**	**construct validity**	**Lin's concordance correlation coefficient 0.97 P value: NR**
Yang, 2007[396] Index: Modified short-form WOMAC Reference: KOOS pain	**The Netherlands Size: 100 Mean age: 54.9 % of females: 37**	**construct validity**	**Lin's concordance correlation coefficient 0.79 P value: NR**
Baron, 2007[336] Index: WOMAC- LF:function Reference: NRS (11-point numerical rating scale, score ranging from 0 to high)	**France Size: 878 Mean age: mean in WOMAC LF group for knee OA=66.5 and for WOMAC SF for knee OA=66.7 % of females: 69.24**	**Domain: function convergent validity**	**Spearman's correlation coefficient 0.64 P value: NR**
Baron, 2007[336] Index: WOMAC- LF:function Reference: NRS (11-point numerical rating scale, score ranging from 0 to high)	**France Size: 878 Mean age: mean in WOMAC LF group for knee OA=66.5 and for WOMAC SF for knee OA=66.7 % of females: 69.24**	**Domain: function convergent validity**	**Spearman's correlation coefficient 0.52 P value: NR**

Appendix Table F51. Validity of Western Ontario and McMaster Universities Osteoarthritis Index (continued)

Author, year Index and reference methods	Country Size , Mean age % of females	Domain Validity type	Validity estimate and significance
Baron, 2007[336] Index: WOMAC- LF:function Reference: NRS (11-point numerical rating scale, score ranging from 0 to high)	France Size: 878 Mean age: mean in WOMAC LF group for knee OA=66.5 and for WOMAC SF for knee OA=66.7 % of females: 69.24	Domain: function convergent validity	Spearman's correlation coefficient 0.53 P value: NR
Baron, 2007[336] Index: WOMAC- SF:function Reference: NRS (11-point numerical rating scale, score ranging from 0 to high)	France Size: 878 Mean age: mean in WOMAC LF group for knee OA=66.5 and for WOMAC SF for knee OA=66.7 % of females: 69.24	Domain: function convergent validity	Spearman's correlation coefficient 0.65 P value: NR
Baron, 2007[336] Index: WOMAC- SF:function Reference: NRS (11-point numerical rating scale, score ranging from 0 to high)	France Size: 878 Mean age: mean in WOMAC LF group for knee OA=66.5 and for WOMAC SF for knee OA=66.7 % of females: 69.24	Domain: function convergent validity	Spearman's correlation coefficient 0.54 P value: NR
Baron, 2007[336] Index: WOMAC- SF:function Reference: NRS (11-point numerical rating scale, score ranging from 0 to high)	France Size: 878 Mean age: mean in WOMAC LF group for knee OA=66.5 and for WOMAC SF for knee OA=66.7 % of females: 69.24	Domain: function convergent validity	Spearman's correlation coefficient 0.56 P value: NR
Seror, 2008[411] Index: WOMAC: function scale-French-Canadian version Reference: Importance questionnaire	France Size: 1218 Mean age: 66.9 % of females: 70.1	construct validity	spearman correlation 0.93 P value: <0.001
Seror, 2008[411] Index: WOMAC: function scale-French-Canadian version Reference: Importance questionnaire	France Size: 1218 Mean age: 66.9 % of females: 70.1	construct validity	spearman correlation 0.95 P value: <0.001
Seror, 2008[411] Index: WOMAC: function scale-French-Canadian version Reference: Importance questionnaire	France Size: 1218 Mean age: 66.9 % of females: 70.1	construct validity	spearman correlation 0.93 P value: <0.001

Appendix Table F51. Validity of Western Ontario and McMaster Universities Osteoarthritis Index (continued)

Author, year Index and reference methods	Country Size , Mean age % of females	Domain Validity type	Validity estimate and significance
Seror, 2008[411] Index: WOMAC: function scale-French-Canadian version Reference: Importance questionnaire	**France Size: 1218 Mean age: 66.9 % of females: 70.1**	**construct validity**	**spearman correlation 0.85 P value: <0.001**
Seror, 2008[411] Index: WOMAC: function scale-French-Canadian version Reference: Importance questionnaire	**France Size: 1218 Mean age: 66.9 % of females: 70.1**	**construct validity**	**spearman correlation 0.93 P value: <0.001**
Seror, 2008[411] Index: WOMAC: function scale-French-Canadian version Reference: Importance questionnaire	**France Size: 1218 Mean age: 66.9 % of females: 70.1**	**construct validity**	**spearman correlation 0.79 P value: <0.001**
Seror, 2008[411] Index: WOMAC: function scale-French-Canadian version Reference: Preference questionnaire	**France Size: 1218 Mean age: 66.9 % of females: 70.1**	**construct validity**	**spearman correlation 0.81 P value: <0.001**
Possley, [388] Index: WOMAC: function subscale Reference: 3-minute stair climb/descend	**USA Size: 105 Mean age: 67.5 % of females: 11**	**Domain: physical function construct validity**	**-0.5 P value: <0.001**
Possley, [388] Index: WOMAC: pain subscale Reference: 3-minute stair climb/descend	USA Size: 105 Mean age: 67.5 % of females: 11	Domain: pain construct validity	-0.28 P value: <0.05
Possley, [388] Index: WOMAC: function subscale Reference: 6 minute walk	USA Size: 105 Mean age: 67.5 % of females: 11	Domain: physical function construct validity	-0.49 P value: <0.001
Possley, [388] Index: WOMAC: function subscale Reference: 6 minute walk	USA Size: 105 Mean age: 67.5 % of females: 11	Domain: physical function construct validity	-0.09 P value: NR
Possley, [388] Index: WOMAC: function subscale Reference: 6 minute walk	USA Size: 105 Mean age: 67.5 % of females: 11	Domain: physical function construct validity	-0.06 P value: NR
Possley, [388] Index: WOMAC: pain subscale Reference: 6 minute walk	USA Size: 105 Mean age: 67.5 % of females: 11	Domain: pain construct validity	-0.28 P value: NR

Appendix Table F51. Validity of Western Ontario and McMaster Universities Osteoarthritis Index (continued)

Author, year Index and reference methods	Country Size , Mean age % of females	Domain Validity type	Validity estimate and significance
Possley, [388] Index: WOMAC: pain subscale Reference: 6 minute walk	USA Size: 105 Mean age: 67.5 % of females: 11	Domain: pain construct validity	-0.06 P value: NR
Possley, [388] Index: WOMAC: pain subscale Reference: 6 minute walk	USA Size: 105 Mean age: 67.5 % of females: 11	Domain: pain construct validity	-0.01 P value: NR
Ornetti, 2011[406] Index: WOMAC: function subscale Reference: VAS: pain	France Size: 881 Mean age: 66.7 % of females: 67.6	Domain: physical function construct validity	Spearman's correlation coefficient 0.486 P value: <0.001
Ornetti, 2011[406] Index: WOMAC: function subscale Reference: VAS: patient global assessment	France Size: 881 Mean age: 66.7 % of females: 67.6	Domain: physical function construct validity	Spearman's correlation coefficient 0.53 P value: <0.001
Ornetti, 2011[406] Index: WOMAC: function subscale Reference: VAS: physician global assessment	France Size: 881 Mean age: 66.7 % of females: 67.6	Domain: physical function construct validity	Spearman's correlation coefficient 0.458 P value: <0.001

Bold-strong correlations of >50%

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Wolfe, 1999[412] Index: WOMAC function scale: getting in and out of bath	USA Size: 655 Mean age: 67.8 % of females: 76.5	Domain: function Rasch analysis (unidimensionality)	INFIT statistic=1.53 (INFIT statistic >1.2-1.3 indicate that the item does not contribute to the underlying construct)
Wolfe, 1999[412] Index: WOMAC function scale: going down stairs	USA Size: 655 Mean age: 67.8 % of females: 76.5	Domain: function Rasch analysis (unidimensionality)	INFIT statistic=1.41
Wolfe, 1999[412] Index: WOMAC function scale: heavy chores	USA Size: 655 Mean age: 67.8 % of females: 76.5	Domain: function Rasch analysis (unidimensionality)	INFIT statistic=1.25
Wolfe, 1999[412] Index: WOMAC function scale: going upstairs	USA Size: 655 Mean age: 67.8 % of females: 76.5	Domain: function Rasch analysis (unidimensionality)	INFIT statistic=1.20
Wolfe, 1999[412] Index: WOMAC function scale: lying down	USA Size: 655 Mean age: 67.8 % of females: 76.5	Domain: function Rasch analysis (unidimensionality)	INFIT statistic=1.13
Wolfe, 1999[412] Index: WOMAC function scale: bending	USA Size: 655 Mean age: 67.8 % of females: 76.5	Domain: function Rasch analysis (unidimensionality)	INFIT statistic=1.07
Wolfe, 1999[412] Index: WOMAC function scale: putting on socks	**USA Size: 655 Mean age: 67.8 % of females: 76.5**	**Domain: function Rasch analysis (unidimensionality)**	**INFIT statistic=0.99**
Wolfe, 1999[412] Index: WOMAC function scale: shopping	**USA Size: 655 Mean age: 67.8 % of females: 76.5**	**Domain: function Rasch analysis (unidimensionality)**	**INFIT statistic=0.98**
Wolfe, 1999[412] Index: WOMAC function scale: walking on flat ground	**USA Size: 655 Mean age: 67.8 % of females: 76.5**	**Domain: function Rasch analysis (unidimensionality)**	**INFIT statistic=0.94**
Wolfe, 1999[412] Index: WOMAC function scale: getting on and off the toilet	**USA Size: 655 Mean age: 67.8 % of females: 76.5**	**Domain: function Rasch analysis (unidimensionality)**	**INFIT statistic=0.93**
Wolfe, 1999[412] Index: WOMAC function scale: sitting	**USA Size: 655 Mean age: 67.8 % of females: 76.5**	**Domain: function Rasch analysis (unidimensionality)**	**INFIT statistic=0.92**
Wolfe, 1999[412] Index: WOMAC function scale: standing	**USA Size: 655 Mean age: 67.8 % of females: 76.5**	**Domain: function Rasch analysis (unidimensionality)**	**INFIT statistic=0.89**
Wolfe, 1999[412] Index: WOMAC function scale: taking off socks	**USA Size: 655 Mean age: 67.8 % of females: 76.5**	**Domain: function Rasch analysis (unidimensionality)**	**INFIT statistic=0.88**

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Wolfe, 1999[412] Index: WOMAC function scale: arising from bed	**USA Size: 655 Mean age: 67.8 % of females: 76.5**	**Domain: function Rasch analysis (unidimensionality)**	**INFIT statistic=0.85**
Wolfe, 1999[412] Index: WOMAC function scale: arising from sitting	**USA Size: 655 Mean age: 67.8 % of females: 76.5**	**Domain: function Rasch analysis (unidimensionality)**	**INFIT statistic=0.81**
Wolfe, 1999[412] Index: WOMAC function scale: light chores	USA Size: 655 Mean age: 67.8 % of females: 76.5	Domain: function Rasch analysis (unidimensionality)	INFIT statistic=0.78. INFIT values of <0.7-0.8 indicate that items are muted (this may occur when there are several items that are similar or highly correlated , or one item is dependent on another)
Wolfe, 1999[412] Index: WOMAC function scale: getting in and out of a car	USA Size: 655 Mean age: 67.8 % of females: 76.5	Domain: function Rasch analysis (unidimensionality)	INFIT statistic=0.73
Wolfe, 1999[412] Index: WOMAC :pain scale: sitting pain	**USA Size: 655 Mean age: 67.8 % of females: 76.5**	**Domain: pain Rasch analysis (unidimensionality)**	**INFIT statistic=0.88**
Wolfe, 1999[412] Index: WOMAC :pain scale: night pain	USA Size: 655 Mean age: 67.8 % of females: 76.5	Domain: pain Rasch analysis (unidimensionality)	INFIT statistic=1.20
Wolfe, 1999[412] Index: WOMAC :pain scale: pain walking	USA Size: 655 Mean age: 67.8 % of females: 76.5	Domain: pain Rasch analysis (unidimensionality)	INFIT statistic=0.87
Wolfe, 1999[412] Index: WOMAC :pain scale: standing pain	USA Size: 655 Mean age: 67.8 % of females: 76.5	Domain: pain Rasch analysis (unidimensionality)	INFIT statistic=0.96
Wolfe, 1999[412] Index: WOMAC :pain scale: pain on stairs	USA Size: 655 Mean age: 67.8 % of females: 76.5	Domain: pain Rasch analysis (unidimensionality)	INFIT statistic=1.12
Ryser, 1999[413] Index: WOMAC-pain	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Pain-at night in bed Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=1.60
Ryser, 1999[413] Index: WOMAC-stiffness	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Stiffness morning Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=1.54
Ryser, 1999[413] Index: WOMAC-pain	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Pain-sitting or lying Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=1.08
Ryser, 1999[413] Index: WOMAC-pain	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Pain-walking on flat Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=1.00

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Ryser, 1999[413] Index: WOMAC-pain	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Pain-standing upright Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=0.92
Ryser, 1999[413] Index: WOMAC-pain	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Pain-going up/down stairs Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=0.79
Ryser, 1999[413] Index: WOMAC-physical function	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Physical function-light domestic duties Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=0.98
Ryser, 1999[413] Index: WOMAC-physical function	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Physical function-lying in bed Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=1.06
Ryser, 1999[413] Index: WOMAC-physical function	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Physical function-getting on/off toilet Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=0.91
Ryser, 1999[413] Index: WOMAC-physical function	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Physical function-sitting Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=0.84
Ryser, 1999[413] Index: WOMAC-physical function	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Physical function-walking on flat Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=0.84
Ryser, 1999[413] Index: WOMAC-physical function	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Physical function-taking off socks Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=0.81
Ryser, 1999[413] Index: WOMAC-physical function	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Physical function-rising from bed Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=0.74
Ryser, 1999[413] Index: WOMAC-physical function	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Physical function-standing Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=1.03
Ryser, 1999[413] Index: WOMAC-physical function	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Physical function-going shopping Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=0.89
Ryser, 1999[413] Index: WOMAC-physical function	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Physical function-putting on socks Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=0.90
Ryser, 1999[413] Index: WOMAC-physical function	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Physical function-getting in/out of bath Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=1.08

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Ryser, 1999[413] Index: WOMAC-physical function	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Physical function-getting in/out of car Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=0.76
Ryser, 1999[413] Index: WOMAC-physical function	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Physical function-ascending stairs Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=0.98
Ryser, 1999[413] Index: WOMAC-physical function	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Physical function-descending stairs Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=1.12
Ryser, 1999[413] Index: WOMAC-physical function	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Physical function-bending to floor Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=0.96
Ryser, 1999[413] Index: WOMAC-physical function	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Physical function-rising from sitting Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=0.65
Ryser, 1999[413] Index: WOMAC-physical function	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Physical function-heavy domestic duties Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=1.01
Ryser, 1999[413] Index: WOMAC-stiffness	Switzerland Size: 161 Mean age: 67 % of females: 70	Domain: Stiffness day Rasch analysis (unidimensionality)	Outfit MNSQ (Mean square)=1.21
Davis, 2003[414] Index: WOMAC: function subscale:"Getting on/off toilet" in the community sample and WOMAC physicall function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:(unidimensionality)	Infit MNSQ=1.34 -
Davis, 2003[414] Index: WOMAC: function subscale:"Getting on/off -toilet" in the community sample and WOMAC -physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:UnidimensionalityUnidimensionality	Outfit MNSQ=1.32 -
Davis, 2003[414] Index: WOMAC: pain:"Pain sitting	Canada Size: 1924 Mean age: In the	Rasch analysis: Unidimensionality	Infit MNSQ=1.22

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
or lying" in the community sample and WOMAC pain dimension of 3 items	community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: pain:"Pain sitting or lying" in the community sample and WOMAC pain dimension of 3 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.32
Davis, 2003[414] Index: WOMAC: pain:"Pain sitting or lying" in the preoperative surgery sample and WOMAC pain dimension of 3 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.27
Davis, 2003[414] Index: WOMAC: pain:"Night pain" in the community sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:UnidimensionalityUnidimensionality	Infit MNSQ=0.1.11
Davis, 2003[414] Index: WOMAC: pain:"Night pain" in the community sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee	Rasch analysis:Unidimensionality	Outfit MNSQ=1.13

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
	OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: pain:"Night pain" in the preopertive surgical sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.13
Davis, 2003[414] Index: WOMAC: pain:"Night pain" in the preopertive surgical sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.14
Davis, 2003[414] Index: WOMAC: pain:"Pain sitting or lying" in the community sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.98
Davis, 2003[414] Index: WOMAC: pain:"Pain sitting or lying" in the community sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.00
Davis, 2003[414] Index: WOMAC: pain:"Pain sitting or lying" in the preoperative surgery	Canada Size: 1924 Mean age: In the community sample mean age for	Rasch analysis:Unidimensionality	Infit MNSQ=1.20

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
sample and WOMAC pain dimension of 3 items	hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: pain:"Pain sitting or lying" in the preoperative surgical sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean agefor hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.93
Davis, 2003[414] Index: WOMAC: pain:"Pain sitting or lying" in the preoperative surgical sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.95
Davis, 2003[414] Index: WOMAC: pain:"Pain standing" in the community sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.0.96
Davis, 2003[414] Index: WOMAC: pain:"Pain standing" in the community sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years	Rasch analysis:Unidimensionality	Outfit MNSQ=0.96

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
	% of females: 44.96		
Davis, 2003[414] Index: WOMAC: pain:"Pain standing" in the preoperative surgical sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.92
Davis, 2003[414] Index: WOMAC: pain:"Pain standing" in the preoperative surgical sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.95
Davis, 2003[414] Index: WOMAC: pain:"Pain up/downstairs" in the community sample and WOMAC pain dimension of 3 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.81
Davis, 2003[414] Index: WOMAC: pain:"Pain up/downstairs" in the community sample and WOMAC pain dimension of 3 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.80
Davis, 2003[414] Index: WOMAC: pain:"Pain up/downstairs" in the community sample and WOMAC pain	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee	Rasch analysis:Unidimensionality	Infit MNSQ=0.98

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
dimension of 5 items	OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: pain:"Pain up/downstairs" in the community sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.97 item)
Davis, 2003[414] Index: WOMAC: pain:"Pain up/downstairs" in the preoperative surgery sample and WOMAC pain dimension of 3 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.94
Davis, 2003[414] Index: WOMAC: pain:"Pain up/downstairs" in the preoperative surgery sample and WOMAC pain dimension of 3 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.94
Davis, 2003[414] Index: WOMAC: pain:"Pain up/downstairs" in the preoperative surgical sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.05

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: pain:"Pain up/downstairs" in the preoperative surgical sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.04
Davis, 2003[414] Index: WOMAC: pain:"Pain walking on flat" in the community sample and WOMAC pain dimension of 3 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.84
Davis, 2003[414] Index: WOMAC: pain:"Pain walking on flat" in the community sample and WOMAC pain dimension of 3 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.84
Davis, 2003[414] Index: WOMAC: pain:"Pain walking on flat" in the community sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.0.96
Davis, 2003[414] Index: WOMAC: pain:"Pain walking on flat" in the community sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the	Rasch analysis:Unidimensionality	Outfit MNSQ=0.95

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
	surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: pain:"Pain walking on flat" in the preoperative surgery sample and WOMAC pain dimension of 3 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.84
Davis, 2003[414] Index: WOMAC: pain:"Pain walking on flat" in the preoperative surgery sample and WOMAC pain dimension of 3 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.84
Davis, 2003[414] Index: WOMAC: pain:"Pain walking on flat" in the preoperative surgical sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.95
Davis, 2003[414] Index: WOMAC: pain:"Pain walking on flat" in the preoperative surgical sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.91

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: function subscale:"Bending to the floor" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.23
Davis, 2003[414] Index: WOMAC: function subscale:"Bending to the floor" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.24
Davis, 2003[414] Index: WOMAC: function subscale:"Bending to the floor" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.24
Davis, 2003[414] Index: WOMAC: function subscale:"Bending to the floor" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.22
Davis, 2003[414] Index: WOMAC: function subscale:"Descending stairs" in the preoperative surgery sample and WOMAC physical function	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the	Rasch analysis:Unidimensionality	Infit MNSQ=1.24

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
dimension of 14 items	surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: function subscale:"Descending stairs" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.21
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from bed" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.78(
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from bed" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.79
Davis, 2003[414] Index: WOMAC: function subscale:"Taking off socks/stockings" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.26

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: function subscale:"Taking off socks/stockings" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.58
Davis, 2003[414] Index: WOMAC: function subscale:"Taking off socks/stockings" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.48
Davis, 2003[414] Index: WOMAC: function subscale:"Ascending stairs" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.94
Davis, 2003[414] Index: WOMAC: function subscale:"Ascending stairs" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.94
Davis, 2003[414] Index: WOMAC: function subscale:"Ascending stairs" in the community sample and WOMAC physical function dimension of 17	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the	Rasch analysis:Unidimensionality	Infit MNSQ=0.92

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
items	surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: function subscale:"Ascending stairs" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.92
Davis, 2003[414] Index: WOMAC: function subscale:"Ascending stairs" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.98
Davis, 2003[414] Index: WOMAC: function subscale:"Ascending stairs" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.97
Davis, 2003[414] Index: WOMAC: function subscale:"Ascending stairs" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.95

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: function subscale:"Ascending stairs" in the preoperative surgery sample and WOMAC physical l function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.94
Davis, 2003[414] Index: WOMAC: function subscale:"Bending to the floor" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.13
Davis, 2003[414] Index: WOMAC: function subscale:"Bending to the floor" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.13
Davis, 2003[414] Index: WOMAC: function subscale:"Bending to the floor" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.20
Davis, 2003[414] Index: WOMAC: function subscale:"Bending to the floor" in the preoperative surgery sample and WOMAC physical function	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the	Rasch analysis:Unidimensionality	Outfit MNSQ=1.19

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
dimension of 17 items	surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: function subscale:"Descending stairs" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.09
Davis, 2003[414] Index: WOMAC: function subscale:"Descending stairs" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.08
Davis, 2003[414] Index: WOMAC: function subscale:"Descending stairs" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.07
Davis, 2003[414] Index: WOMAC: function subscale:"Descending stairs" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.07

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: function subscale:"Descending stairs" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.23
Davis, 2003[414] Index: WOMAC: function subscale:"Descending stairs" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.19
Davis, 2003[414] Index: WOMAC: function subscale:"Getting in/out of bath" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.10
Davis, 2003[414] Index: WOMAC: function subscale:"Getting in/out of bath" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.13
Davis, 2003[414] Index: WOMAC: function subscale:"Getting in/out of bath" in the preoperative surgery sample and WOMAC physical function	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the	Rasch analysis:Unidimensionality	Outfit MNSQ=1.14

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
dimension of 17 items	surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: function subscale:"Getting in/out of bath" in the preoperative surgery sample and WOMAC physical l function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.14
Davis, 2003[414] Index: WOMAC: function subscale:"Getting in/out of car" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.91
Davis, 2003[414] Index: WOMAC: function subscale:"Getting in/out of car" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.91
Davis, 2003[414] Index: WOMAC: function subscale:"Getting in/out of car" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.93

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: function subscale:"Getting in/out of car" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.92
Davis, 2003[414] Index: WOMAC: function subscale:"Getting in/out of car" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.87
Davis, 2003[414] Index: WOMAC: function subscale:"Getting in/out of car" in the preoperative surgery sample and WOMAC physical l function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.86
Davis, 2003[414] Index: WOMAC: function subscale:"Getting in/out of car" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.86
Davis, 2003[414] Index: WOMAC: function subscale:"Getting in/out of car" in the preoperative surgery sample and WOMAC physical function	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the	Rasch analysis:Unidimensionality	Outfit MNSQ=0.86

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
dimension of 17 items	surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: function subscale:"Getting on/off toilet" in the preoperative surgery sample and WOMAC physical l function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.86
Davis, 2003[414] Index: WOMAC: function subscale:"Getting on/off toilet" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.87
Davis, 2003[414] Index: WOMAC: function subscale:"Going shopping" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.04
Davis, 2003[414] Index: WOMAC: function subscale:"Going shopping" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.06

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: function subscale:"Going shopping" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.96
Davis, 2003[414] Index: WOMAC: function subscale:"Going shopping" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.99
Davis, 2003[414] Index: WOMAC: function subscale:"Going shopping" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.88
Davis, 2003[414] Index: WOMAC: function subscale:"Going shopping" in the preoperative surgery sample and WOMAC physical l function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.88
Davis, 2003[414] Index: WOMAC: function subscale:"Going shopping" in the preoperative surgery sample and WOMAC physical function	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the	Rasch analysis:Unidimensionality	Infit MNSQ=0.87

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
dimension of 17 items	surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: function subscale:"Going shopping" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.90
Davis, 2003[414] Index: WOMAC: function subscale:"Heavy domestic duties" in the community sample and WOMAC physical l function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.97
Davis, 2003[414] Index: WOMAC: function subscale:"Heavy domestic duties" in the community sample and WOMAC physical l function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.96
Davis, 2003[414] Index: WOMAC: function subscale:"Heavy domestic duties" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.13

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: function subscale:"Heavy domestic duties" in the preoperative surgery sample and WOMAC physical l function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.10
Davis, 2003[414] Index: WOMAC: function subscale:"Light domestic duties" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.05
Davis, 2003[414] Index: WOMAC: function subscale:"Light domestic duties" in the community sample and WOMAC phsyical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.07 with another item)
Davis, 2003[414] Index: WOMAC: function subscale:"Light domestic duties" in the community sample and WOMAC physical l function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.02
Davis, 2003[414] Index: WOMAC: function subscale:"Light domestic duties" in the community sample and WOMAC physical function	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the	Rasch analysis:Unidimensionality	Outfit MNSQ=1.03

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
dimension of 17 items	surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: function subscale:"Light domestic duties" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.94
Davis, 2003[414] Index: WOMAC: function subscale:"Light domestic duties" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.93
Davis, 2003[414] Index: WOMAC: function subscale:"Light domestic duties" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.89
Davis, 2003[414] Index: WOMAC: function subscale:"Light domestic duties" in the preoperative surgery sample and WOMAC physical l function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.87

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: function subscale:"Lying in bed" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.04
Davis, 2003[414] Index: WOMAC: function subscale:"Lying in bed" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.06
Davis, 2003[414] Index: WOMAC: function subscale:"Lying in bed" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.99
Davis, 2003[414] Index: WOMAC: function subscale:"Lying in bed" in the community sample and WOMAC physical l function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.99
Davis, 2003[414] Index: WOMAC: function subscale:"Lying in bed" in the preoperative surgery sample and WOMAC physical function	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the	Rasch analysis:Unidimensionality	Infit MNSQ=1.13

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
dimension of 14 items	surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: function subscale:"Lying in bed" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.19
Davis, 2003[414] Index: WOMAC: function subscale:"Lying in bed" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.14
Davis, 2003[414] Index: WOMAC: function subscale:"Lying in bed" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.17
Davis, 2003[414] Index: WOMAC: function subscale:"Putting on socks/ stockings" in the community sample and WOMAC physical l function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.86

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: function subscale:"Putting on socks/ stockings" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.84
Davis, 2003[414] Index: WOMAC: function subscale:"Putting on socks/ stockings" in the community sample and WOMAC physical l function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.88
Davis, 2003[414] Index: WOMAC: function subscale:"Putting on socks/ stockings" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.87
Davis, 2003[414] Index: WOMAC: function subscale:"Putting on socks/ stockings" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.07
Davis, 2003[414] Index: WOMAC: function subscale:"Putting on socks/ stockings" in the preoperative surgery sample and WOMAC	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the	Rasch analysis:Unidimensionality	Outfit MNSQ=1.08

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
physical function dimension of 14 items	surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: function subscale:"Putting on socks/ stockings" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.10
Davis, 2003[414] Index: WOMAC: function subscale:"Putting on socks/ stockings" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.08
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from bed" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.75
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from bed" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.81

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from bed" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.84
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from bed" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.84
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from bed" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.85
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from bed" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.85
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from sitting" in the community sample and WOMAC physical function dimension of 14	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the	Rasch analysis:Unidimensionality	Infit MNSQ=0.81

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
items	surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from sitting" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.81
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from sitting" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.82
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from sitting" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.81
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from sitting" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.84

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from sitting" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.83
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from sitting" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.82
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from sitting" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.83
Davis, 2003[414] Index: WOMAC: function subscale:"Sitting" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.92
Davis, 2003[414] Index: WOMAC: function subscale:"Sitting" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the	Rasch analysis:Unidimensionality	Outfit MNSQ=0.90

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
	surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: function subscale:"Sitting" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.92
Davis, 2003[414] Index: WOMAC: function subscale:"Sitting" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In th age e community sample mean for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.90
Davis, 2003[414] Index: WOMAC: function subscale:"Sitting" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.97
Davis, 2003[414] Index: WOMAC: function subscale:"Sitting" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.97

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: function subscale:"Sitting" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.97
Davis, 2003[414] Index: WOMAC: function subscale:"Sitting" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.94
Davis, 2003[414] Index: WOMAC: function subscale:"Standing" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.02
Davis, 2003[414] Index: WOMAC: function subscale:"Standing" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In t age he community sample mean for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.01
Davis, 2003[414] Index: WOMAC: function subscale:"Standing" in the community sample and WOMAC physical function dimension of 17	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the	Rasch analysis:Unidimensionality	Infit MNSQ=0.99

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
items	surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: function subscale:"Standing" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.98
Davis, 2003[414] Index: WOMAC: function subscale:"Standing" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.07
Davis, 2003[414] Index: WOMAC: function subscale:"Standing" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.07
Davis, 2003[414] Index: WOMAC: function subscale:"Standing" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.08

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: function subscale:"Standing" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.08
Davis, 2003[414] Index: WOMAC: function subscale:"Taking off socks/stockings" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.20
Davis, 2003[414] Index: WOMAC: function subscale:"Taking off socks/stockings" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.00
Davis, 2003[414] Index: WOMAC: function subscale:"Taking off socks/stockings" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.99
Davis, 2003[414] Index: WOMAC: function subscale:"Taking off socks/stockings" in the preoperative surgery sample and	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the	Rasch analysis:Unidimensionality	Infit MNSQ=1.01

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
WOMAC physical function dimension of 17 items	surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: function subscale:"Taking off socks/stockings" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.99
Davis, 2003[414] Index: WOMAC: function subscale:"Walking on flat" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.03
Davis, 2003[414] Index: WOMAC: function subscale:"Walking on flat" in the community sample and WOMAC physical l function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.07
Davis, 2003[414] Index: WOMAC: function subscale:"Walking on flat" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=1.01

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: function subscale:"Walking on flat" in the community sample and WOMAC physical l function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=1.05
Davis, 2003[414] Index: WOMAC: function subscale:"Walking on flat" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Infit MNSQ=0.95
Davis, 2003[414] Index: WOMAC: function subscale:"Walking on flat" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis:Unidimensionality	Outfit MNSQ=0.94
Davis, 2003[414] Index: WOMAC: function subscale:"Walking on flat" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	:Rasch analysis:Unidimensionality	Infit MNSQ=0.97
Davis, 2003[414] Index: WOMAC: function subscale:"Walking on flat" in the preoperative surgery sample and WOMAC physical function	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the	Rasch analysis:Unidimensionality	Outfit MNSQ=0.98

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
dimension of 17 items	surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: function subscale:"Ascending stairs" in the community sample and WOMAC physicalfunction dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-level scaling (item-difficulty)	Logit = -1.04
Davis, 2003[414] Index: WOMAC: function subscale:"Ascending stairs" in the community sample and WOMAC physicalfunction dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.98
Davis, 2003[414] Index: WOMAC: function subscale:"Ascending stairs" in the preoperative surgery sample and WOMAC physicalfunction dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.87
Davis, 2003[414] Index: WOMAC: function subscale:"Ascending stairs" in the preoperative surgery sample and WOMAC physicalfunction dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.76

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: function subscale:"Bending to the floor" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.76
Davis, 2003[414] Index: WOMAC: function subscale:"Bending to the floor" in the community sample and WOMAC physicalfunction dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.72
Davis, 2003[414] Index: WOMAC: function subscale:"Bending to the floor" in the preoperative surgery sample and WOMAC physicalfunction dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.61
Davis, 2003[414] Index: WOMAC: function subscale:"Bending to the floor" in the preoperative surgery sample and WOMAC physicalfunction dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.51
Davis, 2003[414] Index: WOMAC: function subscale:"Descending stairs" in the community sample and WOMAC physicalfunction dimension of 14	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.79

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
items	surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: function subscale:"Descending stairs" in the community sample and WOMAC physicalfunction dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.74
Davis, 2003[414] Index: WOMAC: function subscale:"Descending stairs" in the preoperative surgery sample and WOMAC physicalfunction dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.53
Davis, 2003[414] Index: WOMAC: function subscale:"Descending stairs" in the preoperative surgery sample and WOMAC physicalfunction dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.44
Davis, 2003[414] Index: WOMAC: function subscale:"Getting in/out of bath" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 1.30

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: function subscale:"Getting in/out of bath" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.38
Davis, 2003[414] Index: WOMAC: function subscale:"Getting in/out of car" in the community sample and WOMAC physicalfunction dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.07
Davis, 2003[414] Index: WOMAC: function subscale:"Getting in/out of car" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.04
Davis, 2003[414] Index: WOMAC: function subscale:"Getting in/out of car" in the preoperative surgery sample and WOMAC physicall function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.64
Davis, 2003[414] Index: WOMAC: function subscale:"Getting in/out of car" in the preoperative surgery sample and WOMAC physical function	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.54

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
dimension of 17 items	surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: function subscale:"Getting on/off toilet" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -1.47
Davis, 2003[414] Index: WOMAC: function subscale:"Getting on/off toilet" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.59
Davis, 2003[414] Index: WOMAC: function subscale:"Going shopping" in the community sample and WOMAC physicalfunction dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.28
Davis, 2003[414] Index: WOMAC: function subscale:"Going shopping" in the community sample and WOMAC physicalfunction dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.25

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: function subscale:"Going shopping" in the preoperative surgery sample and WOMAC physicall function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.67
Davis, 2003[414] Index: WOMAC: function subscale:"Going shopping" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.58
Davis, 2003[414] Index: WOMAC: function subscale:"Heavy domestic duties" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.08
Davis, 2003[414] Index: WOMAC: function subscale:"Heavy domestic duties" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -1.37
Davis, 2003[414] Index: WOMAC: function subscale:"Light domestic duties" in the community sample and WOMAC physical function	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.20

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
dimension of 14 items	surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: function subscale:"Light domestic duties" in the community sample and WOMAC physicalfunction dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.18
Davis, 2003[414] Index: WOMAC: function subscale:"Light domestic duties" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.66
Davis, 2003[414] Index: WOMAC: function subscale:"Light domestic duties" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.73
Davis, 2003[414] Index: WOMAC: function subscale:"Lying in bed" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.61

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: function subscale:"Lying in bed" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.60
Davis, 2003[414] Index: WOMAC: function subscale:"Lying in bed" in the preoperative surgery sample and WOMAC physicalfunction dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 1.12
Davis, 2003[414] Index: WOMAC: function subscale:"Lying in bed" in the preoperative surgery sample and WOMAC physicalfunction dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 1.18
Davis, 2003[414] Index: WOMAC: function subscale:"Putting on socks/ stockings" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.25
Davis, 2003[414] Index: WOMAC: function subscale:"Putting on socks/ stockings" in the community sample and WOMAC physicalfunction	Canada Size: 1924 Mean age: In t age he community sample mean for hip OA =69.8 years and for knee OA=70.2 years and in the	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.25

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
dimension of 17 items	surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: function subscale:"Putting on socks/ stockings" in the preoperative surgery sample and WOMAC physicalfunction dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.19
Davis, 2003[414] Index: WOMAC: function subscale:"Putting on socks/ stockings" in the preoperative surgery sample and WOMAC physicalfunction dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.10
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from bed" in the community sample and WOMAC physicalfunction dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.35
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from bed" in the community sample and WOMAC physicalfunction dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.35

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from bed" in the preoperative surgery sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.24
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from bed" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.31
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from sitting" in the community sample and WOMAC physicalfunction dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.54
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from sitting" in the community sample and WOMAC physicalfunction dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.49
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from sitting" in the preoperative surgery sample and WOMAC physical function	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.40

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
dimension of 14 items	surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: function subscale:"Rising from sitting" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.31
Davis, 2003[414] Index: WOMAC: function subscale:"Sitting" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.73
Davis, 2003[414] Index: WOMAC: function subscale:"Sitting" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.73
Davis, 2003[414] Index: WOMAC: function subscale:"Sitting" in the preoperative surgery sample and WOMAC physicalfunction dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 1.38

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: function subscale:"Sitting" in the preoperative surgery sample and WOMAC physicalfunction dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 1.44
Davis, 2003[414] Index: WOMAC: function subscale:"Standing" in the community sample and WOMAC physicalfunction dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.11
Davis, 2003[414] Index: WOMAC: function subscale:"Standing" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.13
Davis, 2003[414] Index: WOMAC: function subscale:"Standing" in the preoperative surgery sample and WOMAC physicalfunction dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.13
Davis, 2003[414] Index: WOMAC: function subscale:"Standing" in the preoperative surgery sample and WOMAC physicalfunction	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.21

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
dimension of 17 items	surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: function subscale:"Taking off socks/stockings" in the community sample and WOMAC physicalfunction dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 1.24
Davis, 2003[414] Index: WOMAC: function subscale:"Taking off socks/stockings" in the community sample and WOMAC physicalfunction dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 1.22
Davis, 2003[414] Index: WOMAC: function subscale:"Taking off socks/stockings" in the preoperative surgery sample and WOMAC physicalfunction dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.22
Davis, 2003[414] Index: WOMAC: function subscale:"Taking off socks/stockings" in the preoperative surgery sample and WOMAC physicalfunction dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.29

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: function subscale:"Walking on flat" in the community sample and WOMAC physical function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.38
Davis, 2003[414] Index: WOMAC: function subscale:"Walking on flat" in the community sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.39
Davis, 2003[414] Index: WOMAC: function subscale:"Walking on flat" in the preoperative surgery sample and WOMAC physicall function dimension of 14 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.16
Davis, 2003[414] Index: WOMAC: function subscale:"Walking on flat" in the preoperative surgery sample and WOMAC physical function dimension of 17 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.24
Davis, 2003[414] Index: WOMAC: pain:"Night pain" in the community sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the	Rasch analysis: Interval-scaling (item-difficulty)	Logit =0.54

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
	surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: pain:"Night pain" in the preoperative surgical sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit =0.62
Davis, 2003[414] Index: WOMAC: pain:"Pain sitting or lying" in the community sample and WOMAC pain dimension of 3 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit =1.27
Davis, 2003[414] Index: WOMAC: pain:"Pain sitting or lying" in the community sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit =0.87
Davis, 2003[414] Index: WOMAC: pain:"Pain sitting or lying" in the preoperative surgery sample and WOMAC pain dimension of 3 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit =1.70

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: pain:"Pain sitting or lying" in the preoperative surgical sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit =1.24
Davis, 2003[414] Index: WOMAC: pain:"Pain standing" in the community sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.15
Davis, 2003[414] Index: WOMAC: pain:"Pain standing" in the preoperative surgical sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.05
Davis, 2003[414] Index: WOMAC: pain:"Pain up/downstairs" in the community sample and WOMAC pain dimension of 3 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -1.38
Davis, 2003[414] Index: WOMAC: pain:"Pain up/downstairs" in the community sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 year age s and in the	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -1.23

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
	surgical sample mean for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96		
Davis, 2003[414] Index: WOMAC: pain:"Pain up/downstairs" in the preoperative surgery sample and WOMAC pain dimension of 3 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -1.60
Davis, 2003[414] Index: WOMAC: pain:"Pain up/downstairs" in the preoperative surgical sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -1.59
Davis, 2003[414] Index: WOMAC: pain:"Pain walking on flat" in the community sample and WOMAC pain dimension of 3 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = 0.11
Davis, 2003[414] Index: WOMAC: pain:"Pain walking on flat" in the community sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.04

Appendix Table F52. Rasch analysis* of Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Index test	Country Size; Mean age; % of females	Domain Type of the analysis	Results
Davis, 2003[414] Index: WOMAC: pain:"Pain walking on flat" in the preoperative surgery sample and WOMAC pain dimension of 3 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.04
Davis, 2003[414] Index: WOMAC: pain:"Pain walking on flat" in the preoperative surgical sample and WOMAC pain dimension of 5 items	Canada Size: 1924 Mean age: In the community sample mean age for hip OA =69.8 years and for knee OA=70.2 years and in the surgical sample mean age for hip OA=62.9 years and for knee OA=71.3 years % of females: 44.96	Rasch analysis: Interval-scaling (item-difficulty)	Logit = -0.21

Significance and interpretation:
Fit range is 0.80 to 1.20 for both Infit and Outfit statistics; fit greater than 1.2 represent noise in the data, and generally indicate that the item does not belong to the unidimensionality construct, and fit statistics below 0.80 indicate that the item is "muted" or often has interdependence with another item)[414]
*- The Rasch model is probabilistic, and provides estimates of item difficulty on interval-level scaling based on a logit function. For the WOMAC, items are calibrated on a hierarchy of easiest to most difficult on a positive to negative scale; that is, more difficult items are indicated by negative item logit values. The mean logit for a group of items that fit the Rasch model should be zero, with a standard deviation of 1[414]

Appendix Table F53. Association between gait and patient centered outcomes

Author, year	Study/Adjustment	Gait	Outcome	Estimate	Mean	Lower 95% CI	Upper 95% CI
Verghese, 2006[415]	The Einstein Aging study Age, Sex	Any abnormality: Overall vs. normal gait	Institutionalization (Nursing Home or Assisted Living Facility Placement)	HR	**2.12**	**1.33**	**3.37**
Verghese, 2006[415]		Any abnormality: Mild (walks without assistance) vs. normal gait	Institutionalization (Nursing Home or Assisted Living Facility Placement)	HR	**1.99**	**1.18**	**3.36**
Verghese, 2006[415]		Any abnormality: Moderate (uses walking aids) - Severe (uses a wheelchair or stands with assistance) vs. normal gait	Institutionalization (Nursing Home or Assisted Living Facility Placement)	HR	**2.67**	**1.47**	**4.84**
Verghese, 2006[415]		Non-neurological abnormality: Overall (from causes such as arthritis, cardiac disease, chronic lung disease, and peripheral vascular disease) vs. normal gait	Institutionalization (Nursing Home or Assisted Living Facility Placement)	HR	1.29	0.79	2.13
Verghese, 2006[415]		Non-neurological abnormality: Mild (walks without assistance) vs. normal gait	Institutionalization (Nursing Home or Assisted Living Facility Placement)	HR	0.98	0.51	1.88
Verghese, 2006[415]		Non-neurological abnormality: Moderate-severe Moderate (uses walking aids) - Severe (uses a wheelchair or stands with assistance) vs. normal gait	Institutionalization (Nursing Home or Assisted Living Facility Placement)	HR	1.87	0.99	3.53
Verghese, 2006[415]		Any abnormality: Overall vs. normal gait	Institutionalization (Nursing Home or Assisted Living Facility Placement) or Death	HR	**2.16**	**1.45**	**3.24**
Verghese, 2006[415]		Any abnormality: Mild (walks without assistance) vs. normal gait	Institutionalization (Nursing Home or Assisted Living Facility Placement) or Death	HR	**1.76**	**1.01**	**2.84**
Verghese, 2006[415]		Any abnormality: Moderate (uses walking aids) - Severe (uses a wheelchair or stands with assistance) vs. normal gait	Institutionalization (Nursing Home or Assisted Living Facility Placement) or Death	HR	**3.18**	**1.94**	**5.21**

Appendix Table F53. Association between gait and patient centered outcomes (continued)

Author, year	Study/Adjustment	Gait	Outcome	Estimate	Mean	Lower 95% CI	Upper 95% CI
Verghese, 2006[415]		Non-neurological abnormality: Overall vs. normal gait	Institutionalization (Nursing Home or Assisted Living Facility Placement) or Death	HR	**1.55**	**1.02**	**2.36**
Verghese, 2006[415]		Non-neurological abnormality: Mild (walks without assistance) Overall vs. normal gait	Institutionalization (Nursing Home or Assisted Living Facility Placement) or Death	HR	1	0.66	1.79
Verghese, 2006[415]		Non-neurological abnormality: Moderate-severe Moderate (uses walking aids) - Severe (uses a wheelchair or stands with assistance) Overall vs. normal gait	Institutionalization (Nursing Home or Assisted Living Facility Placement) or Death	HR	**2.54**	**1.52**	**4.23**
Woo, 1999[416]	Chinese elderly People Age, sex	Walking speed (16ft)	Dependency (Bartel Index <20)	OR	**1.094**	**1.05**	**1.14**
Woo, 1999[416]		Stride length (ft)	Dependency (Bartel Index <20)	OR	**0.153**	**0.07**	**0.33**
Woo, 1999[416]		Stride length (ft)	Institutionalization	OR	**0.095**	**0.03**	**0.3**
Jylha, 2001[417]	the Women's Health and Aging Study Chronic conditions, cognitive functioning, depressive symptoms, demographic characteristics	Difficulty in Walking One Quarter Mile- A little	Fair or Poor Self-rated Health	OR	0.73	0.45	1.19
Jylha, 2001[417]		Difficulty in Walking One Quarter Mile- Some-	Fair or Poor Self-rated Health	OR	1.1	0.68	1.78
Jylha, 2001[417]		Difficulty in Walking One Quarter Mile- A lot	Fair or Poor Self-rated Health	OR	**2.31**	**1.47**	**3.63**
Jylha, 2001[417]		Difficulty in Walking One Quarter Mile- Not able	Fair or Poor Self-rated Health	OR	**2.2**	**1.34**	**3.59**
Jylha, 2001[417]		2nd quartile (cutoff < 1.143 m/s) vs. > 1.143m/s	Fair or Poor Self-rated Health	OR	1.33	0.86	2.06
Jylha, 2001[417]		3rd quartile (cutoff < 0.889 m/s)vs. > 1.143m/s	Fair or Poor Self-rated Health	OR	**1.98**	**1.24**	**3.17**
Jylha, 2001[417]		4th quartile (cutoff < 0.625 m/s)vs. > 1.143m/s	Fair or Poor Self-rated Health	OR	**2.32**	**1.29**	**4.17**
Onder, 2005[418]	the Women's Health and Aging Study Age, Race	0.31 m/s vs. <0.31 m/s	Incident ADL Disability (Progressive)	RR	**0.65**	**0.52**	**0.82**

Appendix Table F53. Association between gait and patient centered outcomes (continued)

Author, year	Study/Adjustment	Gait	Outcome	Estimate	Mean	Lower 95% CI	Upper 95% CI
Onder, 2005[418]		0.31 m/s vs. <0.31 m/s	Incident ADL Disability (Catastrophic)	RR	**0.72**	**0.53**	**0.99**
Onder, 2005[418]		0.31 m/s vs. <0.31 m/s	Incident Mobility Disability (Progressive)	RR	**0.27**	**0.19**	**0.38**
Onder, 2005[418]		0.31 m/s vs. <0.31 m/s	Incident Mobility Disability (Catastrophic)	RR	**0.57**	**0.41**	**0.8**
Onder, 2005[418]		0.31 m/s vs. <0.31 m/s	Incident Upper Extremity Disability (Progressive); disability lifting 4.5kg	RR	**0.7**	**0.54**	**0.91**
Onder, 2005[418]		0.31 m/s vs. <0.31 m/s	Incident Upper Extremity Disability (Catastrophic); disability lifting 4.5kg	RR	**0.64**	**0.48**	**0.86**

Bold-strong correlations of >50%

Appendix Table F54. Minimal clinically important differences in the Western Ontario McMaster Universities Osteoarthritis Index

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
Dougados, 2000[419] Method: Anchor Worst to best: Varies WOMAC, Lequesne Functional Severity Index, Global VAS	1) OARSI Responder Criteria—Proposition A: This emphasizes the domain 'pain'. A 'high' improvement in pain was sufficient to define a responder. However, using this set of criteria, a patient can be also considered as a responder if an improvement of 'moderate' magnitude is observed in two of the three domains, i.e. pain, function and patient's global assessment. 2) OARSI Responder Criteria—Proposition B: This scenario applies equal importance to 'pain' and 'function', requiring a 'high' response of one OR the other. Alternatively, a 'moderate' magnitude of response could be present in two of the three domains..	If there was a 'high' improvement in pain: improvement of at least 40% was required (ranging from 40 to 60%) together with an absolute improvement of at least 20 NU (normalized units) ranging from 20 to 30. If there was moderate improvement in pain, function, and patient's global assessment: a relative improvement ranging from 15 to 35% and an absolute improvement ranging from 10 to 20 NU. Relative change: percentage of change during the study (final minus baseline over baseline*100); absolute change: absolute change during the study (final minus baseline on a 0-100 interval scale).
Angst, 2001[420] Method: Anchor Worst to best: 10 to 0 (for each of the 24 items) WOMAC pain scale	The transition questionnaire was used to gather data from the patients about their current subjective health status in relation to the OA joint in terms of their general health. At the 3-month follow up, patients had to compare their general health status with that of 3 months earlier, i.e., with that at baseline examination, using the assessment categories "much worse," "slightly worse," "equal," "slightly better," and "much better."	The mean score difference between the "equal" group and the "slightly better" group =0.67 was the MCID for improvement
Angst, 2001[420] Method: Anchor Worst to best: 10 to 0 (for each of the 24 items) WOMAC: pain scale	The transition questionnaire was used to gather data from the patients about their current subjective health status in relation to the OA joint in terms of their general health. At the 3-month follow up, patients had to compare their general health status with that of 3 months earlier, i.e., with that at baseline examination, using the assessment categories "much worse," "slightly worse," "equal," "slightly better," and "much better."	The mean score difference between the "equal" group and the "slightly better" group =1.33 was the MCID for worsening
Angst, 2001[420] Method: Anchor Worst to best: 10 to 0 (for each of the 24 items) WOMAC: pain scale	The transition questionnaire was used to gather data from the patients about their current subjective health status in relation to the OA joint in terms of their general health. At the 3-month follow up, patients had to compare their general health status with that of 3 months earlier, i.e., with that at baseline examination, using the assessment categories "much worse," "slightly worse," "equal," "slightly better," and "much better."	The mean score difference between the "equal" group and the "slightly better" group =0.67 was the MCID for improvement
Angst, 2001[420] Method: Anchor Worst to best: 10 to 0 (for each of the 24 items)	The transition questionnaire was used to gather data from the patients about their current subjective health status in relation to the OA joint in terms of their general health. At the 3-month follow up, patients had to compare their general health status with that of 3 months earlier, i.e.,	The mean score difference between the "equal" group and the "slightly better" group =1.29 was the MCID for worsening

Appendix Table F54. Minimal clinically important differences in the Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
WOMAC:pain scale	with that at baseline examination, using the assessment categories "much worse," "slightly worse," "equal," "slightly better," and "much better."	
Angst, 2001[420] Method: Anchor Worst to best: 10 to 0 (for each of the 24 items) WOMAC:pain scale	The transition questionnaire was used to gather data from the patients about their current subjective health status in relation to the OA joint in terms of their general health. At the 3-month follow up, patients had to compare their general health status with that of 3 months earlier, i.e., with that at baseline examination, using the assessment categories "much worse," "slightly worse," "equal," "slightly better," and "much better."	The mean score difference between the "equal" group and the "slightly better" group =0.75 was the MCID for improvement
Angst, 2001[420] Method: Anchor Worst to best: 10 to 0 (for each of the 24 items) WOMAC:pain scale	The transition questionnaire was used to gather data from the patients about their current subjective health status in relation to the OA joint in terms of their general health. At the 3-month follow up, patients had to compare their general health status with that of 3 months earlier, i.e., with that at baseline examination, using the assessment categories "much worse," "slightly worse," "equal," "slightly better," and "much better."	The mean score difference between the "equal" group and the "slightly better" group =1.10 was the MCID for worsening
Angst, 2001[420] Method: Anchor Worst to best: 10 to 0 (for each of the 24 items) WOMAC:pain scale	The transition questionnaire was used to gather data from the patients about their current subjective health status in relation to the OA joint in terms of their general health. At the 3-month follow up, patients had to compare their general health status with that of 3 months earlier, i.e., with that at baseline examination, using the assessment categories "much worse," "slightly worse," "equal," "slightly better," and "much better."	The mean score difference between the "equal" group and the "slightly better" group =0.51 was the MCID for worsening
Angst, 2001[420] Method: Anchor Worst to best: 10 to 0 (for each of the 24 items) WOMAC:pain scale	The transition questionnaire was used to gather data from the patients about their current subjective health status in relation to the OA joint in terms of their general health. At the 3-month follow up, patients had to compare their general health status with that of 3 months earlier, i.e., with that at baseline examination, using the assessment categories "much worse," "slightly worse," "equal," "slightly better," and "much better."	The mean score difference between the "equal" group and the "slightly better" group =0.72 was the MCID for improvement
Angst, 2002[421] Method: Anchor Worst to best: 10 to 0 WOMAC:condition specific	2 concepts were used to measure changes in the patients' health status. The first was the 2 point measure in WOMAC scores resulting in effects defined by the difference of the score between the 3 month follow up and the baseline examination. The second was the patient's self-assessment (at the 3 month follow up) of the global change in health status between baseline and the 3 month follow up measured by the "transitional" scale.	Patients who had more than 0.29 increase (S.D.=3.11)in score (from baseline) perceived their condition as worse
Angst, 2002[421] Method: Anchor Worst to best: 10 to	2 concepts were used to measure changes in the patients' health status. The first was the 2 point measure in WOMAC scores resulting in effects	Patients who had more than 0.64 increase (SD=2.01) in score (from baseline) perceived

Appendix Table F54. Minimal clinically important differences in the Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
0 WOMAC:condition specific	defined by the difference of the score between the 3 month follow up and the baseline examination6. The second was the patient's self-assessment (at the 3 month follow up) of the global change in health status between baseline and the 3 month follow up measured by the "transitional" scale.	their condition as worse
Angst, 2002[421] Method: Anchor Worst to best: 10 to 0 WOMAC:condition specific	2 concepts were used to measure changes in the patients' health status. The first was the 2 point measure in WOMAC scores resulting in effects defined by the difference of the score between the 3 month follow up and the baseline examination6. The second was the patient's self-assessment (at the 3 month follow up) of the global change in health status between baseline and the 3 month follow up measured by the "transitional" scale.	Patients who had more than 0.80 decrease (S.D.=1.82) in score (from baseline) perceived their condition as improved
Angst, 2002[421] Method: Anchor Worst to best: 10 to 0 WOMAC:condition specific	2 concepts were used to measure changes in the patients' health status. The first was the 2 point measure in WOMAC scores resulting in effects defined by the difference of the score between the 3 month follow up and the baseline examination6. The second was the patient's self-assessment (at the 3 month follow up) of the global change in health status between baseline and the 3 month follow up measured by the "transitional" scale.	Patients who had more than 0.82 decrease (S.D.=1.71) in score (from baseline) perceived their condition as improved
Angst, 2002[421] Method: Anchor Worst to best: 10 to 0 WOMAC:condition specific	2 concepts were used to measure changes in the patients' health status. The first was the 2 point measure in WOMAC scores resulting in effects defined by the difference of the score between the 3 month follow up and the baseline examination6. The second was the patient's self-assessment (at the 3 month follow up) of the global change in health status between baseline and the 3 month follow up measured by the "transitional" scale.	Patients who had more than 0.83 decrease (S.D.=1.72) in score (from baseline) perceived their condition as improved
Angst, 2002[421] Method: Anchor Worst to best: 10 to 0 WOMAC:condition specific	2 concepts were used to measure changes in the patients' health status. The first was the 2 point measure in WOMAC scores resulting in effects defined by the difference of the score between the 3 month follow up and the baseline examination6. The second was the patient's self-assessment (at the 3 month follow up) of the global change in health status between baseline and the 3 month follow up measured by the "transitional" scale.	Patients who had more than 0.96 increase (S.D=1.98) in score (from baseline) perceived their condition as worse
Angst, 2002[421] Method: Anchor Worst to best: 10 to 0 WOMAC:condition specific	2 concepts were used to measure changes in the patients' health status. The first was the 2 point measure in WOMAC scores resulting in effects defined by the difference of the score between the 3 month follow up and the baseline examination6. The second was the patient's self-assessment (at the 3 month follow up) of the global change in health status between baseline and the 3 month follow up measured by the "transitional" scale.	Patients who had more than 1.01 decrease (S.D.=1.63) in score (from baseline) perceived their condition as improved

Appendix Table F54. Minimal clinically important differences in the Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
Angst, 2002[421] Method: Anchor Worst to best: 10 to 0 WOMAC:condition specific	2 concepts were used to measure changes in the patients' health status. The first was the 2 point measure in WOMAC scores resulting in effects defined by the difference of the score between the 3 month follow up and the baseline examination6. The second was the patient's self-assessment (at the 3 month follow up) of the global change in health status between baseline and the 3 month follow up measured by the "transitional" scale.	Patients who had more than 1.03 (S.D.=1.88) increase in score (from baseline) perceived their condition as worse
Angst, 2002[421] Method: Anchor Worst to best: 10 to 0 WOMAC:condition specific	2 concepts were used to measure changes in the patients' health status. The first was the 2 point measure in WOMAC scores resulting in effects defined by the difference of the score between the 3 month follow up and the baseline examination6. The second was the patient's self-assessment (at the 3 month follow up) of the global change in health status between baseline and the 3 month follow up measured by the "transitional" scale.	Patients who had more than 14% increase (SD=44%) in score (from baseline) perceived their condition as worse
Angst, 2002[421] Method: Anchor Worst to best: 10 to 0 WOMAC:condition specific	2 concepts were used to measure changes in the patients' health status. The first was the 2 point measure in WOMAC scores resulting in effects defined by the difference of the score between the 3 month follow up and the baseline examination6. The second was the patient's self-assessment (at the 3 month follow up) of the global change in health status between baseline and the 3 month follow up measured by the "transitional" scale.	Patients who had more than 17% decrease (S.D.=39%) in score (from baseline) perceived their condition as improved
Angst, 2002[421] Method: Anchor Worst to best: 10 to 0 WOMAC:condition specific	2 concepts were used to measure changes in the patients' health status. The first was the 2 point measure in WOMAC scores resulting in effects defined by the difference of the score between the 3 month follow up and the baseline examination6. The second was the patient's self-assessment (at the 3 month follow up) of the global change in health status between baseline and the 3 month follow up measured by the "transitional" scale.	Patients who had more than 18% decrease (S.D.=37%) in score (from baseline) perceived their condition as improved
Angst, 2002[421] Method: Anchor Worst to best: 10 to 0 WOMAC:condition specific	2 concepts were used to measure changes in the patients' health status. The first was the 2 point measure in WOMAC scores resulting in effects defined by the difference of the score between the 3 month follow up and the baseline examination6. The second was the patient's self-assessment (at the 3 month follow up) of the global change in health status between baseline and the 3 month follow up measured by the "transitional" scale.	Patients who had more than 18% decrease (S.D.=37%) in score (from baseline) perceived their condition as improved
Angst, 2002[421] Method: Anchor Worst to best: 10 to 0 WOMAC:condition specific	2 concepts were used to measure changes in the patients' health status. The first was the 2 point measure in WOMAC scores resulting in effects defined by the difference of the score between the 3 month follow up and the baseline examination6. The second was the patient's self-assessment (at the 3 month follow up) of the global change in health	Patients who had more than 21% increase (S.D.=43%) in score (from baseline) perceived their condition as worse

Appendix Table F54. Minimal clinically important differences in the Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
	status between baseline and the 3 month follow up measured by the "transitional" scale.	
Angst, 2002[421] Method: Anchor Worst to best: 10 to 0 WOMAC:condition specific	2 concepts were used to measure changes in the patients' health status. The first was the 2 point measure in WOMAC scores resulting in effects defined by the difference of the score between the 3 month follow up and the baseline examination6. The second was the patient's self-assessment (at the 3 month follow up) of the global change in health status between baseline and the 3 month follow up measured by the "transitional" scale.	Patients who had more than 22% (S.D.=41%) increase in score (from baseline) perceived their condition as worse
Angst, 2002[421] Method: Anchor Worst to best: 10 to 0 WOMAC:condition specific	2 concepts were used to measure changes in the patients' health status. The first was the 2 point measure in WOMAC scores resulting in effects defined by the difference of the score between the 3 month follow up and the baseline examination6. The second was the patient's self-assessment (at the 3 month follow up) of the global change in health status between baseline and the 3 month follow up measured by the "transitional" scale.	Patients who had more than 22% decrease (S.D.=35%) in score (from baseline) perceived their condition as improved
Angst, 2002[421] Method: Anchor Worst to best: 10 to 0 WOMAC:condition specific	2 concepts were used to measure changes in the patients' health status. The first was the 2 point measure in WOMAC scores resulting in effects defined by the difference of the score between the 3 month follow up and the baseline examination6. The second was the patient's self-assessment (at the 3 month follow up) of the global change in health status between baseline and the 3 month follow up measured by the "transitional" scale.	Patients who had more than 6%increase (S.D.=67%)in score (from baseline) perceived their condition as worse
Bellamy, 2002[422] Method: Anchor Worst to best: 96-0 WOMAC LK3.0 (telephonic assessment)	WOMAC LK3.0 (office assessment)	Equivalence was to be inferred if the 95% confidence limits for the differences between the office and telephone scores were within +-20% of the mean office scores. There was excellent agreement between the mean office and telephone scores, with mean differences for the WOMAC LK3.0 pain,stiffness, and function, and total scores of 0.09, 0.12, 0.78, and 0.98, respectively. These differences are also well within the protocol-defined equivalence criteria of +-1.7, +-0.9, +-6.4 and +-9.1, respectively, for pain, stiffness, physical function, and total WOMAC LK 3.0 scores, and represent differences from office scores of 0.9, 2.6, 2.4, and 2.2%, respectively.
Link, 2003[423] Method: Anchor	MRI	The grade IIa cartilage loss corresponded to median and IQR scores of 295 (180-430),

Appendix Table F54. Minimal clinically important differences in the Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
Worst to best: 300 to 0 WOMAC		193(73.8-227), and 863 (180-944) on the WOMAC pain, stiffness, and function scales, respectively.
Link, 2003[423] Method: Anchor Worst to best: 300 to 0 WOMAC	MRI	The grade IIb cartilage loss corresponded to median and IQR scores of 140 (90-190), 125(66-228.5), and 209 (81-287) on the WOMAC pain, stiffness, and function scales, respectively.
Link, 2003[423] Method: Anchor Worst to best: 300 to 0 WOMAC	MRI	The grade III cartilage loss corresponded to median and IQR scores of 111 (41-190), 50(30-200), and 206 (115-286) on the WOMAC pain, stiffness, and function scales, respectively.
Link, 2003[423] Method: Anchor Worst to best: 300 to 0 WOMAC	MRI	When patients had grade I cartilage abnormality corresponding median scores on WOMAC pain scale, stiffness, and function scale were: 23, 25 and 151, respectively.
Link, 2003[423] Method: Anchor Worst to best: 300 to 0 WOMAC	MRI	When patients had grade I cartilage abnormality corresponding median scores on WOMAC pain scale, stiffness, and function scale were: 23, 25 and 151, respectively.
Tubach, 2005[424] Method: Anchor Worst to best: 100-0 WOMAC: function scale	At the final visit, patients' opinions of their state was recorded by their answering ''Yes'' or ''No'' to ''Taking into account all the activities you have during your daily life, your level of pain, and also your functional impairment, do you consider that your current state is satisfactory?''. PASS was estimated by constructing a curve of cumulative percentages of patients as a function of the score of interest at the final visit among patients who considered their state satisfactory.	Patients with knee OA and in the intermediate tertile of score considered their state satisfactory if their function score was less than 33.0 mm on the WOMAC function scale
Tubach, 2005[424] Method: Anchor Worst to best: 100-0 WOMAC: function scale	At the final visit, patients' opinions of their state was recorded by their answering ''Yes'' or ''No'' to ''Taking into account all the activities you have during your daily life, your level of pain, and also your functional impairment, do you consider that your current state is satisfactory?''. PASS was estimated by constructing a curve of cumulative percentages of patients as a function of the score of interest at the final visit among patients who considered their state satisfactory.	Patients with knee OA and in the low tertile of score considered their state satisfactory if their function score was less than 20.4mm on the WOMAC function scale
Tubach, 2005[424] Method: Anchor Worst to best: 100-0 WOMAC: function scale	At the final visit, patients' opinions of their state was recorded by their answering ''Yes'' or ''No'' to ''Taking into account all the activities you have during your daily life, your level of pain, and also your functional impairment, do you consider that your current state is satisfactory?''. PASS was estimated by constructing a curve of cumulative percentages	Patients with knee OA considered their state satisfactory if their function score was less than 31.0 mm on the WOMAC function scale

Appendix Table F54. Minimal clinically important differences in the Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
	of patients as a function of the score of interest at the final visit among patients who considered their state satisfactory.	
Tubach, 2005[425] Method: Anchor Worst to best: 100-0 WOMAC: function scale	At the final visit, patients assessed their response to NSAID treatment on a five point Likert scale (none=no good at all, ineffective drug; poor=some effect but unsatisfactory; fair=reasonable effect but could be better; good=satisfactory effect with occasional episodes of pain or stiffness;excellent=ideal response, virtually pain free).The MCII was determined in patients whose assessment of response to treatment was measured on a five point Likert scale and who had completed the final visit. The MCII was estimated for both the absolute (final value-baseline value) and the relative ((final value-baseline value)/baseline value) changes in each patient reported outcome. It was estimated by constructing a curve of cumulative percentages of patients as a function of the change in score (for example, difference in pain score) among patients whose final evaluation of response to treatment was ‘‘good, satisfactory effect with occasional episodes of pain or stiffness’’.	Patients with knee OA and in the high tertile of the WOMAC function score considered themselves clinically improved if the decrease in function score exceeded 20.4 on the WOMAC function scale
Tubach, 2005[425] Method: v Worst to best: 100-0 WOMAC: function scale	At the final visit, patients assessed their response to NSAID treatment on a five point Likert scale (none=no good at all, ineffective drug; poor=some effect but unsatisfactory; fair=reasonable effect but could be better; good=satisfactory effect with occasional episodes of pain or stiffness;excellent=ideal response, virtually pain free).The MCII was determined in patients whose assessment of response to treatment was measured on a five point Likert scale and who had completed the final visit. The MCII was estimated for both the absolute (final value-baseline value) and the relative ((final value-baseline value)/baseline value) changes in each patient reported outcome. It was estimated by constructing a curve of cumulative percentages of patients as a function of the change in score (for example, difference in pain score) among patients whose final evaluation of response to treatment was ‘‘good, satisfactory effect with occasional episodes of pain or stiffness’’.	Patients with knee OA and in the intermediate tertile of the WOMAC function score considered themselves clinically improved if the decrease in function score exceeded 11.8 on the WOMAC function scale
Tubach, 2005[425] Method: Anchor Worst to best: 100-0 WOMAC: function scale	At the final visit, patients assessed their response to NSAID treatment on a five point Likert scale (none=no good at all, ineffective drug; poor=some effect but unsatisfactory; fair=reasonable effect but could be better; good=satisfactory effect with occasional episodes of pain or stiffness;excellent=ideal response, virtually pain free).The MCII was determined in patients whose assessment of response to treatment was measured on a five point Likert scale and who had completed the final visit. The MCII was estimated for both the absolute (final value-baseline value) and the relative ((final value-baseline value)/baseline value) changes in each patient reported outcome. It was estimated by	Patients with knee OA and in the low tertile of the WOMAC function score considered themselves clinically improved if the decrease in function score exceeded 5.3 on the WOMAC function scale

Appendix Table F54. Minimal clinically important differences in the Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
	constructing a curve of cumulative percentages of patients as a function of the change in score (for example, difference in pain score) among patients whose final evaluation of response to treatment was ‘‘good, satisfactory effect with occasional episodes of pain or stiffness’’.	
Tubach, 2005[425] Method: Anchor Worst to best: 100-0 WOMAC: function scale	At the final visit, patients assessed their response to NSAID treatment on a five point Likert scale (none=no good at all, ineffective drug; poor=some effect but unsatisfactory; fair=reasonable effect but could be better; good=satisfactory effect with occasional episodes of pain or stiffness;excellent=ideal response, virtually pain free).The MCII was determined in patients whose assessment of response to treatment was measured on a five point Likert scale and who had completed the final visit. The MCII was estimated for both the absolute (final value-baseline value) and the relative ((final value-baseline value)/baseline value) changes in each patient reported outcome. It was estimated by constructing a curve of cumulative percentages of patients as a function of the change in score (for example, difference in pain score) among patients whose final evaluation of response to treatment was ‘‘good, satisfactory effect with occasional episodes of pain or stiffness’’.	Patients with knee OA considered themselves clinically improved if the decrease in function score exceeded 9.1 on the WOMAC function scale
Tubach, 2005[426] Method: Anchor Worst to best: 100-0 WOMAC: function subscale	(1) “What is the level of pain above which you experience difficulties?” (This could be considered close to the external anchor for the PASS.) (2) “What is the level of pain above which you would consider taking a pain killer drug?” (This could be considered close to the external anchor for the LDAS.)	The minimal clinically important improvement in the high tertile of score is -20(absolute change)
Tubach, 2005[426] Method: Anchor Worst to best: 100-0 WOMAC: function subscale	(1) “What is the level of pain above which you experience difficulties?” (This could be considered close to the external anchor for the PASS.) (2) “What is the level of pain above which you would consider taking a pain killer drug?” (This could be considered close to the external anchor for the LDAS.)	The minimal clinically important improvement in the intermediate tertile of score is -12 (absolute change)
Tubach, 2005[426] Method: Anchor Worst to best: 100-0 WOMAC: function subscale	(1) “What is the level of pain above which you experience difficulties?” (This could be considered close to the external anchor for the PASS.) (2) “What is the level of pain above which you would consider taking a pain killer drug?” (This could be considered close to the external anchor for the LDAS.)	The minimal clinically important improvement in the low tertile of score is -5 (absolute change)
Weigl, 2006[427] Method: Anchor Worst to best: Varies WOMAC; Transition scale (that investigates the current state of health of the OA joint at the 6 months follow-up compared to its	The transition scale investigates the current state of health of the OA joint at the 6-month follow-up compared to its state 6 months earlier (at baseline examination).	Three different definitions of responder: 1) For the WOMAC global score, a percentage change (100*(change of score/baseline score)) greater or equal to 18% represents an MCID in improvement; 2) patients who reported a slightly or a much better health status on the transition scale were classified as responders;

Appendix Table F54. Minimal clinically important differences in the Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
state 6 months earlier(baseline examination)		3) responders had to show an MCID in improvement on the WOMAC global score and report a health improvement on the transition scale
Stratford, 2007[428] Method: Anchor Worst to best: 4-0 for each of the 5 items WOMAC LK 3.1	The five pain items of WOMAC that were analyzed were: (1) walking on flat ground; (2) going up or down stairs; (3) at night while in bed; (4) sitting or lying; and (5) standing upright.	90% of stable patients will display random fluctuations equal to or less than 3.94 when assessed on multiple occasions
Tanner, 2007[348] Method: Anchor Worst to best: 100 to 0 WOMAC	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or international elite level."	23/24 (96%) of the WOMAC questions had a mean importance ranking of at least 3 (score on a Likert scale of 0 to 5, with 0 being not experienced and 5 being experienced and very important)
Tanner, 2007[348] Method: Anchor Worst to best: 100 to 0 WOMAC	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or international elite level."	7 questions had a top-20 FIP scores (FIP=frequency*mean importance; the greater the FIP, the more important a symptom or disability is to patients. A high FIP indicates that a symptom or disability is both frequently experienced and most important to patients)
Tanner, 2007[348] Method: Anchor Worst to best: 100 to 0 WOMAC	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or international elite level."	At least 51% of the patients with mild to moderate OA endorsed 23/24 (96%) of the WOMAC questions

Appendix Table F54. Minimal clinically important differences in the Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
Tanner, 2007[348] Method: Anchor Worst to best: 100 to 0 WOMAC	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or international elite level."	Only 2/24 questions had a mean importance ranking of 1 or less
Bieleman, 2009[366] Method: Anchor Worst to best: 68-0 WOMAC (Dutch versions)function scale	Functional Capacity Evaluation (FCE)	The cut-off point for the WOMAC scale the cut-off point was >=21 where subjects had work limitations that corresponded to the physical work limitations on the FCE scale
White, 2010[429] Method: Anchor Worst to best: WOMAC: physical function	The definitions of MCII were that they were anchored to patient-based indicators of improvement and defined meaningful improvement relative to baseline WOMAC physical function scores. The definitions of MCII 26% and MCII Tertile were estimated in a group of people with knee pain reporting a "good, satisfactory effect with occasional episodes of pain or stiffness" following a 4-week course of nonsteroidal antiinflammatory drug (NSAID). The MCII 17% definition was from a group of people with knee OA who underwent 3 to 4 weeks of inpatient rehabilitation.	3 definitions of MCII (Minimally Clinically Important Improvement) for WOMAC physical function: MCII 26% and MCII 17% defines meaningful improvement as a 26% and 17% decrease in WOMAC physical function (final value minus baseline value/baseline value), respectively, with a minimum absolute decrease of 2 out of 68. MCII Tertile defines meaningful improvement as absolute values (final value minus baseline value) dependent on baseline WOMAC physical function scores. Those with a decrease of 3.6, 8.0, and 13.9 out of 68 were considered to reach meaningful improvement within low, medium, and high baseline tertile categories, respectively.
Escobar, 2007[430] Method: Anchor Worst to best: 100 to 0 WOMAC: pain subscale	Patients had to answer a question about improvement in their knee at 6 months and 2 years after intervention. The possible responses were " a great deal better", " somewhat better", "equal", " somewhat worse", and " a great deal worse".	At 6 months: Mean change in WOMAC pain score of 37.58(19.71) was equivalent to patient reporting " A great deal better".
Escobar, 2007[430] Method: Anchor Worst to best: 100 to 0 WOMAC: function subscale	Patients had to answer a question about improvement in their knee at 6 months and 2 years after intervention. The possible responses were " a great deal better", " somewhat better", "equal", " somewhat worse", and " a great deal worse".	At 6 months: Mean change in WOMAC function score of 34.58 (19.33) was equivalent to patient reporting " A great deal better".
Escobar, 2007[430] Method: Anchor Worst to best: 100 to 0	Patients had to answer a question about improvement in their knee at 6 months and 2 years after intervention. The possible responses were " a great deal better", " somewhat better", "equal", " somewhat worse", and "	At 6 months: Mean change in WOMAC stiffness score of 34.74(28.38) was equivalent to patient reporting " A great deal better".

Appendix Table F54. Minimal clinically important differences in the Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
WOMAC: stiffness subscale	a great deal worse”.	
Escobar, 2007[430] Method: Anchor Worst to best: 100 to 0 WOMAC: pain subscale	Patients had to answer a question about improvement in their knee at 6 months and 2 years after intervention. The possible responses were “ a great deal better”, “ somewhat better”, “equal”, “ somewhat worse”, and “ a great deal worse”.	At 6 months: Mean change in WOMAC pain score of 33.87(18.13) was equivalent to patient reporting "somewhat better". This was considered the MCID (minimal clinically important difference.
Escobar, 2007[430] Method: Anchor Worst to best: 100 to 0 WOMAC: function subscale	Patients had to answer a question about improvement in their knee at 6 months and 2 years after intervention. The possible responses were “ a great deal better”, “ somewhat better”, “equal”, “ somewhat worse”, and “ a great deal worse”.	At 6 months: Mean change in WOMAC function score of 19.01(17.48) was equivalent to patient reporting "somewhat better". This was considered the MCID (minimal clinically important difference.
Escobar, 2007[430] Method: Anchor Worst to best: 100 to 0 WOMAC: stiffness subscale	Patients had to answer a question about improvement in their knee at 6 months and 2 years after intervention. The possible responses were “ a great deal better”, “ somewhat better”, “equal”, “ somewhat worse”, and “ a great deal worse”.	At 6 months: Mean change in WOMAC stiffness score of 14.53(26.50) was equivalent to patient reporting "somewhat better". This was considered the MCID (minimal clinically important difference.
Escobar, 2007[430] Method: Anchor Worst to best: 100 to 0 WOMAC: pain subscale	Patients had to answer a question about improvement in their knee at 6 months and 2 years after intervention. The possible responses were “ a great deal better”, “ somewhat better”, “equal”, “ somewhat worse”, and “ a great deal worse”.	At 6 months: Mean change in WOMAC pain score of 12.10(19.01) was equivalent to patient reporting " equal".
Escobar, 2007[430] Method: Anchor Worst to best: 100 to 0 WOMAC: function subscale	All patients had to answer a question about improvement in their knee at 6 months and 2 years after the intervention. The possible responses were "a great deal better", "somewhat better", "equal", "somewhat worse", and "a great deal worse".	At 6 months: Mean change in WOMAC function score of 9.46(16.36) was equivalent to patient reporting " equal".
Escobar, 2007[430] Method: Anchor Worst to best: 100 to 0 WOMAC: stiffness subscale	All patients had to answer a question about improvement in their knee at 6 months and 2 years after the intervention. The possible responses were "a great deal better", "somewhat better", "equal", "somewhat worse", and "a great deal worse".	At 6 months: Mean change in WOMAC stiffness score of 7.42(25.77) was equivalent to patient reporting " equal".
Escobar, 2007[430] Method: Anchor Worst to best: 100 to 0 WOMAC: pain subscale	All patients had to answer a question about improvement in their knee at 6 months and 2 years after the intervention. The possible responses were "a great deal better", "somewhat better", "equal", "somewhat worse", and "a great deal worse".	At 6 months: Mean change in WOMAC pain score of 7.71(22.07) was equivalent to patient reporting " worse"
Escobar, 2007[430] Method: Anchor Worst to best: 100 to 0 WOMAC: function subscale	All patients had to answer a question about improvement in their knee at 6 months and 2 years after the intervention. The possible responses were "a great deal better", "somewhat better", "equal", "somewhat worse", and "a great deal worse".	At 6 months: Mean change in WOMAC function score of 0.27(23.38) was equivalent to patient reporting " worse"
Escobar, 2007[430] Method: Anchor Worst to best: 100 to 0 WOMAC: stiffness subscale	All patients had to answer a question about improvement in their knee at 6 months and 2 years after the intervention. The possible responses were "a great deal better", "somewhat better", "equal", "somewhat worse", and "a great deal worse".	At 6 months: Mean change in WOMAC stiffness score of -3.29(32.50) was equivalent to patient reporting " worse"

Appendix Table F54. Minimal clinically important differences in the Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
Escobar, 2007[430] Method: Anchor Worst to best: 100 to 0 WOMAC: pain subscale	All patients had to answer a question about improvement in their knee at 6 months and 2 years after the intervention. The possible responses were "a great deal better", "somewhat better", "equal", "somewhat worse", and "a great deal worse".	At 6 months: The MDC (minimal detectable change) for the WOMAC pain subscale that expresses the minimal magnitude of change in scores above or below which the observed changes is likely to be real at 95% level of confidence and not just measurement error is 22.39.
Escobar, 2007[430] Method: Anchor Worst to best: 100 to 0 WOMAC: function subscale	All patients had to answer a question about improvement in their knee at 6 months and 2 years after the intervention. The possible responses were "a great deal better", "somewhat better", "equal", "somewhat worse", and "a great deal worse".	At 6 months: The MDC (minimal detectable change) for the WOMAC function subscale that expresses the minimal magnitude of change in scores above or below which the observed changes is likely to be real at 95% level of confidence and not just measurement error is 13.11.
Escobar, 2007[430] Method: Anchor Worst to best: 100 to 0 WOMAC: stiffness subscale	All patients had to answer a question about improvement in their knee at 6 months and 2 years after the intervention. The possible responses were "a great deal better", "somewhat better", "equal", "somewhat worse", and "a great deal worse".	At 6 months: The MDC (minimal detectable change) for the WOMAC stiffness subscale that expresses the minimal magnitude of change in scores above or below which the observed changes is likely to be real at 95% level of confidence and not just measurement error is 29.12.
Quintana, 2006[338] Method: Anchor Worst to best: 100 to 0 WOMAC: pain subscale	Six months after the intervention, patients were sent another letter with the questionnaires and additional questions on the clinical aspects of their disease and satisfaction with the intervention. The satisfaction question was dichotomized as being satisfied or not. At this time, patients answered a transitional question about their joint improvement after the intervention. The possible responses included "a great deal better," "somewhat better," "equal," "somewhat worse," or "a great deal worse."	The MDC (minimal detectable change) for pain subscale of WOMAC was at 22.85.
Quintana, 2006[338] Method: Anchor Worst to best: 100 to 0 WOMAC: functional limitation subscale	Six months after the intervention, patients were sent another letter with the questionnaires and additional questions on the clinical aspects of their disease and satisfaction with the intervention. The satisfaction question was dichotomized as being satisfied or not. At this time, patients answered a transitional question about their joint improvement after the intervention. The possible responses included "a great deal better," "somewhat better," "equal," "somewhat worse," or "a great deal worse."	The MDC (minimal detectable change) for functional limitation subscale of WOMAC was at 12.72.
Quintana, 2006[338] Method: Anchor Worst to best: 100 to 0 WOMAC: stiffness subscale	Six months after the intervention, patients were sent another letter with the questionnaires and additional questions on the clinical aspects of their disease and satisfaction with the intervention. The satisfaction question was dichotomized as being satisfied or not. At this time,	The MDC (minimal detectable change) for stiffness subscale of WOMAC was at 29.14.

Appendix Table F54. Minimal clinically important differences in the Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
	patients answered a transitional question about their joint improvement after the intervention. The possible responses included "a great deal better," "somewhat better," "equal," "somewhat worse," or "a great deal worse."	
Quintana, 2006[338] Method: Anchor Worst to best: 100 to 0 WOMAC: pain subscale	Six months after the intervention, patients were sent another letter with the questionnaires and additional questions on the clinical aspects of their disease and satisfaction with the intervention. The satisfaction question was dichotomized as being satisfied or not. At this time, patients answered a transitional question about their joint improvement after the intervention. The possible responses included "a great deal better," "somewhat better," "equal," "somewhat worse," or "a great deal worse."	The MCID (minimal clinically importance) for pain subscale of WOMAC was at 22.60.
Quintana, 2006[338] Method: Anchor Worst to best: 100 to 0 WOMAC: functional limitation subscale	Six months after the intervention, patients were sent another letter with the questionnaires and additional questions on the clinical aspects of their disease and satisfaction with the intervention. The satisfaction question was dichotomized as being satisfied or not. At this time, patients answered a transitional question about their joint improvement after the intervention. The possible responses included "a great deal better," "somewhat better," "equal," "somewhat worse," or "a great deal worse."	The MCID (minimal clinically importance) for functional limitation subscale of WOMAC was at 17.67.
Quintana, 2006[338] Method: Anchor Worst to best: 100 to 0 WOMAC: stiffness subscale	Six months after the intervention, patients were sent another letter with the questionnaires and additional questions on the clinical aspects of their disease and satisfaction with the intervention. The satisfaction question was dichotomized as being satisfied or not. At this time, patients answered a transitional question about their joint improvement after the intervention. The possible responses included "a great deal better," "somewhat better," "equal," "somewhat worse," or "a great deal worse."	The MCID (minimal clinically importance) for stiffness subscale of WOMAC was at 12.94.
Ornetti, 2011[406] Method: PASS Worst to best: 100 to 0 WOMAC: function subscale	All patients had to assess their current global state (global PASS) by answering 'Yes' or 'No' in answer to the question 'Taking into account all the activities you have during your daily life, your level of pain, and also your functional impairment, do you consider that your current state is satisfactory?'.	Patients considered their global state as satisfactory if the WOMAC function was <28.06 (95% CI: 25.74 to 30.38.Global PASS is defined as the value of measurement beyond which patients consider their global state as satisfactory).
Ornetti, 2011[406] Method: PASS Worst to best: 100 to 0 WOMAC: function subscale	PASS for functional state :The PASS of each function scale was defined as the 75th centile of the absolute score among patients who considered their final state as satisfactory	Patients considered their functional state as satisfactory if the WOMAC function was <28.40 (95% CI: 26.03 to 30.78). Function PASS is defined as the value of measurement beyond which patients consider their functional state as satisfactory.

Appendix Table F54. Minimal clinically important differences in the Western Ontario McMaster Universities Osteoarthritis Index (continued)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
Ornetti, 2011[406] Method: MCII Worst to best: 100 to 0 WOMAC: function subscale	All patients had to assess their degree of improvement of global state (global MCII), on a three-point Likert scale (worsened function, no change, improved function). Among patients who improved, the degree of improvement was scored on a four-point Likert scale (poor, fair, good, excellent)	Patients considered their global state as improved for a change of WOMAC function scale >-17.13 (95% CI: -20.07 to -14.19).Global MCII is defined as the smallest change in global state that signifies an important improvement in a patient's symptoms.
Ornetti, 2011[406] Method: MCII Worst to best: 100 to 0 WOMAC: function subscale	MCII for functional state: The MCII of each function scale was defined as the 75th centile of the absolute change in score among patients whose final evaluation of response to NSAID was improved (improvement good or excellent).	Patients considered their functional state as improved for a change of WOMAC function scale >-17.02 (95% CI: -20.15 to -13.90). Functional MCII is defined as the smallest change in functional state that signifies an important improvement in a patient's symptoms.

Appendix Table F55. Minimal clinically important differences in the Visual Analogue Scale (anchor method)

Author, year Test Worst to best Condition	Reference	Definition of minimally clinically important differences
Tubach, 2005[424] Test: Visual Analogue Scale Worst to best: 100-0 Disease status	At the final visit, patients' opinions of their state was recorded by their answering ''Yes'' or ''No'' to ''Taking into account all the activities you have during your daily life, your level of pain, and also your functional impairment, do you consider that your current state is satisfactory?''. PASS (Patient Acceptable Symptom State) was estimated by constructing a curve of cumulative percentages of patients as a function of the score of interest at the final visit among patients who considered their state satisfactory.	Patients with knee OA and in the high tertile of score considered their state satisfactory if the patient global assessment score was less than 34.4 mm on the 0-100mm VAS scale.
Tubach, 2005[425] Test: Visual Analogue Scale Worst to best: 100-0 Disease status	At the final visit, patients assessed their response to NSAID treatment on a five point Likert scale (none=no good at all, ineffective drug; poor=some effect but unsatisfactory; fair=reasonable effect but could be better; good=satisfactory effect with occasional episodes of pain or stiffness; excellent=ideal response, virtually pain free).The MCII was determined in patients whose assessment of response to treatment was measured on a five point Likert scale and who had completed the final visit. The MCII was estimated for both the absolute (final value-baseline value) and the relative ((final value-baseline value)/baseline value) changes in each patient reported outcome. It was estimated by constructing a curve of cumulative percentages of patients as a function of the change in score (for example, difference in pain score) among patients whose final evaluation of response to treatment was ''good, satisfactory effect with occasional episodes of pain or stiffness''.	Patients with knee OA and in the high tertile of the VAS score considered themselves clinically improved if the decrease in disease activity (improvement in global assessment) exceeded 43.2mm on the 0-100mm VAS scale.
Tubach, 2005[424] Test: Visual Analogue Scale Worst to best: 100-0 Disease status	At the final visit, patients' opinions of their state was recorded by their answering ''Yes'' or ''No'' to ''Taking into account all the activities you have during your daily life, your level of pain, and also your functional impairment, do you consider that your current state is satisfactory?''. PASS was estimated by constructing a curve of cumulative percentages of patients as a function of the score of interest at the final visit among patients who considered their state satisfactory.	Patients with knee OA and in the intermediate tertile of score considered their state satisfactory if the patient global assessment score was less than 34.3 mm on the 0-100mm VAS scale.
Tubach, 2005[425] Test: Visual Analogue Scale Worst to best: 100-0 Disease status	At the final visit, patients assessed their response to NSAID treatment on a five point Likert scale (none=no good at all, ineffective drug; poor=some effect but unsatisfactory; fair=reasonable effect but could be better; good=satisfactory effect with occasional episodes of pain or stiffness; excellent=ideal response, virtually pain free).The MCII was determined in patients whose assessment of response to treatment was measured on a five point Likert scale and who had completed the final visit. The MCII was estimated for both the absolute (final value-baseline value) and the relative ((final value-baseline value)/baseline value)	Patients with knee OA and in the intermediate tertile of the VAS score considered themselves clinically improved if the decrease in disease activity (improvement in global assessment) exceeded 24.6mm on the 0-100mm VAS scale.

Appendix Table F55. Minimal clinically important differences in the Visual Analogue Scale (anchor method) (continued)

Author, year Test Worst to best Condition	Reference	Definition of minimally clinically important differences
	changes in each patient reported outcome. It was Estimated by constructing a curve of cumulative percentages of patients as a function of the change in score (for example, difference in pain score) among patients whose final evaluation of response to treatment was ‘‘good, satisfactory effect with occasional episodes of pain or stiffness’’.	
Tubach, 2005[424] Test: Visual Analogue Scale Worst to best: 100-0 Disease status	At the final visit, patients’ opinions of their state was recorded by their answering ‘‘Yes’’ or ‘‘No’’ to ‘‘Taking into account all the activities you have during your daily life, your level of pain, and also your functional impairment, do you consider that your current state is satisfactory?’’. PASS was estimated by constructing a curve of cumulative percentages of patients as a function of the score of interest at the final visit among patients who considered their state satisfactory.	Patients with knee OA and in the low tertile of score considered their state satisfactory if the patient global assessment score was less than 28.3mm on the 0-100mm VAS scale.
Tubach, 2005[425] Test: Visual Analogue Scale Worst to best: 100-0 Disease status	At the final visit, patients assessed their response to NSAID treatment on a five point Likert scale (none=no good at all, ineffective drug; poor=some effect but unsatisfactory; fair=reasonable effect but could be better; good=satisfactory effect with occasional episodes of pain or stiffness; excellent=ideal response, virtually pain free).The MCII was determined in patients whose assessment of response to treatment was measured on a five point Likert scale and who had completed the final visit. The MCII was estimated for both the absolute (final value-baseline value) and the relative ((final value-baseline value)/baseline value) changes in each patient reported outcome. It was estimated by constructing a curve of cumulative percentages of patients as a function of the change in score (for example, difference in pain score) among patients whose final evaluation of response to treatment was ‘‘good, satisfactory effect with occasional episodes of pain or stiffness’’.	Patients with knee OA and in the low tertile of the VAS score considered themselves clinically improved if the decrease in disease activity (improvement in global assessment) exceeded 6.4 mm on the 0-100mm VAS scale.
Tubach, 2005[424] Test: Visual Analogue Scale Worst to best: 100-0 Disease status	At the final visit, patients’ opinions of their state was recorded by their answering ‘‘Yes’’ or ‘‘No’’ to ‘‘Taking into account all the activities you have during your daily life, your level of pain, and also your functional impairment, do you consider that your current state is satisfactory?’’. PASS was estimated by constructing a curve of cumulative percentages of patients as a function of the score of interest at the final visit among patients who considered their state satisfactory.	Patients with knee OA considered their state satisfactory if the patient assessment score was less than 32.0 mm on the 0-100mm VAS scale.
Tubach, 2005[425] Test: Visual Analogue Scale Worst to best: 100-0 Disease status	At the final visit, patients assessed their response to NSAID treatment on a five point Likert scale (none=no good at all, ineffective drug; poor=some effect but unsatisfactory; fair=reasonable effect but could be better; good=satisfactory effect with occasional episodes of pain or stiffness; excellent=ideal response, virtually pain free).The MCII was determined in patients whose assessment of response to treatment was measured on a five point Likert scale and who had completed the	Patients with knee OA considered themselves clinically improved if the decrease in disease activity (improvement in global assessment) exceeded 18.3 mm on the 0-100mm VAS scale.

Appendix Table F55. Minimal clinically important differences in the Visual Analogue Scale (anchor method) (continued)

Author, year Test Worst to best Condition	Reference	Definition of minimally clinically important differences
	final visit. The MCII was Estimated for both the absolute (final value-baseline value) and the relative ((final value-baseline value)/baseline value) changes in each patient reported outcome. It was Estimated by constructing a curve of cumulative percentages of patients as a function of the change in score (for example, difference in pain score) among patients whose final evaluation of response to treatment was ‘‘good, satisfactory effect with occasional episodes of pain or stiffness’’.	
Tanner, 2007[348] Test: Knee Disorders Subjective Form of Visual Analogue Scale Worst to best: Mild to moderate OA	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient’s activity score from 0 to 10 was assigned, with corresponding definitions ranging from “on sick leave/disability” to “participation in competitive sports such as soccer at a national or international elite level.”	10 of the VAS questions had a mean importance ranking of at least 3 (score on a Likert scale of 0 to 5, with 0 being not experienced and 5 being experienced and very important)
Tanner, 2007[348] Test: Knee Disorders Subjective Form of Visual Analogue Scale Worst to best: Mild to moderate OA	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient’s activity score from 0 to 10 was assigned, with corresponding definitions ranging from “on sick leave/disability” to “participation in competitive sports such as soccer at a national or international elite level.”	4 questions had a top-20 FIP scores (FIP=frequency*mean importance; the greater the FIP, the more important a symptom or disability is to patients. A high FIP indicates that a symptom or disability is both frequently experienced and most important to patients)
Tanner, 2007[348] Test: Knee Disorders Subjective Form of Visual Analogue Scale Worst to best: Mild to moderate OA	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient’s activity score from 0 to 10 was assigned, with corresponding definitions ranging from “on sick leave/disability” to “participation in competitive sports such as soccer at a national or international elite level.”	At least 51% of the patients with mild to moderate OA endorsed 25 (89%) of the VAS questions.
Tanner, 2007[348] Test: Knee Disorders Subjective	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life	Five questions had a mean importance ranking of 1 or less

Appendix Table F55. Minimal clinically important differences in the Visual Analogue Scale (anchor method) (continued)

Author, year Test Worst to best Condition	Reference	Definition of minimally clinically important differences
Form of Visual Analogue Scale Worst to best: Mild to moderate OA	instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or international elite level."	
Tubach, 2005[424] Test: Visual Analogue Scale Worst to best: 100-0 Pain	At the final visit, patients' opinions of their state was recorded by their answering ''Yes'' or ''No'' to ''Taking into account all the activities you have during your daily life, your level of pain, and also your functional impairment, do you consider that your current state is satisfactory?''. PASS was estimated by constructing a curve of cumulative percentages of patients as a function of the score of interest at the final visit among patients who considered their state satisfactory.	Patients with knee OA and in the high tertile of score considered their state satisfactory if their pain score was less than 36.4 mm on the 0-100mm VAS scale.
Tubach, 2005[425] Test: Visual Analogue Scale Worst to best: 100-0 Pain	At the final visit, patients assessed their response to NSAID treatment on a five point Likert scale (none=no good at all, ineffective drug; poor=some effect but unsatisfactory; fair=reasonable effect but could be better; good=satisfactory effect with occasional episodes of pain or stiffness; excellent=ideal response, virtually pain free).The MCII was determined in patients whose assessment of response to treatment was measured on a five point Likert scale and who had completed the final visit. The MCII was estimated for both the absolute (final value-baseline value) and the relative ((final value-baseline value)/baseline value) changes in each patient reported outcome. It was estimated by constructing a curve of cumulative percentages of patients as a function of the change in score (for example, difference in pain score) among patients whose final evaluation of response to treatment was ''good, satisfactory effect with occasional episodes of pain or stiffness''.	Patients with knee OA and in the high tertile of the VAS score considered themselves clinically improved if the decrease in pain exceeded 36.6 mm on the 0-100mm VAS scale.
Tubach, 2005[424] Test: Visual Analogue Scale Worst to best: 100-0 Pain	At the final visit, patients' opinions of their state was recorded by their answering ''Yes'' or ''No'' to ''Taking into account all the activities you have during your daily life, your level of pain, and also your functional impairment, do you consider that your current state is satisfactory?''. PASS was estimated by constructing a curve of cumulative percentages of patients as a function of the score of interest at the final visit among patients who considered their state satisfactory.	Patients with knee OA and in the intermediate tertile of score considered their state satisfactory if their pain score was less than 34.5mm on the 0-100mm VAS scale
Tubach, 2005[425] Test: Visual Analogue Scale Worst to best: 100-0	At the final visit, patients assessed their response to NSAID treatment on a five point Likert scale (none=no good at all, ineffective drug; poor=some effect but unsatisfactory; fair=reasonable effect but could	Patients with knee OA and in the intermediate tertile of the VAS score considered themselves clinically improved if the decrease in pain exceeded 27.4 mm

Appendix Table F55. Minimal clinically important differences in the Visual Analogue Scale (anchor method) (continued)

Author, year Test Worst to best Condition	Reference	Definition of minimally clinically important differences
Pain	be better; good=satisfactory effect with occasional episodes of pain or stiffness; excellent=ideal response, virtually pain free).The MCII was determined in patients whose assessment of response to treatment was measured on a five point Likert scale and who had completed the final visit. The MCII was estimated for both the absolute (final value-baseline value) and the relative ((final value-baseline value)/baseline value) changes in each patient reported outcome. It was estimated by constructing a curve of cumulative percentages of patients as a function of the change in score (for example, difference in pain score) among patients whose final evaluation of response to treatment was ‘‘good, satisfactory effect with occasional episodes of pain or stiffness’’.	on the 0-100mm VAS scale
Tubach, 2005[424] Test: Visual Analogue Scale Worst to best: 100-0 Pain	At the final visit, patients’ opinions of their state was recorded by their answering ‘‘Yes’’ or ‘‘No’’ to ‘‘Taking into account all the activities you have during your daily life, your level of pain, and also your functional impairment, do you consider that your current state is satisfactory?’’. PASS was estimated by constructing a curve of cumulative percentages of patients as a function of the score of interest at the final visit among patients who considered their state satisfactory.	Patients with knee OA and in the low tertile of score considered their state satisfactory if their pain score was less than 27.0 mm on the 0-100mm VAS scale
Tubach, 2005[425] Test: Visual Analogue Scale Worst to best: 100-0 Pain	At the final visit, patients assessed their response to NSAID treatment on a five point Likert scale (none=no good at all, ineffective drug; poor=some effect but unsatisfactory; fair=reasonable effect but could be better; good=satisfactory effect with occasional episodes of pain or stiffness;excellent=ideal response, virtually pain free).The MCII was determined in patients whose assessment of response to treatment was measured on a five point Likert scale and who had completed the final visit. The MCII was estimated for both the absolute (final value-baseline value) and the relative ((final value-baseline value)/baseline value) changes in each patient reported outcome. It was estimated by constructing a curve of cumulative percentages of patients as a function of the change in score (for example, difference in pain score) among patients whose final evaluation of response to treatment was ‘‘good, satisfactory effect with occasional episodes of pain or stiffness’’.	Patients with knee OA and in the low tertile of the VAS score considered themselves clinically improved if the decrease in pain exceeded 10.8 mm on the 0-100mm VAS scale
Tubach, 2005[424] Test: Visual Analogue Scale Worst to best: 100-0 Pain	At the final visit, patients’ opinions of their state was recorded by their answering ‘‘Yes’’ or ‘‘No’’ to ‘‘Taking into account all the activities you have during your daily life, your level of pain, and also your functional impairment, do you consider that your current state is satisfactory?’’. PASS was estimated by constructing a curve of cumulative percentages of patients as a function of the score of interest at the	Patients with knee OA considered their state satisfactory if their pain score was less than 32.3 mm on the 0-100mm VAS scale

Appendix Table F55. Minimal clinically important differences in the Visual Analogue Scale (anchor method) (continued)

Author, year Test Worst to best Condition	Reference	Definition of minimally clinically important differences
	final visit among patients who considered their state satisfactory.	
Tubach, 2005[425] Test: Visual Analogue Scale Worst to best: 100-0 Pain	At the final visit, patients assessed their response to NSAID treatment on a five point Likert scale (none=no good at all, ineffective drug; poor=some effect but unsatisfactory; fair=reasonable effect but could be better; good=satisfactory effect with occasional episodes of pain or stiffness; excellent=ideal response, virtually pain free).The MCII was determined in patients whose assessment of response to treatment was measured on a five point Likert scale and who had completed the final visit. The MCII was estimated for both the absolute (final value-baseline value) and the relative ((final value-baseline value)/baseline value) changes in each patient reported outcome. It was estimated by constructing a curve of cumulative percentages of patients as a function of the change in score (for example, difference in pain score) among patients whose final evaluation of response to treatment was ‘‘good, satisfactory effect with occasional episodes of pain or stiffness’’.	Patients with knee OA considered themselves clinically improved if the decrease in pain exceeded 19.9 mm on the 0-100mm VAS scale.
Tubach, 2005[426] Test: Visual Analogue Scale Worst to best: 100-0 Pain	(1) “What is the level of pain above which you experience difficulties?” (This could be considered close to the external anchor for the PASS.) (2) “What is the level of pain above which you would consider taking a pain killer drug?” (This could be considered close to the external anchor for the LDAS (low disease activity state).)	The minimal clinically important improvement in the high tertile of score is -37 (absolute change).
Tubach, 2005[426] Test: Visual Analogue Scale Worst to best: 100-0 Pain	(1) “What is the level of pain above which you experience difficulties?” (This could be considered close to the external anchor for the PASS.) (2) “What is the level of pain above which you would consider taking a pain killer drug?” (This could be considered close to the external anchor for the LDAS.)	The minimal clinically important improvement in the intermediate tertile of score is -27 (absolute change).
Tubach, 2005[426] Test: Visual Analogue Scale Worst to best: 100-0 Pain	(1) “What is the level of pain above which you experience difficulties?” (This could be considered close to the external anchor for the PASS.) (2) “What is the level of pain above which you would consider taking a pain killer drug?” (This could be considered close to the external anchor for the LDAS.)	The minimal clinically important improvement in the low tertile of score is -11 (absolute change).
Tubach, 2005[426] Test: Visual Analogue Scale Worst to best: 100-0 Patient's global assessment	(1) “What is the level of pain above which you experience difficulties?” (This could be considered close to the external anchor for the PASS.) (2) “What is the level of pain above which you would consider taking a pain killer drug?” (This could be considered close to the external anchor for the LDAS.)	The minimal clinically important improvement in the high tertile of score is -43(absolute change).
Tubach, 2005[426] Test: Visual Analogue Scale Worst to best: 100-0 Patient's global assessment	(1) “What is the level of pain above which you experience difficulties?” (This could be considered close to the external anchor for the PASS.) (2) “What is the level of pain above which you would consider taking a pain killer drug?” (This could be considered close to the external anchor for the LDAS.)	The minimal clinically important improvement in the intermediate tertile of score is -25 (absolute change)

Appendix Table F55. Minimal clinically important differences in the Visual Analogue Scale (anchor method) (continued)

Author, year Test Worst to best Condition	Reference	Definition of minimally clinically important differences
Tubach, 2005[426] Test: Visual Analogue Scale Worst to best: 100-0 Patient's global assessment	(1) "What is the level of pain above which you experience difficulties?" (This could be considered close to the external anchor for the PASS.) (2) "What is the level of pain above which you would consider taking a pain killer drug?" (This could be considered close to the external anchor for the LDAS.)	The minimal clinically important improvement in the low tertile of score is -6 (absolute change)
Bellamy, 2001[431] Test: Visual Analogue Scale Worst to best: 100-0 Pain	Delphi exercise to define minimum clinically important differences	The MCID for physicians overall assessment of pain =15 on the VAS scale
Bellamy, 2001[431] Test: Visual Analogue Scale Worst to best: 100-0 Stiffness	Delphi exercise to define minimum clinically important differences	The MCID for physicians overall assessment of stiffness =15 on the VAS scale
Bellamy, 2001[431] Test: Visual Analogue Scale Worst to best: 100-0 Disability	Delphi exercise to define minimum clinically important differences	The MCID for physicians overall assessment of physical disability on the VAS scale =15
Bellamy, 2001[431] Test: Visual Analogue Scale Worst to best: 100-0 Disease activity	Delphi exercise to define minimum clinically important differences	The MCID for physician's global assessment of disease activity on the VAS scale =15
Bellamy, 2001[431] Test: Visual Analogue Scale Worst to best: 100-0 Pain	Delphi exercise to define minimum clinically important differences	The MCID for patient pain at rest on the VAS scale =10.5
Bellamy, 2001[431] Test: Visual Analogue Scale Worst to best: 100-0 Pain	Delphi exercise to define minimum clinically important differences	The MCID for patient pain on movement on the VAS scale =17.5
Bellamy, 2001[431] Test: Visual Analogue Scale Worst to best: 100-0 Pain	Delphi exercise to define minimum clinically important differences	The MCID for patient overall assessment of pain on the VAS scale =15
Bellamy, 2001[431] Test: Visual Analogue Scale Worst to best: 100-0 Stiffness	Delphi exercise to define minimum clinically important differences	The MCID for patient overall assessment of morning stiffness on the VAS scale =17.5

Appendix Table F55. Minimal clinically important differences in the Visual Analogue Scale (anchor method) (continued)

Author, year Test Worst to best Condition	Reference	Definition of minimally clinically important differences
Bellamy, 2001[431] Test: Visual Analogue Scale Worst to best: 100-0 Physical disability	Delphi exercise to define minimum clinically important differences	The MCID for patients overall assessment of physical disability on the VAS scale =15
Bellamy, 2001[431] Test: Visual Analogue Scale Worst to best: 100-0 Disease activity	Delphi exercise to define minimum clinically important differences	The MCID for patient's global assessment of disease activity on the VAS scale =20

Appendix Table F56. Minimal clinically important differences in the Short-Form Questionnaire-36 (SF-36)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
Quintana, 2006[338] Method: Anchor Worst to best: 0-100 SF-36: bodily pain	Six months after the intervention, patients were sent a letter with the questionnaires and additional questions on the clinical aspects of their disease and satisfaction with the intervention. The satisfaction question was dichotomized as being satisfied or not. At this time, patients answered a transitional question about their joint improvement after the intervention. The possible responses included "a great deal better," "somewhat better," "equal," "somewhat worse," or "a great deal worse."	The MCID (minimal clinically importance) for bodily pain of SF-36 was at 12.83
Quintana, 2006[338] Method: Anchor Worst to best: 0-100 SF-36: bodily pain	Six months after the intervention, patients were sent a letter with the questionnaires and additional questions on the clinical aspects of their disease and satisfaction with the intervention. The satisfaction question was dichotomized as being satisfied or not. At this time, patients answered a transitional question about their joint improvement after the intervention. The possible responses included "a great deal better," "somewhat better," "equal," "somewhat worse," or "a great deal worse."	The MDC (minimal detectable change) for bodily pain of SF-36 was at 42.32
Quintana, 2006[338] Method: Anchor Worst to best: 0-100 SF-36: general health	Six months after the intervention, patients were sent a letter with the questionnaires and additional questions on the clinical aspects of their disease and satisfaction with the intervention. The satisfaction question was dichotomized as being satisfied or not. At this time, patients answered a transitional question about their joint improvement after the intervention. The possible responses included "a great deal better," "somewhat better," "equal," "somewhat worse," or "a great deal worse."	The MCID (minimal clinically importance) for general health of SF-36 was at 0.11
Quintana, 2006[338] Method: Anchor Worst to best: 0-100 SF-36: general health	Six months after the intervention, patients were sent a letter with the questionnaires and additional questions on the clinical aspects of their disease and satisfaction with the intervention. The satisfaction question was dichotomized as being satisfied or not. At this time, patients answered a transitional question about their joint improvement after the intervention. The possible responses included "a great deal better," "somewhat better," "equal," "somewhat worse," or "a great deal worse."	The MDC (minimal detectable change) for general health of SF-36 was at 27.04
Quintana, 2006[338] Method: ANCHOR Worst to best: 0-100 SF-36: mental health	Six months after the intervention, patients were sent a letter with the questionnaires and additional questions on the clinical aspects of their disease and satisfaction with the intervention. The satisfaction question was dichotomized as being satisfied or not. At this time, patients answered a transitional question about their joint improvement after the intervention. The possible responses included "a great deal better," "somewhat better," "equal," "somewhat worse," or "a great deal worse."	The MCID (minimal clinically importance) for mental health of SF-36 was at 0.76
Quintana, 2006[338] Method: Anchor Worst to best: 0-100 SF-36: mental health	Six months after the intervention, patients were sent a letter with the questionnaires and additional questions on the clinical aspects of their disease and satisfaction with the intervention. The satisfaction question was dichotomized as being satisfied or not. At this time, patients answered a transitional question about their joint improvement after the intervention. The possible responses included "a great deal better," "somewhat better," "equal," "somewhat worse," or "a great deal worse."	The MDC (minimal detectable change) for mental health of SF-36 was at 23.85
Quintana, 2006[338] Method: Anchor Worst to best: 0-100	Six months after the intervention, patients were sent a letter with the questionnaires and additional questions on the clinical aspects of their disease and satisfaction with the intervention. The satisfaction question was dichotomized as being satisfied or not. At this	The MCID (minimal clinically importance) for physical functioning of SF-36 was at 10.04

Appendix Table F56. Minimal clinically important differences in the Short-Form Questionnaire-36 (SF-36) (continued)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
SF-36: physical functioning	time, patients answered a transitional question about their joint improvement after the intervention. The possible responses included "a great deal better," "somewhat better," "equal," "somewhat worse," or "a great deal worse."	
Quintana, 2006[338] Method: Anchor Worst to best: 0-100 SF-36: physical functioning	Six months after the intervention, patients were sent a letter with the questionnaires and additional questions on the clinical aspects of their disease and satisfaction with the intervention. The satisfaction question was dichotomized as being satisfied or not. At this time, patients answered a transitional question about their joint improvement after the intervention. The possible responses included "a great deal better," "somewhat better," "equal," "somewhat worse," or "a great deal worse."	The MDC (minimal detectable change) for physical functioning of SF-36 was at 20.19
Quintana, 2006[338] Method: Anchor Worst to best: 0-100 SF-36: role emotional	Six months after the intervention, patients were sent a letter with the questionnaires and additional questions on the clinical aspects of their disease and satisfaction with the intervention. The satisfaction question was dichotomized as being satisfied or not. At this time, patients answered a transitional question about their joint improvement after the intervention. The possible responses included "a great deal better," "somewhat better," "equal," "somewhat worse," or "a great deal worse."	The MCID (minimal clinically importance) for role-emotional of SF-36 was at 2.43
Quintana, 2006[338] Method: Anchor Worst to best: 0-100 SF-36: role emotional	Six months after the intervention, patients were sent a letter with the questionnaires and additional questions on the clinical aspects of their disease and satisfaction with the intervention. The satisfaction question was dichotomized as being satisfied or not. At this time, patients answered a transitional question about their joint improvement after the intervention. The possible responses included "a great deal better," "somewhat better," "equal," "somewhat worse," or "a great deal worse."	The MDC (minimal detectable change) for role-emotional of SF-36 was at 28.13
Quintana, 2006[338] Method: Anchor Worst to best: 0-100 SF-36: role physical	Six months after the intervention, patients were sent a letter with the questionnaires and additional questions on the clinical aspects of their disease and satisfaction with the intervention. The satisfaction question was dichotomized as being satisfied or not. At this time, patients answered a transitional question about their joint improvement after the intervention. The possible responses included "a great deal better," "somewhat better," "equal," "somewhat worse," or "a great deal worse."	The MCID (minimal clinically importance) for role- physical of SF-36 was at 7.81
Quintana, 2006[338] Method: Anchor Worst to best: 0-100 SF-36: role physical	Six months after the intervention, patients were sent a letter with the questionnaires and additional questions on the clinical aspects of their disease and satisfaction with the intervention. The satisfaction question was dichotomized as being satisfied or not. At this time, patients answered a transitional question about their joint improvement after the intervention. The possible responses included "a great deal better," "somewhat better," "equal," "somewhat worse," or "a great deal worse."	The MDC (minimal detectable change) for role- physical of SF-36 was at 28.64
Quintana, 2006[338] Method: Anchor Worst to best: 0-100 SF-36: social functioning	Six months after the intervention, patients were sent a letter with the questionnaires and additional questions on the clinical aspects of their disease and satisfaction with the intervention. The satisfaction question was dichotomized as being satisfied or not. At this time, patients answered a transitional question about their joint improvement after the intervention. The possible responses included "a great deal better," "somewhat better," "equal," "somewhat worse," or "a great deal worse."	The MCID (minimal clinically importance) for social functioning of SF-36 was at 8.77

Appendix Table F56. Minimal clinically important differences in the Short-Form Questionnaire-36 (SF-36) (continued)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
Quintana, 2006[338] Method: Anchor Worst to best: 0-100 SF-36: social functioning	Six months after the intervention, patients were sent a letter with the questionnaires and additional questions on the clinical aspects of their disease and satisfaction with the intervention. The satisfaction question was dichotomized as being satisfied or not. At this time, patients answered a transitional question about their joint improvement after the intervention. The possible responses included "a great deal better," "somewhat better," "equal," "somewhat worse," or "a great deal worse."	The MDC (minimal detectable change) for social functioning of SF-36 was at 42.11
Quintana, 2006[338] Method: Anchor Worst to best: 0-100 SF-36: vitality	Six months after the intervention, patients were sent a letter with the questionnaires and additional questions on the clinical aspects of their disease and satisfaction with the intervention. The satisfaction question was dichotomized as being satisfied or not. At this time, patients answered a transitional question about their joint improvement after the intervention. The possible responses included "a great deal better," "somewhat better," "equal," "somewhat worse," or "a great deal worse."	The MCID (minimal clinically importance) for vitality of SF-36 was at 5.42
Quintana, 2006[338] Method: Anchor Worst to best: 0-100 SF-36: vitality	Six months after the intervention, patients were sent a letter with the questionnaires and additional questions on the clinical aspects of their disease and satisfaction with the intervention. The satisfaction question was dichotomized as being satisfied or not. At this time, patients answered a transitional question about their joint improvement after the intervention. The possible responses included "a great deal better," "somewhat better," "equal," "somewhat worse," or "a great deal worse."	The MDC (minimal detectable change) for vitality of SF-36 was at 29.65
Angst, 2001[420] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	The transition questionnaire was used to gather data from the patients about their current subjective health status in relation to the OA joint in terms of their general health. At the 3-month followup, patients had to compare their general health status with that of 3 months earlier, i.e., with that at baseline examination, using the assessment categories “much worse,” “slightly worse,” “equal,” “slightly better,” and “much better.”	The mean score difference between the "equal" group and the "slightly better" group =7.2 that was the MCID for worsening
Angst, 2001[420] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	The transition questionnaire was used to gather data from the patients about their current subjective health status in relation to the OA joint in terms of their general health. At the 3-month followup, patients had to compare their general health status with that of 3 months earlier, i.e., with that at baseline examination, using the assessment categories “much worse,” “slightly worse,” “equal,” “slightly better,” and “much better.”	The mean score difference between the "equal" group and the "slightly better" group =7.8 that was the MCID for improvement
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhatbetter’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 bodily pain score of 16.86(31.83) was equivalent to patient reporting " somewhat better". This was considered the MCID (minimal clinically important difference.
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 bodily pain score of 22.17(34.44) was equivalent to patient reporting " A great deal better".

Appendix Table F56. Minimal clinically important differences in the Short-Form Questionnaire-36 (SF-36) (continued)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 bodily pain score of 7.53(26.00) was equivalent to patient reporting "equal".
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 bodily pain score of -8.47(21.46) was equivalent to patient reporting " worse".
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: The MDC (minimal detectable change) for the SF-36 bodily pain subscale that expresses the minimal magnitude of change in scores above or below which the observed changes is likely to be real at 95% level of confidence and not just measurement error was 37.91
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 general health score of 0.85(18.05) was equivalent to patient reporting " somewhat better". This was considered the MCID (minimal clinically important difference.
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 general health score of -0.88(23.29) was equivalent to patient reporting " equal"
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 general health score of -10.82(19.86)) was equivalent to patient reporting " worse"
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 general health score of 4.52(17.80) was equivalent to patient reporting " A great deal better"

Appendix Table F56. Minimal clinically important differences in the Short-Form Questionnaire-36 (SF-36) (continued)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: The MDC (minimal detectable change) for the SF-36 general health subscale that expresses the minimal magnitude of change in scores above or below which the observed changes is likely to be real at 95% level of confidence and not just measurement error was 27.40
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 mental health score of -0.32(23.20) was equivalent to patient reporting " somewhat better". This was considered the MCID (minimal clinically important difference.
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 mental health score of -0.44(19.16) was equivalent to patient reporting " equal".
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 mental health score of 11.88(22.38) was equivalent to patient reporting " A great deal better"
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 mental health score of -16.82(26.41)was equivalent to patient reporting " worse".
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: The MDC (minimal detectable change) for the SF-36 mental health subscale that expresses the minimal magnitude of change in scores above or below which the observed changes is likely to be real at 95% level of confidence and not just measurement error was 24.19
Angst, 2001[420] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	The transition questionnaire was used to gather data from the patients about their current subjective health status in relation to the OA joint in terms of their general health. At the 3-month followup, patients had to compare their general health status with that of 3 months earlier, i.e., with that at baseline examination, using the assessment categories “much worse,” “slightly worse,” “equal,” “slightly better,” and “much better.”	The mean score difference between the "equal" group and the "slightly better" group =2.0 that was the MCID for improvement

Appendix Table F56. Minimal clinically important differences in the Short-Form Questionnaire-36 (SF-36) (continued)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
Angst, 2001[420] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	The transition questionnaire was used to gather data from the patients about their current subjective health status in relation to the OA joint in terms of their general health. At the 3-month followup, patients had to compare their general health status with that of 3 months earlier, i.e., with that at baseline examination, using the assessment categories “much worse,” “slightly worse,” “equal,” “slightly better,” and “much better.”	The mean score difference between the "equal" group and the "slightly better" group =2.0 that was the MCID for worsening
Angst, 2001[420] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	The transition questionnaire was used to gather data from the patients about their current subjective health status in relation to the OA joint in terms of their general health. At the 3-month followup, patients had to compare their general health status with that of 3 months earlier, i.e., with that at baseline examination, using the assessment categories “much worse,” “slightly worse,” “equal,” “slightly better,” and “much better.”	The mean score difference between the "equal" group and the "slightly better" group =3.3 that was the MCID for improvement
Angst, 2001[420] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	The transition questionnaire was used to gather data from the patients about their current subjective health status in relation to the OA joint in terms of their general health. At the 3-month followup, patients had to compare their general health status with that of 3 months earlier, i.e., with that at baseline examination, using the assessment categories “much worse,” “slightly worse,” “equal,” “slightly better,” and “much better.”	The mean score difference between the "equal" group and the "slightly better" group =5.3 that was the MCID for worsening
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 physical functioning score of 11.57(22.60) was equivalent to patient reporting " somewhat better". This was considered the MCID (minimal clinically important difference.
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 physical functioning score of 3.64(30.75) was equivalent to patient reporting " equal".
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 physical functioning score of 30.38(26.54) was equivalent to patient reporting " A great deal better"
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 physical functioning score of -5.22(23.52) was equivalent to patient reporting " worse".
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: The MDC (minimal detectable change) for the SF-36 physical functioning subscale that expresses the minimal magnitude of change in scores above or below which the observed changes is likely to be real at 95% level of confidence and

Appendix Table F56. Minimal clinically important differences in the Short-Form Questionnaire-36 (SF-36) (continued)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
		not just measurement error was 19.50
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 role emotional score of 1.11(45.89) was equivalent to patient reporting" equal".
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 role emotional score of 14.23(46.86)was equivalent to patient reporting "A great deal better".
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 role emotional score of 30.95(68.52)was equivalent to patient reporting " worse".
Escobar, 2007[430] Method: Anchor Worst to best:0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 role emotional score of 7.65(54.23)was equivalent to patient reporting " somewhat better". This was considered the MCID (minimal clinically important difference.
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: The MDC (minimal detectable change) for the SF-36 role emotional subscale that expresses the minimal magnitude of change in scores above or below which the observed changes is likely to be real at 95% level of confidence and not just measurement error was 28.52
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 role physical of 11.69(35.27) was equivalent to patient reporting " somewhat better". This was considered the MCID (minimal clinically important difference.
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 role physical of 2.30(41.06) was equivalent to patient reporting " equal".
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer	At 6 months: Mean change in SF-36 role physical of 37.81(46.42) was equivalent to patient reporting " a great

Appendix Table F56. Minimal clinically important differences in the Short-Form Questionnaire-36 (SF-36) (continued)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
Short-Form Questionnaire-36	‘‘somewhat better’’ was used to establish the MCID for improvement.	deal better".
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 role physical of -9.62(29.82) was equivalent to patient reporting " worse".
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: The MDC (minimal detectable change) for the SF-36 role physical subscale that expresses the minimal magnitude of change in scores above or below which the observed changes is likely to be real at 95% level of confidence and not just measurement error was 26.97
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 social functioning score of 0.00(27.20) was equivalent to patient reporting " equal".
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 social functioning score of 11.66(35.37) was equivalent to patient reporting " somewhat better". This was considered the MCID (minimal clinically important difference.
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 social functioning score of -12.50(33.85) was equivalent to patient reporting "worse".
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 social functioning score of 22.58(31.67)was equivalent to patient reporting " A great deal better"
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: The MDC (minimal detectable change) for the SF-36 social functioning subscale that expresses the minimal magnitude of change in scores above or below which the observed changes is likely to be real at 95% level of confidence and not just measurement error was 41.23

Appendix Table F56. Minimal clinically important differences in the Short-Form Questionnaire-36 (SF-36) (continued)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 utility SF-6D score of -0.04(0.12) was equivalent to patient reporting "worse".
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 utility SF-6D score of 0.04(0.15) was equivalent to patient reporting " somewhat better". This was considered the MCID (minimal clinically important difference.
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 utility SF-6D score of 0.05(0.12) was equivalent to patient reporting " equal".
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 utility SF-6D score of 0.14(0.15) was equivalent to patient reporting " a great deal better".
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: The MDC (minimal detectable change) for the SF-36 utility SF-6D subscale that expresses the minimal magnitude of change in scores above or below which the observed changes is likely to be real at 95% level of confidence and not just measurement error was 0.17
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 vitality score of -1.49(18.13) was equivalent to patient reporting "equal".
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 vitality score of -12.40(16.18) was equivalent to patient reporting "worse".
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’, somewhat better’’, ‘‘equal’’, ‘‘somewhat worse’’ and ‘‘a great deal worse’’. The answer ‘‘somewhat better’’ was used to establish the MCID for improvement.	At 6 months: Mean change in SF-36 vitality score of 16.62(24.54) was equivalent to patient reporting " a great deal better"
Escobar, 2007[430] Method: Anchor	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ‘‘a great deal better’’,	At 6 months: Mean change in SF-36 vitality score of 3.86(24.75) was

Appendix Table F56. Minimal clinically important differences in the Short-Form Questionnaire-36 (SF-36) (continued)

Author, year Method Worst to best Scale	Reference	Definition of minimally clinically important differences
Worst to best: 0 to 100 Short-Form Questionnaire-36	somewhat better'', ''equal'', ''somewhat worse'' and ''a great deal worse''. The answer ''somewhat better'' was used to establish the MCID for improvement.	equivalent to patient reporting "somewhat better". This was considered the MCID (minimal clinically important difference.
Escobar, 2007[430] Method: Anchor Worst to best: 0 to 100 Short-Form Questionnaire-36	All patients had to answer a question about its improvement in their knee at 6 months and 2 years after the intervention. The possible responses were ''a great deal better'', somewhat better'', ''equal'', ''somewhat worse'' and ''a great deal worse''. The answer ''somewhat better'' was used to establish the MCID for improvement.	At 6 months: The MDC (minimal detectable change) for the SF-36 vitality subscale that expresses the minimal magnitude of change in scores above or below which the observed changes is likely to be real at 95% level of confidence and not just measurement error was 29.84

Appendix Table F57. Minimal clinically important differences in the tools to assess outcomes in patients with knee OA

Author, year Test Worst to best Method	Reference	Definition of minimally clinically important differences
Tanner, 2007[348] Test: American Academy of Orthopedic Surgeons (AAOS)Sports Knee Rating Scale Method: Distribution	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to ratethe importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or international elite level."	11 questions had a mean importance ranking of 1 or less
Tanner, 2007[348] Test: American Academy of Orthopedic Surgeons Sports Knee Rating Scale Method: Distribution	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or international elite level."	3 of the AAOS questions had a mean importance ranking of at least 3 (score on a Likert scale of 0 to 5, with 0 being not experienced and 5 being experienced and very important)
Tanner, 2007[348] Test: American Academy of Orthopedic Surgeons Sports Knee Rating Scale Method: Distribution	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or international elite level."	3 questions had a top-20 FIP scores (FIP=frequency*mean importance; the greater the FIP, the more important a symptom or disability is to patients. A high FIP indicates that a symptom or disability is both frequently experienced and most important to patients)
Tanner, 2007[348] Test: American Academy of Orthopedic Surgeons Sports Knee	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate	At least 51% of the patients with mild to moderate OA endorsed 11 (55%) of the AAOS questions.

Appendix Table F57. Minimal clinically important differences in the tools to assess outcomes in patients with knee OA (continued)

Author, year Test Worst to best Method	Reference	Definition of minimally clinically important differences
Rating Scale Method: Distribution	the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or international elite level."	
Tanner, 2007[348] Test: The Activities of Daily Living Method: Distribution	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or international elite level."	5/17 of the ADL questions had a mean importance ranking of at least 3 (score on a Likert scale of 0 to 5, with 0 being not experienced and 5 being experienced and very important)
Tanner, 2007[348] Test: The Activities of Daily Living Method: Distribution	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or international elite level."	8 questions had a top-20 FIP scores (FIP=frequency*mean importance; the greater the FIP, the more important a symptom or disability is to patients. A high FIP indicates that a symptom or disability is both frequently experienced and most important to patients)
Tanner, 2007[348] Test: The Activities of Daily Living Method: Distribution	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study	At least 51% of the patients with mild to moderate OA endorsed 16/17 (94%) of the ADL questions

Appendix Table F57. Minimal clinically important differences in the tools to assess outcomes in patients with knee OA (continued)

Author, year Test Worst to best Method	Reference	Definition of minimally clinically important differences
	questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or international elite level."	
Tanner, 2007[348] Test: The Activities of Daily Living Method: Distribution	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale . The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or international elite level."	No question had a mean importance ranking of 1 or less
Bellamy, 2007[340] Test: Bellamy et al. Low Intensity Symptom State-attainment Index Method: Cut-off Worse to best: 100 to 0	WOMAC Likert 3.0: pain subscale	5 threshold levels of BLISS response were performed using the WOMAC Pain Scale (WOMAC-P), from a very low level of pain to higher levels of pain. The WOMAC-P varies from 0 to 20 and in the analysis data were transformed to normalized units (NU) on a 0-100 scale. The threshold levels included: WOMAC pain score <=5, <=10, <=15, <=20, and <=25 (0=no pain, 100=extreme pain). The minimal pain intensity requirement at baseline for inclusion in this study was 35 NU, a value just above the MCAS (Maximally Clinically Acceptable Status) and PASS (Patient Acceptable Symptom State) thresholds for patient acceptable pain intensity of 33 and 32mm, respectively, for patient acceptable pain intensity. The 5NU difference on the transformed 0-100 scale is equivalent to a one unit change in one of the five component questions on the Likert-scaled (0-20) version of the WOMAC pain subscale and represents the smallest detectable difference. A WOMAC-based BLISS-10, is a potentially symptom intensity state because it is a cutpoint at which a clinically important between-group difference (24 percentage points) is discernible. Refer to PubMed IDs: 15208174, 15130902, and 10509850 and DOI: 10.1016/S0011-393X(05)80166-3

Appendix Table F57. Minimal clinically important differences in the tools to assess outcomes in patients with knee OA (continued)

Author, year Test Worst to best Method	Reference	Definition of minimally clinically important differences
Thomas, 2008[341] Test: Chronic Pain Grade Method: Distribution	Numerical Rating Scale (NRS)	At 18 month follow-up: the mean for the predicted probability of Chronic Pain Grade II-IV knee pain for patients who belonged to the baseline risk score group (approach proposed by Von Korff and Miglioretti) intermediate risk (5-11) was 0.341 (range: 0.218, 0.499)
Thomas, 2008[341] Test: Chronic Pain Grade Method: Distribution	Numerical Rating Scale	At 18 month follow-up: the mean for the predicted probability of Chronic Pain Grade II-IV knee pain for patients who belonged to the baseline risk score group (approach proposed by Von Korff and Miglioretti) low risk (0-4) was 0.153 (range: 0.106, 0.184)
Thomas, 2008[341] Test: Chronic Pain Grade Method: Distribution	Numerical Rating Scale	At 18 month follow-up: the mean for the predicted probability of Chronic Pain Grade II-IV knee pain for patients who belonged to the baseline risk score group (approach proposed by Von Korff and Miglioretti) possible chronic pain (12-17) was 0.656 (range: 0.552-0.781)
Thomas, 2008[341] Test: Chronic Pain Grade Method: Distribution	Numerical Rating Scale	At 18 month follow-up: the mean for the predicted probability of Chronic Pain Grade II-IV knee pain for patients who belonged to the baseline risk score group (approach proposed by Von Korff and Miglioretti) probable chronic pain (18+) was 0.888 (range: 0.815-0.974)
Thomas, 2008[341] Test: Chronic Pain Grade Method: Distribution	Numerical Rating Scale	At 3-year follow-up: the mean for the predicted probability of Chronic Pain Grade II-IV knee pain for patients who belonged to the 18-month risk -score group (approach proposed by Von Korff and Miglioretti) intermediate risk (5-10) was 0.341 (range: 0.229, 0.479)
Thomas, 2008[341] Test: Chronic Pain Grade Method: Distribution	Numerical Rating Scale	At 3-year follow-up: the mean for the predicted probability of Chronic Pain Grade II-IV knee pain for patients who belonged to the 18-month risk- score group (approach proposed by Von Korff and Miglioretti) low risk (0-4) was 0.156 (range: 0.108, 0.192)
Thomas, 2008[341] Test: Chronic Pain Grade Method: Distribution	Numerical Rating Scale	At 3-year follow-up: the mean for the predicted probability of Chronic Pain Grade II-IV knee pain for patients who belonged to the 18-month risk- score group (approach proposed by Von Korff and Miglioretti) possible chronic pain (12-17) was 0.662 (range: 0.536, 0.781)
Thomas, 2008[341] Test: Chronic Pain Grade Method: Distribution	Numerical Rating Scale	At 3-year follow-up: the mean for the predicted probability of Chronic Pain Grade II-IV knee pain for patients who belonged to the 18-month risk- score group (approach proposed by Von Korff and Miglioretti) probable chronic pain (18+) was 0.891 (range: 0.817, 0.982)

Appendix Table F57. Minimal clinically important differences in the tools to assess outcomes in patients with knee OA (continued)

Author, year Test Worst to best Method	Reference	Definition of minimally clinically important differences
Thomas, 2008[341] Test: Chronic Pain Grade Method: Distribution	Numerical Rating Scale	At 3-year follow-up: the mean for the predicted probability of Chronic Pain Grade II-IV knee pain for patients who belonged to the baseline risk score group (approach proposed by Von Korff and Miglioretti) intermediate risk (4-10) was 0.329 (range: 0.214, 0.466)
Thomas, 2008[341] Test: Chronic Pain Grade Method: Distribution	Numerical Rating Scale	At 3-year follow-up: the mean for the predicted probability of Chronic Pain Grade II-IV knee pain for patients who belonged to the baseline risk score group (approach proposed by Von Korff and Miglioretti) low risk (0-3) was 0.165 (range: 0.132, 0.182)
Thomas, 2008[341] Test: Chronic Pain Grade Method: Distribution	Numerical Rating Scale	At 3-year follow-up: the mean for the predicted probability of Chronic Pain Grade II-IV knee pain for patients who belonged to the baseline risk score group (approach proposed by Von Korff and Miglioretti) possible chronic pain (11-17) was 0.637 (range: 0.514, 0.773)
Thomas, 2008[341] Test: Chronic Pain Grade Method: Distribution	Numerical Rating Scale	At 3-year follow-up: the mean for the predicted probability of Chronic Pain Grade II-IV knee pain for patients who belonged to the baseline risk score group (approach proposed by Von Korff and Miglioretti) probable chronic pain (18+) was 0.878 (range: 0.806, 0.967)
Belo, 2009[432] Test: American College of Rheumatology (ACR) Method: Anchor	Baseline and 12-month follow-up values of WOMAC ; SF-36; KSS (Knee Society Score); Lysholm Knee Scoring Scale; and baseline values of Tampa Scale for Kinesiophobia	The clinical ACR classification criteria of knee OA have no prognostic value for predicting persisting knee complaints or an increase of disability at 1-year of follow-up in adult patients with non-traumatic knee complaints in GP.
Bellamy, 2001[431] Test: Dictionary of the Rheumatic Diseases Method Method: Anchor	Delphi exercise to define minimum clinically important differences	The MCID for grip strength (Dictionary of the Rheumatic Diseases Method) =37.5
Mangione, 2010[433] Test: Short Physical Performance Battery Method: Anchor	At 2 times patients were tested: Each participant was asked to walk at his or her "normal" speed across the mat for 2 trials and then as "fast as possible" for 2 trials. The 2 trials of fast speed were averaged each session.	The MDC_{90} (minimal detectable change with a 90% confidence level)was 0.21 m/s
Kennedy, 2005[345] Test: Fast Self-Paced Walk Time (completed over 40 meters) Method: Anchor	At 3 points, patients were timed while they walked two lengths (turn excluded) of a 20-m indoor course in response to the instruction: "walk as quickly as you can without overexerting yourself."	The MDC_{90} (minimal detectable change at the 90% confidence interval) was at 4.04s

Appendix Table F57. Minimal clinically important differences in the tools to assess outcomes in patients with knee OA (continued)

Author, year Test Worst to best Method	Reference	Definition of minimally clinically important differences
Bellamy, 2001[431] Test: FDA method Method: Anchor	Delphi exercise to define minimum clinically important differences	The MCID for grip strength (FDA method) =37.5
Mangione, 2010[433] Test: Short Physical Performance Battery Method: Anchor	At 2 times patients were tested: Each participant was asked to walk at his or her "normal" speed across the mat for 2 trials and then as "fast as possible" for 2 trials. The 2 trials of fast speed were averaged each session.	The MDC_{90} (minimal detectable change with a 90% confidence level)was 0.19 m/s
Bellamy, 2001[431] Test: Global Assessment Method: Anchor	Delphi exercise to define minimum clinically important differences	The MCID for investigator's opinion of patient's general condition =0.90
Bellamy, 2001[431] Test: Global Assessment Method: Anchor	Delphi exercise to define minimum clinically important differences	The MCID for physician's estimate of disease activity =0.78
Bellamy, 2001[431] Test: Global Assessment Method: Anchor	Delphi exercise to define minimum clinically important differences	The MCID for subjective pain evaluation by patient=0.78
Bellamy, 2001[431] Test: Global Assessment Method: Anchor	Delphi exercise to define minimum clinically important differences	The MCID for patient estimate of disease activity =1
Bellamy, 2001[431] Test: Global Assessment Method: Anchor	Delphi exercise to define minimum clinically important differences	The MCID for patient's opinion of general condition =0.9
Redelmeier, 1993[346] Test: Health Assessment Questionnaire (HAQ) Method: Distribution	After completing the initial questionnaires, participants were asked to talk to each other in one-on-one conversations. At the end of each dialogue, participants were told to rate their disability relative to their conversational partner. The rating question was, "Compared with this person, my physical ability to function during the past week was ..." The response categories were as follows: "much better," "somewhat better," "about the same," "somewhat worse," and "much worse".	HAQ scores needed to improve by 0.17 units for respondents on an average to stop rating themselves as about the same and start rating themselves as somewhat better (0.15 to -0.02)
Redelmeier, 1993[346] Test: Health Assessment Questionnaire	After completing the initial questionnaires, participants were asked to talk to each other in one-on-one conversations. At the end of each dialogue, participants were told to rate their	HAQ scores needed to differ by 0.22 units for average respondents to stop rating themselves as about the same and start rating themselves as somewhat worse (0.37 to

Appendix Table F57. Minimal clinically important differences in the tools to assess outcomes in patients with knee OA (continued)

Author, year Test Worst to best Method	Reference	Definition of minimally clinically important differences
Method: Distribution	disability relative to their conversational partner. The rating question was, "Compared with this person, my physical ability to function during the past week was ..." The response categories were as follows: "much better," "somewhat better," "about the same," "somewhat worse," and "much worse".	0.15)
Redelmeier, 1993[346] Test: Health Assessment Questionnaire Method: Cut-off	After completing the initial questionnaires, participants were asked to talk to each other in one-on-one conversations. At the end of each dialogue, participants were told to rate their disability relative to their conversational partner. The rating question was, "Compared with this person, my physical ability to function during the past week was ..." The response categories were as follows: "much better," "somewhat better," "about the same," "somewhat worse," and "much worse".	The threshold of symptomatic clinical importance for OA =0.20
Redelmeier, 1993[346] Test: Health Assessment Questionnaire Method: Cut-off	After completing the initial questionnaires, participants were asked to talk to each other in one-on-one conversations. At the end of each dialogue, participants were told to rate their disability relative to their conversational partner. The rating question was, "Compared with this person, my physical ability to function during the past week was ..." The response categories were as follows: "much better," "somewhat better," "about the same," "somewhat worse," and "much worse".	The threshold of symptomatic clinical importance for less disabled participants was significantly lower than the threshold for more disabled participants (0.08 vs 0.29 HAQ units; $p<0.05$)
Redelmeier, 1993[346] Test: Health Assessment Questionnaire Method: Distribution	After completing the initial questionnaires, participants were asked to talk to each other in one-on-one conversations. At the end of each dialogue, participants were told to rate their disability relative to their conversational partner. The rating question was, "Compared with this person, my physical ability to function during the past week was ..." The response categories were as follows: "much better," "somewhat better," "about the same," "somewhat worse," and "much worse".	The average patient would find an HAQ score difference on the order of 0.2 units to be an important symptomatic difference
Tanner, 2007[348] Test: International Knee Documentation Committee Method: Distribution	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or	3 questions had a top-20 FIP scores (FIP=frequency*mean importance; the greater the FIP, the more important a symptom or disability is to patients. A high FIP indicates that a symptom or disability is both frequently experienced and most important to patients)

Appendix Table F57. Minimal clinically important differences in the tools to assess outcomes in patients with knee OA (continued)

Author, year Test Worst to best Method	Reference	Definition of minimally clinically important differences
	international elite level."	
Tanner, 2007[348] Test: International Knee Documentation Committee Method: Distribution	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or international elite level."	4 of the IKDC questions had a mean importance ranking of atleast 3 (score on a Likert scale of 0 to 5, with 0 being not experienced and 5 being experienced and very important)
Tanner, 2007[348] Test: International Knee Documentation Committee Method: Distribution	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or international elite level."	At least 51% of the patients with mild to moderate OA endorsed 18 (100%) of the IKDC questions
Tanner, 2007[348] Test: International Knee Documentation Committee Method: Distribution	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 w assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or international elite level."	Two questions had a mean importance ranking of 1 or less
Ehrich, 2000[434] Test: WOMAC VA 3.1: (pain, stiffness, and physical function	Patient global response to therapy measure	For patient global response to therapy measure: The minimal perceptible clinical improvement (MPCI)(defined as the difference in mean change scores between patients

Appendix Table F57. Minimal clinically important differences in the tools to assess outcomes in patients with knee OA (continued)

Author, year Test Worst to best Method	Reference	Definition of minimally clinically important differences
scales); VAS (patient walking on a flat surface score); Patient global assessment of disease status; Investigator global assessment of disease status Method: Anchor		with a "none" response and those with a "poor" response on the patient global response to therapy measure) was 0.43 (on a 0-4 Likert scale) for the investigator global disease status measure, 11.1 (on a 100mm VAS) for the WOMAC pain walking on a flat surface item; 11.7 for the patient global disease status, 9.7 on WOMAC pain, 9.3 on WOMAC physical functioning, and 10.0 on WOMAC stiffness
Ehrich, 2000[434] Test: WOMAC VA 3.1: (pain, stiffness, and physical function scales); VAS (patient walking on a flat surface score); Patient global assessment of disease status; Investigator global assessment of disease status Method: Anchor	Investigator global response to therapy measure	For investigator global response to therapy measure:The minimal perceptible clinical improvement (MPCI)(defined as the difference in mean change scores between patients with a "none" response and those with a "poor" response on the investigator global response to therapy measure) was 0.49 (on a 0-4 Likert scale) for the investigator global disease status measure, 12.2 (on a 100mm VAS) for the WOMAC pain walking on a flat surface item; 11.1 for the patient global disease status, 10.8 on WOMAC pain, 7.6 on WOMAC physical functioning, and 10.4 on WOMAC stiffness
Ehrich, 2000[434] Test: WOMAC: pain walking on a flat surface Method: Distribution	Patient global response to therapy measure and investigator global response to therapy measure	The minimal perceptible clinical improvement of roughly 10mm is seen as the difference between the median change scores for the "none" and the "poor" groups.
Fransen, 2003[350] Test: Knee extensor force in Newtons Method: Anchor	Knee extensor force evaluated on 2 occasions; WOMAC:VAS version	Female (50-59 years) with knee OA would need to show a change of 16.2N in knee extensor force for the clinician to be moderately confident that an actual change had occurred.
Fransen, 2003[350] Test: Knee extensor force in Newtons Method: Anchor	Knee extensor force evaluated on 2 occasions; WOMAC:VAS version	Female (60-69 years) with knee OA would need to show a change of 21.6N in knee extensor force for the clinician to be moderately confident that an actual change had occurred.
Fransen, 2003[350] Test: Knee extensor force in Newtons Method: Anchor	Knee extensor force evaluated on 2 occasions; WOMAC:VAS version	Female (70-79 years) with knee OA would need to show a change of 18.5N in knee extensor force for the clinician to be moderately confident that an actual change had occurred.

Appendix Table F57. Minimal clinically important differences in the tools to assess outcomes in patients with knee OA (continued)

Author, year Test Worst to best Method	Reference	Definition of minimally clinically important differences
Fransen, 2003[350] Test: Knee extensor force in Newtons Method: Anchor	Knee extensor force evaluated on 2 occasions; WOMAC:VAS version	Male (60-69 years) with knee OA would need to show a change of 6N in knee extensor force for the clinician to be moderately confident that an actual change had occurred.
Fransen, 2003[350] Test: Knee extensor force in Newtons Method: Anchor	Knee extensor force evaluated on 2 occasions; WOMAC:VAS version	Male (70-79 years) with knee OA would need to show a change of 17N in knee extensor force for the clinician to be moderately confident that an actual change had occurred.
Fransen, 2003[350] Test: Knee flexor force in Newtons Method: Anchor	Knee flexor force evaluated on 2 occasions; WOMAC:VAS version	Female (50-59 years) with knee OA would need to show a change of 14N in knee flexor force for the clinician to be moderately confident that an actual change had occurred.
Fransen, 2003[350] Test: Knee flexor force in Newtons Method: Anchor	Knee flexor force evaluated on 2 occasions; WOMAC:VAS version	Female (60-69 years) with knee OA would need to show a change of 7.2N in knee flexor force for the clinician to be moderately confident that an actual change had occurred.
Fransen, 2003[350] Test: Knee flexor force in Newtons Method: Anchor	Knee flexor force evaluated on 2 occasions; WOMAC:VAS version	Female (70-79 years) with knee OA would need to show a change of 5.5N in knee flexor force for the clinician to be moderately confident that an actual change had occurred.
Fransen, 2003[350] Test: Knee flexor force in Newtons Method: Anchor	Knee flexor force evaluated on 2 occasions; WOMAC:VAS version	Male (60-69 years) with knee OA would need to show a change of15.66N in knee flexor force for the clinician to be moderately confident that an actual change had occurred.
Fransen, 2003[350] Test: Knee flexor force in Newtons Method: Anchor	Knee flexor force evaluated on 2 occasions; WOMAC:VAS version	Male (70-79 years) with knee OA would need to show a change of 12.3N in knee flexor force for the clinician to be moderately confident that an actual change had occurred.
Tanner, 2007[348] Test: Knee, Injury and Osteoarthritis Outcome Score Method: Distribution	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in	14 of the KOOS questions had a mean importance ranking of at least 3 (score on a Likert scale of 0 to 5, with 0 being not experienced and 5 being experienced and very important)

Appendix Table F57. Minimal clinically important differences in the tools to assess outcomes in patients with knee OA (continued)

Author, year Test Worst to best Method	Reference	Definition of minimally clinically important differences
	competitive sports such as soccer at a national or international elite level."	
Tanner, 2007[348] Test: Knee, Injury and Osteoarthritis Outcome Score Method: Distribution	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or international elite level."	9 questions had a top-20 FIP scores (FIP=frequency*mean importance; the greater the FIP, the more important a symptom or disability is to patients. A high FIP indicates that a symptom or disability is both frequently experienced and most important to patients)
Tanner, 2007[348] Test: Knee, Injury and Osteoarthritis Outcome Score Method: Distribution	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or international elite level."	At least 51% of the patients with mild to moderate OA endorsed 38(90%) of the KOOS questions
Tanner, 2007[348] Test: Knee, Injury and Osteoarthritis Outcome Score Method: Distribution	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or international elite level."	Three questions had a mean importance ranking of 1 or less
Bellamy, 2001[431] Test: Lequesne Knee Index	Delphi exercise to define minimum clinically important differences	The MCID for Lequesne Knee Index =3

Appendix Table F57. Minimal clinically important differences in the tools to assess outcomes in patients with knee OA (continued)

Author, year Test Worst to best Method	Reference	Definition of minimally clinically important differences
Method: Anchor		
Bellamy, 2001[431] Test: Likert scale Method: Anchor	Delphi exercise to define minimum clinically important differences	The MCID for physicians overall assessment of physical disability on Likert scale =0.68
Bellamy, 2001[431] Test: Likert scale Method: Anchor	Delphi exercise to define minimum clinically important differences	The MCID for physician's global assessment of disease activity on Likert scale =0.78
Bellamy, 2001[431] Test: Likert scale Method: Anchor	Delphi exercise to define minimum clinically important differences	The MCID for patient overall assessment of pain on the Likert scale =0.78
Bellamy, 2001[431] Test: Likert scale Method: Anchor	Delphi exercise to define minimum clinically important differences	The MCID for patient overall assessment of morning stiffness on the Likert scale =0.80
Bellamy, 2001[431] Test: Likert scale Method: Anchor	Delphi exercise to define minimum clinically important differences	The MCID for patients overall assessment of physical disability on Likert scale =0.8
Bellamy, 2001[431] Test: Likert scale Method: Anchor	Delphi exercise to define minimum clinically important differences	The MCID for patient's global assessment of disease activity on the Likert scale =1
Bellamy, 2001[431] Test: Likert Scale for pain Method: Anchor	Delphi exercise to define minimum clinically important differences	The MCID for physicians overall assessment of pain =0.78 on a Likert scale
Bellamy, 2001[431] Test: Likert Scale for stiffness Method: Anchor	Delphi exercise to define minimum clinically important differences	The MCID for physicians overall assessment of stiffness =0.75 on a Likert scale
Tanner, 2007[348] Test: Modified Lysholm Knee Scoring Scale Method: Distribution	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level	2 of the Lysholm questions had a mean importance ranking of at least 3 (score on a Likert scale of 0 to 5, with 0 being not experienced and 5 being experienced and very important)

Appendix Table F57. Minimal clinically important differences in the tools to assess outcomes in patients with knee OA (continued)

Author, year Test Worst to best Method	Reference	Definition of minimally clinically important differences
	of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or international elite level."	
Tanner, 2007[348] Test: Modified Lysholm Knee Scoring Scale Method: Distribution	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or international elite level."	7 questions had a top-20 FIP scores (FIP=frequency*mean importance; the greater the FIP, the more important a symptom or disability is to patients. A high FIP indicates that a symptom or disability is both frequently experienced and most important to patients)
Tanner, 2007[348] Test: Modified Lysholm Knee Scoring Scale Method: Distribution	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in competitive sports such as soccer at a national or international elite level."	At least 51% of the patients with mild to moderate OA endorsed 2 (25%) of the Lysholm questions
Tanner, 2007[348] Test: Modified Lysholm Knee Scoring Scale Method: Distribution	A questionnaire of 111 items was developed by combining 222 patient-directed questions from the 11 knee-specific quality-of-life instruments. Patients were asked to rate the importance of the described symptom or disability using a 6-point Likert scale. The Tegner Activity Scale was administered as a separate tool to determine the activity level of the participating patients at the time the study questionnaire was administered. A patient's activity score from 0 to 10 was assigned, with corresponding definitions ranging from "on sick leave/disability" to "participation in	Four questions had a mean importance ranking of 1 or less

Appendix Table F57. Minimal clinically important differences in the tools to assess outcomes in patients with knee OA (continued)

Author, year Test Worst to best Method	Reference	Definition of minimally clinically important differences
	competitive sports such as soccer at a national or international elite level."	
Salaffi, 2004[335] Test: Numerical Rating Scale Method: Cut-off	Patients were instructed to draw a single mark on a horizontally oriented, graduated 10-cm NRS bounded by the descriptors ''no pain'' at the far left and ''worst possible pain'' at the far right. At a 3 months follow-up, patients were asked by the same data collector to repeat the measurement on an NRS, without access to any previous NRS ratings. The NRS score at the end of follow-up minus the score at baseline examination prior to the intervention defined the effect measured by NRS.	A raw change of -1.0 (AUC 0.889 +- 0.008) and percent change of -15% (AUC 0.881 +- 0.011) were optimal cut-off point associated with the PGIC (patients global assessment of change) category of "slightly better". When using NRS changes best associated with "much better", a raw change of -2.0 (AUC 0.909 +- 0.010) and percent change of -33% (AUC 0.956 +- 0.008) were shown.
Salaffi, 2004[335] Test: Numerical Rating Scale Method: Cut-off	Patients were instructed to draw a single mark on a horizontally oriented, graduated 10-cm NRS bounded by the descriptors ''no pain'' at the far left and ''worst possible pain'' at the far right. At a 3 months follow-up, patients were asked by the same data collector to repeat the measurement on an NRS, without access to any previous NRS ratings. The NRS score at the end of follow-up minus the score at baseline examination prior to the intervention defined the effect measured by NRS.	For NRS baseline score >7 to 10 , a raw change of -2.8 (AUC 0.916+-0.011) and percent change of -40% (AUC 0.904 +- 0.012) were optimal cut-off point associated with the PGIC (patients' global assessment of change) category of "much better". When using NRS changes best associated with "slightly better", if the baseline NRS score is >7 to 10, a raw change of -1.6 (AUC 0.838 +- 0.009) and percent change of -21% (AUC 0.846 +- 0.009) were shown.
Salaffi, 2004[335] Test: Numerical Rating Scale Method: Cut-off	Patients were instructed to draw a single mark on a horizontally oriented, graduated 10-cm NRS bounded by the descriptors ''no pain'' at the far left and ''worst possible pain'' at the far right. At a 3 months follow-up, patients were asked by the same data collector to repeat the measurement on an NRS, without access to any previous NRS ratings. The NRS score at the end of follow-up minus the score at baseline examination prior to the intervention defined the effect measured by NRS.	If the NRS baseline score is <=4, a raw change of -0.7 (AUC 0.968+-0.013) and percent change of -17% (AUC 0.971 +- 0.013) were optimal cut-off point associated with the PGIC (patients' global assessment of change) category of "much better". When using NRS changes best associated with "slightly better", if the baseline NRS score is <=4, a raw change of -0.6 (AUC 0.795 +- 0.008) and percent change of -10.5% (AUC 0.804 +- 0.011) were shown.
Salaffi, 2004[335] Test: Numerical Rating Scale Method: Cut-off	Patients were instructed to draw a single mark on a horizontally oriented, graduated 10-cm NRS bounded by the descriptors ''no pain'' at the far left and ''worst possible pain'' at the far right. At a 3 months follow-up, patients were asked by the same data collector to repeat the measurement on an NRS, without access to any previous NRS ratings. The NRS score at the end of follow-up minus the score at baseline examination prior to the intervention defined the effect measured by NRS.	If the NRS baseline score is >4 to <=7, a raw change of -2.1 (AUC 0.941+-0.012) and percent change of -32.7% (AUC 0.883+-0.931) were optimal cut-off point associated with the PGIC (patients' global assessment of change) category of "much better". When using NRS changes best associated with "slightly better", if the baseline NRS score is >4 and <=7, a raw change of -1 (AUC 0.878 +- 0.904) and percent change of -16.9% (AUC 0.844 +- 0.014) were shown.
Salaffi, 2004[335] Test: Numerical Rating Scale	Patients were instructed to draw a single mark on a horizontally oriented, graduated 10-cm NRS bounded by the	MCID is defined as the difference in mean change from baseline in NRS between patients with no response

Appendix Table F57. Minimal clinically important differences in the tools to assess outcomes in patients with knee OA (continued)

Author, year Test Worst to best Method	Reference	Definition of minimally clinically important differences
Method: Distribution	descriptors ‘‘no pain’’ at the far left and ‘‘worst possible pain’’ at the far right. At a 3 months follow-up, patients were asked by the same data collector to repeat the measurement on an NRS, without access to any previous NRS ratings. The NRS score at the end of follow-up minus the score at baseline examination prior to the intervention defined the effect measured by NRS.	therapy ("no change", "slightly worse" and "much worse") and patients with next higher level of response (slightly better).
Salaffi, 2004[335] Test: Patient's Global Assessment of Change Method: Anchor	The ‘‘transition questionnaire’’ investigated the current pain intensity, related to the rheumatic disease at the 3 month follow-up compared to the pain intensity 3 months earlier (at baseline examination) by the question: Please imagine how you would have described your pain intensity three months ago. How do you feel today as compared to three months earlier as far as your musculoskeletal pain is concerned? The possible replies were ‘‘much better’’, ‘‘slightly better’’, ‘‘no change’’, ‘‘slightly worse’’, or ‘‘much worse’’ (Jaeschke et al., 1989). This five-point categorical questionnaire was proposed to the patient at the 3 months follow-up and assessed the change of pain in written format	A one unit difference at the lowest end of the PGIC ("slightly better") was used to define MCID as it reflects the minimum and lowest degree of improvement that could be detected.
Bellamy, 2001[431] Test: ROM (Range of Motion) Method: Anchor	Delphi exercise to define minimum clinically important differences	The MCID for range of movement =15
Kennedy, 2005[345] Test: Six Minute Walk Test Distance Method: Anchor	At 3 points, during the performance of the 6MWT, patients were instructed to cover as much distance as possible during the 6 minute time frame with opportunity to stop and rest if required.	The MDC_{90} (minimal detectable change at the 90% confidence interval) was at 61.34m
Mangione, 2010[433] Test: Six-Minute Walk Test Method: Anchor	At 2 times patients were tested: Each participant was instructed to cover as much distance as possible in 6 minutes.	The MDC_{90} (minimal detectable change with a 90% confidence level)was 65m
Mangione, 2010[433] Test: Short Physical Performance Battery Method: Anchor	At 2 times patients were tested for 3 timed tests: chair rise for 5 repetitions, without the use of arms; standing balance in positions of side-byside stance, semi-tandem stance, and full tandem stance; and walking speed over a 2,44-m (8-ft) course.	The MDC_{90} (minimal detectable change with a 90% confidence level)was 2.9 points
Kennedy, 2005[345] Test: Stair Time Method: Anchor	At 3 points, patients had to ascend and descend 9 stairs (step height, 20 cm) in their usual manner, and at a safe and comfortable pace.	The MDC_{90} (minimal detectable change at the 90% confidence interval) was at 5.49s

Appendix Table F57. Minimal clinically important differences in the tools to assess outcomes in patients with knee OA (continued)

Author, year Test Worst to best Method	Reference	Definition of minimally clinically important differences
Bellamy, 2001[431] Test: Time between arising and improvement in stiffness Method: Anchor	Delphi exercise to define minimum clinically important differences	The MCID for duration of morning stiffness (measured from the time between arising and improvement in stiffness) =0.23
Bellamy, 2001[431] Test: Clock time from awaking to when stiffness begins to wear off Method: Anchor	Delphi exercise to define minimum clinically important differences	The MCID for duration of morning stiffness (measured from the clock time from awaking to when stiffness begins to wear off) =20
Bellamy, 2001[431] Test: Time between arising and when patient is limber Method: Anchor	Delphi exercise to define minimum clinically important differences	The MCID for duration of morning stiffness (measured from the time between awakening and when patient is limber) =0.3
Bellamy, 2001[431] Test: Swelling Method: Anchor	Delphi exercise to define minimum clinically important differences	The MCID for soft tissue swelling =1.50
Kennedy, 2005[345] Test: Timed Up and Go Time (TUG) Method: Anchor	At 3 points, for the TUG test, patients were required to rise from a standard arm chair, walk at a safe and comfortable pace to a tape mark 3-m away, then return to a sitting position in the chair	The MDC_{90} (minimal detectable change at the 90% confidence interval) was at 2.49s
Ren, 1999[353] Test: Short form Arthritis Impact Measurement Scale 2 (AIMS2-SF) Method: Distribution	One generic and one disease -specific health measure. Generic health is measured by a global health question, i.e. patients were asked "In general would you say that your health now is excellent, good, fair, or poor?". Disease-specific health was measured by asking the patient how much of their health problems were due to arthritis, due partly to arthritis, or due to other diseases.	Patients who had mild symptom severity score on AIMS2-SF (score >=68) had a mean core of 8.2 on the upper body limitations domain; 8.2 on the lower body limitations domain; 6.5 on the affect domain; and 6.1 on the social function domain
Ren, 1999[353] Test: Short form Arthritis Impact Measurement Scale 2 Method: Distribution	One generic and one disease -specific health measure. Generic health is measured by a global health question, i.e. patients were asked "In general would you say that your health now is excellent, good, fair, or poor?". Disease-specific health was measured by asking the patient how much of their health problems were due to arthritis, due partly to arthritis, or due to other diseases.	Patients who had moderate symptom severity score on AIMS2-SF (score 43-67) had a mean score of 7.7 on the upper body limitations domain; 7.7 on the lower body limitations domain; 5.8 on the affect domain; and 5.5 on the social function domain
Ren, 1999[353] Test: Short form Arthritis Impact Measurement Scale 2	One generic and one disease -specific health measure. Generic health is measured by a global health question, i.e. patients were asked "In general would you say that your	Patients who had severe symptom severity score on AIMS2-SF (score <=42) had a mean score of 6.6 on the upper body limitations domain; 6.0 on the lower body

Appendix Table F57. Minimal clinically important differences in the tools to assess outcomes in patients with knee OA (continued)

Author, year Test Worst to best Method	Reference	Definition of minimally clinically important differences
Method: Distribution	health now is excellent, good, fair, or poor?". Disease-specific health was measured by asking the patient how much of their health problems were due to arthritis, due partly to arthritis, or due to other diseases.	limitations domain; 4.3 on the affect domain; and 4.4 on the social function domain
Lequesne, 1997[435] Test: Algofunctional index for osteoarthritis Method: Anchor	Different scores of the index	1-4 points in the scores for the algofuncitional index corresponds to minor handicap; 5-7 points =moderate handicap; 8-10 points =severe handicap; 11-13 points=very severe handicap and 14 points indicate extremely severe handicap
Ornetti, 2011[406] Test: Patient NRS: "What is the degree of difficulty you have experienced for the daily activities during the last 48 hours due to your (knee or hip) OA" Method: PASS Worst to best: 10 to 0	All patients had to assess their current global state (global PASS) by answering 'Yes' or 'No' in answer to the question 'Taking into account all the activities you have during your daily life, your level of pain, and also your functional impairment, do you consider that your current state is satisfactory?'.	Patients considered their global state as satisfactory if the patient NRS was <3.33 (95% CI: 3.17 to 3.48). Global PASS is defined as the value of measurement beyond which patients consider their global state as satisfactory.
Ornetti, 2011[406] Test: Physician NRS: Physician's Estimate of functional impairment of each patient Method: PASS Worst to best: 10 to 0	All patients had to assess their current global state (global PASS) by answering 'Yes' or 'No' in answer to the question 'Taking into account all the activities you have during your daily life, your level of pain, and also your functional impairment, do you consider that your current state is satisfactory?'.	Patients considered their global state as satisfactory if the physician NRS was <3.07 (95% CI: 2.94 to 3.21).Global PASS is defined as the value of measurement beyond which patients consider their global state as satisfactory.
Ornetti, 2011[406] Test: Patient NRS: "What is the degree of difficulty you have experienced for the daily activities during the last 48 hours due to your (knee or hip) OA" Method: PASS Worst to best: 10 to 0	PASS for functional state :The PASS of each function scale was defined as the 75th centile of the absolute score among patients who considered their final state as satisfactory	Patients considered their functional state as satisfactory if the patient NRS was <3.3 (95% CI: 3.16 to 3.45).Function PASS is defined as the value of measurement beyond which patients consider their functional state as satisfactory.
Ornetti, 2011[406] Test: Physician NRS: Physician's Estimate of functional impairment of each patient Method: PASS Worst to best: 10 to 0	PASS for functional state :The PASS of each function scale was defined as the 75th centile of the absolute score among patients who considered their final state as satisfactory	Patients considered their functional state as satisfactory if the physician NRS was <3.03 (95% CI: 2.90 to 3.16).Function PASS is defined as the value of measurement beyond which patients consider their functional state as satisfactory.
Ornetti, 2011[406] Test: Patient NRS: "What is the degree of difficulty you have	All patients had to assess their degree of improvement of global state (global MCII), on a three-point Likert scale (worsened function, no change, improved function). Among	Patients considered their global state as improved for a change of patient NRS >-2.72 (95% CI: -2.92 to -2.51). Global MCII is defined as the smallest change in global

Appendix Table F57. Minimal clinically important differences in the tools to assess outcomes in patients with knee OA (continued)

Author, year Test Worst to best Method	Reference	Definition of minimally clinically important differences
experienced for the daily activities during the last 48 hours due to your (knee or hip) OA" Method: MCII Worst to best: 10 to 0	patients who improved, the degree of improvement was scored on a four-point Likert scale (poor, fair, good, excellent)	state that signifies an important improvement in a patient's symptoms.
Ornetti, 2011[406] Test: Physician NRS: Physician's Estimate of functional impairment of each patient Method: MCII Worst to best: 10 to 0	All patients had to assess their degree of improvement of global state (global MCII), on a three-point Likert scale (worsened function, no change, improved function). Among patients who improved, the degree of improvement was scored on a four-point Likert scale (poor, fair, good, excellent)	Patients considered their global state as improved for a change of physician NRS >-2.50 (95% CI: -2.68 to -2.32).Global MCII is defined as the smallest change in global state that signifies an important improvement in a patient's symptoms.
Ornetti, 2011[406] Test: Patient NRS: "What is the degree of difficulty you have experienced for the daily activities during the last 48 hours due to your (knee or hip) OA" Method: MCII Worst to best: 10 to 0	MCII for functional state: The MCII of each function scale was defined as the 75th centile of the absolute change in score among patients whose final evaluation of response to NSAID was improved (improvement good or excellent).	Patients considered their functional state as improved for a change of patient NRS >-2.79 (95% CI: -3.01 to -2.57).Functional MCII is defined as the smallest change in functional state that signifies an important improvement in a patient's symptoms.
Ornetti, 2011[406] Test: Physician NRS: Physician's Estimate of functional impairment of each patient Method: MCII Worst to best: 10 to 0	MCII for functional state: The MCII of each function scale was defined as the 75th centile of the absolute change in score among patients whose final evaluation of response to NSAID was improved (improvement good or excellent).	Patients considered their functional state as improved for a change of physician NRS >-2.55 (95% CI: -2.73 to -2.38).Functional MCII is defined as the smallest change in functional state that signifies an important improvement in a patient's symptoms.
Mangione, 2010[433] Test: Timed "Up & Go" test Method: Anchor	At 2 times patients were tested: Each participant was asked to walk at his or her "normal" speed across the mat for 2 trials and then as "fast as possible" for 2 trials. The 2 trials of fast speed were averaged each session.	The MDC_{90} (minimal detectable change with a 90% confidence level)was 4.0s

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