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Appendix A. Expert Panel and Peer Reviewers

Technical Expert Panel Members

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Pediatric/Adolescent Psychiatrist
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Peer Reviewers

TBA

Appendix B. Literature Search Strings

Table B-1. MEDLINE – Ovid Version
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Table B-1: MEDLINE – OVID Version

OvidSP_MEDLINE 1950 to April Week 4 2010	Searched: 22Apr10 Results: 3309

1. exp Child Development Disorders, Pervasive/
2. Child behavior disorders/
3. (child adj1 development adj1 disorder*).tw.
4. Asperger Syndrome/
5. (asperger* adj1 (syndrome or disorder)).tw.
6. Autistic Disorder/
7. (autism* or (autistic adj1 disorder*) or kanner* syndrome).tw.
8. Rett Syndrome/
9. (((rett or retts) adj1 (sydrome or disorder)) or cerebroatrophic hyperammonemia*).tw.
10. Schizophrenia, Childhood/
11. (child* adj2 schizophrenia*).tw.
12. aggression/
13. aggression.tw.
14. psychomotor agitation/
15. ((psychomotor adj1 (agitation or restlessness or hyperactivity or excitement)) or akathisia).tw.
16. "sleep initiation and maintenance disorders"/
17. ((sleep adj2 disorder*) or insomnia*).tw.
18. mood disorders/
19. ((mood or affective) adj1 disorder*).tw.
20. impulsive behavior/
21. (impulsive adj1 behavio?r).tw.
22. borderline personality disorder/
23. (borderline adj1 personality adj1 disorder*).tw.
24. personality disorders/
25. (affective adj2 dysregulation).tw.
26. (($behavioral adj2 dyscontrol) or (impulsive-behavioral adj2 deregulation)).tw.
27. (mood adj2 lability).tw.
28. (irritable or irritability).tw.
29. Self-Injurious Behavior/
30. (self-injurious behavio?r or self-mutilating behavio?r or self mutilation or self-desctructive behavio?r or deliberate self-harm or parasuicide).tw.
31. antisocial personality disorder/
32. "Attention Deficit and Disruptive Behavior Disorders"/
33. Attention Deficit Disorder with Hyperactivity/
34. ((attention adj deficit adj disorder) or hyperkinetic syndrome or adhd).tw.
35. Conduct Disorder/
36. (conduct adj disorder*).tw.
37. Childhood Disintegrative Disorder.tw.
38. "Pervasive Developmental Disorder Not Otherwise Specified".tw.
39. (atypical adj1 autism).tw.
40. Oppositional Defiant Disorder.tw.
41. "Disruptive Behavior Disorder Not Otherwise Specified".tw.
42. Schizophrenia/
43. Schizophrenia, Catatonic/
44. Schizophrenia, Disorganized/
45. Schizophrenia, Paranoid/
46. ((catatonic or disorganized or paranoid) adj schizophrenia).tw.
47. Psychotic Disorders/
48. ((Psychotic or schizoaffective or schizophreniform) adj disorder).tw.
49. (brief reactive psychos?s or psychoses).tw.
50. first episode schizophrenia.tw.
51. (prodrom$ and schizophren$).tw.
52. Schizotypal Personality Disorder/
53. (schizotypal personality disorder or ((borderline or pseudoneurotic or pseudopsychopathic or incipient or latent) adj2 schizophrenia)).tw.
54. Bipolar Disorder/
55. (((bipolar or manic) adj (disorder or psychos?s or depression)) or mania*).tw.
56. "Depressive Disorder, Major"/ and (refractory or chronic or resistant).ti,ab.
57. Depression/ and (refractory or chronic or resistant).ti,ab.

58. Depressive Disorder/
59. ((depressive adj (disorder or neuroses or syndrome*)) or ((endogenous or neurotic or unipolar) adj depression*)).tw.
60. Obsessive-Compulsive Disorder/
61. (OCD or anankastic personalit* or (obsessive compulsive adj (disorder* or neuros*)) or (obsessive-compulsive adj (disorder* or neuros*))).tw.
62. exp anorexia nervosa/
63. ((anorexia adj nervosa*) or anorexia*).tw.
64. exp stress disorders, post-traumatic/
65. ((chronic or acute or delayed onset) and (post-traumatic adj stress adj disorder*)).tw.
66. ((posttraumatic or post-traumatic or post traumatic) adj (neuroses or disorder)).tw.
67. ptsd.tw.
68. exp tourette syndrome/
69. ($tourette* adj (syndrome or disorder or disease)).tw.
70. (tic adj disorder).tw.
71. (multiple adj motor adj vocal adj tic adj disorder).tw.
72. or/1-71
73. exp Antipsychotic Agents/
74. exp Tranquilizing Agents/
75. ((first or 1st) adj generation adj antipsychotic*).tw.
76. azaperone/
77. 1649-18-9.rn.
78. (Atsaperoni or Azaperon or Azaperona or Azaperone or Azaperonum or Eucalmyl or Fluoperidol or NSC 170976 or R 1929 or R-1929 or Sedaperone or Stresnil or Suicalm).mp.
79. Butyrophenones/ad, to, tu, ct, po, ae
80. Clopenthixol/
81. 982-24-1.rn.
82. (Chlorpenthixol or Clopenthixol or Clopenthixolum or Sordinol or Zuclopenthixol).mp.
83. chlorpromazine/
84. 50-53-3.rn.
85. (Aminazin or Aminazine or Ampliactil or BC 135 or Chlorpromazine or Chlorpromazinum or Clorpromazina or Chlor-Promanyl or Chlorpromados or Chlorderazin or Chlorpromazin or Contomin or Elmarin or Esmind or Fenactil or Fenaktyl or HL 5746 or Largactil or Largactilothiazine or Megaphen or Largactyl or Klooripromatsiini or Klorpromazin or 6 Copin or Trinicalm Forte or Diminex Balsamico Juven Tos or Largatrex or Phenactyl or Proma or Promactil or Promazil or Prozil or Psychozine or Sanpron or Thorazine or Torazina or Wintermin).mp.
86. Chlorprothixene/
87. 113-59-7.rn.
88. (Chlorprothixene or Chlorprothixen or Chlorprothixenum or Chlorprotixen or Chlorprotixene or Clorprotisene or Clorprotixeno or Laractan or Paxyl or Rentovet or Taractan or Tarasan or Traquilan or Trictal or Truxal or Truxaletten or Truxil or Vetacalm).mp.
89. Dibenzoxazepines/ad, to, tu, ct, po, ae
90. Droperidol/
91. 548-73-2.rn.
92. (Dehydrobenzoperidol or Dehydrobenzperidol or Deidrobenzperidolo or Dridol or Droleptan or Droperidol or Droperidoli or Droperidolis or Droperidolum or Disifelit or Halkan or Inapsin or Inapsine or Inopsin or Thalamonal or Nilperidol or Properidol or Sintodril or Vetkalm).mp.
93. Flupenthixol/
94. 2709-56-0.rn.
95. (Depixol or Emergil or Fluanxol or Flupenthixol or Flupentixol or Flupentixolum or Fluxanxol or Siplaril or Siplarol).mp.
96. fluphenazine/
97. 69-23-8.rn.
98. (Dapotum or Elinol or Flufenazina or Fluofenazine or Fluphenazine or Fluorphenazine or Fluphenazinum or Ftorphenazine or Moditen or Pacinol or Sevinol or Siqualon or Triflumethazine or Valamina or Vespazine).mp.
99. haloperidol/
100. 52-86-8.rn.
101. (Aldo or Aloperidin or Aloperidol or Aloperidolo or Brootopon or Dozic or Einalon S or Eukystol or Fortunan or Galoperidol or Haldol or Halojust or Halopal or Haloperidol or Haloperidoli or Haloperidolis or Haloperidolu or Halopoidol or Serenace or Halopidol or Haloper or Halperon or Keselan or Lealgin or Linton or Mixidol or Peluces or Pernox or Serenace or Serenefl or Sernas or Sernel or Serenase or Ulcolind or Uliolind or Vesalium).mp.
102. Indoles/ad, to, tu, ct, po, ae
103. Lithium carbonate/
104. 554-13-2.rn.
105. (Camcolit or Candamide or Carbolith or Carbonic acid lithium salt or dilithium salt or Eskalith or Eutimin or

Hypnorex or Limas or Lithium or Liskonum or Litard or Lithane or Lithea or Lithicarb or Lithinate or Lithionate or Lithotabs or Liticar or Manialith or Maniprex or Micalith or Neurolepsin or Pfi-lithium or Phasal or Plenur or Priadel or Quilonorm or Teralithe).mp.
106. loxapine/
107. 1977-10-2.rn.
108. (Cloxazepine or CL 62362 or Dibenzacepin or Dibenzoazepine or Hydrofluoride 3170 or LW 3170 or Lossapina or Loksapiini or Loxapin or Loxapina or Loxapine or Loxapinum or Oxilapine or Loxapac or SUM 3170 or Loxitane or Desconex).mp.
109. Methiothepin/
110. 20229-30-5.rn.
111. (Methiothepin or metitepine or Methiothepine or Methiothepin maleate or Metitepina or Metitepinum).mp.
112. Methotrimeprazine/
113. 60-99-1.rn.
114. (Dedoran or Hirnamin or Hirnamine or Levomepromazine or Levomepromazin or Levomepromazina or Levopromazioni or Levomepromazinum or Levoprome or Levotomin or Mepromazine or Methotrimeprazine or Neurocil or Neozine or Nirvan or Nocinan or Momizan or Nozinane or Sinogan or Levolam or Nozinan or Sinogan or Tisercin or Veractil).mp.
115. molindone/
116. 7416-34-4.rn.
117. (Molindona or Molindone or Molindonum).mp.
118. Penfluridol/
119. 26864-56-2.rn.
120. (Penfluridol or Penfluridolum or Semap).mp.
121. Perazine/
122. 84-97-9.rn.
123. (Pemazine Dimalonate or Peragal or Perazin or Perazine or Perazinum or Taxilan).mp.
124. perphenazine/
125. 58-39-9.rn.
126. (Chlorperphenazine or Chlorpiprazine or Decentan or Emesinal or Etaperazin or Etaperazine or Ethaperazine or Etrafon or F-mon or Fentazin or Mutabon or Perfenazin or Perfenazina or Perfenazinas or Perfenazine or Perphenazin or Perphenazine or Perfenazyna or Perphenazinum or Pertriptyl or Sch 3940 or Thilatazin or Tranquisan or Trifaron or Trilafon or Trilifan or Triptafen or Triphenot or Triavil).mp.
127. Phenothiazines/ad, to, tu, ct, po, ae [Administration & Dosage, Toxicity, Therapeutic Use, Contraindications, Poisoning, Adverse Effects]
128. Pimozide/
129. 2062-78-4.rn.
130. (Antalon or Opiran or Orap or Pimotsidi or Pimozid or Pimozida or Pimozidas or Pimozide or Pimozidum or Pimozyd).mp.
131. Prochlorperazine/
132. 58-38-8.rn.
133. (Apo-Prochlorazine or Capazine or Chlormeprazine or Compazine or Compro or Dhaperazine or Emelent or Kronocin or Nipodal or Novamin or Nu-Prochlor or Meterazin or Meterazine or Mitil or Prochlorpemazine or Prochlorperazinum or Proclorperazina or Prochlorperazine or Proklooriperatsiini or Proklorperazin or Prorazin or Phenothiazine or Seratil or Stemetil or Tementil or Temetid).mp.
134. Promazine/
135. 58-40-2.rn.
136. (Ampazine or Berophen or Esparin or Liranol or Neo-Hibernex or Prazin or Sparine or Sinophenin or Promazine hydrochloride or Protactyl or Promatsiini or Promazin or Promazine or Promazinum or Propazinum or Prazine or Promwill or Protactyl or Romtiazin or Sinophenin or Talofen or Talofen or Tomil or Verophen).mp.
137. Raclopride/
138. 84225-95-6.rn.
139. (raclopride or racloprida or raclopridum or rakloprid or rakloprid).mp.
140. Spiperone/
141. 749-02-0.rn.
142. (E 525 or Espiperona or Spiperone or Spiperonum or Spiroperidol or Spiropitan).mp.
143. thioridazine/
144. 50-52-2.rn.
145. (Aldazine or Dazithin or Detril or Elperil or Mallorol or Malloryl or Melleril or Meleril or Mellaril or Mellerets or Mellerette or Melleretten or Melleril or Sonapax or Thioridazin or Thioridazine or Thioridazinum or Tioridatsiini or Tioridazin or Tioridazina or Tioridazinas).mp.
146. Thiothixene/
147. 5591-45-7.rn.
148. (Navane or Navaron or Orbinamon or Thiothixene or Tiotikseeni or Tiotixen or Tiotixeno or Tiotixenum or Thixit or Tiotixene).mp.
149. Thioxanthenes/ad, to, tu, ct, po, ae

150. Tiapride/
151. 51012-32-9.rn.
152. (Betaprid or Delpral or Doparid or Etiles or Equilium or Italiprid or Luxoben or Normagit or Porfanil or Sereprid or Tiacob or Tiapridal or Tiapride).mp.
153. Trifluperidol/
154. 749-13-3.rn.
155. (Flumoperone or Psicoperidol or Psychoperidol or Trifluperidol or Trifluperidoli or Trifluperidolum or Triperidol or Trisedil or Trisedyl).mp.
156. Trifluoperazine/
157. 117-89-5.rn.
158. (Cuait D or Cuait N or eskazine or flupazine or Jatrosom or Jalonac or Parstelin or Parmodalin or stelazine or Stelabid or Stelapar or Sycot or Terfluzine or Trifluoperazine or Trifluoperazini Hydrochloridum or triftazin or Trinicalm Forte or Trinicalm Plus).mp.
159. Triflupromazine/
160. 146-54-3.rn.
161. (Adazine or Fluopromazine or Phenothiazine or Psyquil or Siquil or Triflupromazina or Triflupromazine or Trifluopromazine or Vesprin or Vetame).mp.
162. Zuclopenthixol/
163. 53772-83-1.rn.
164. (Cisordinol or Clopixol or Ciatyl-Z or Clopenthixol or Clopentixol or Sedanxol or Zuclopenthixolum or Zuclopentixol or Zuclopenthixol or Zuklopentixol).mp.
165. or/73-164
166. (atypical adj antipsychotic*).tw.
167. ((second or 2nd) adj generation adj antipsychotic*).tw.
168. ((third or 3rd) adj generation adj antipsychotic*).tw.
169. Amisulpride.tw.
170. 71675-85-9.rn.
171. (Aminosultopride or Amisulprida or Amisulpridum or Solian or Sulpitac).mp.
172. aripiprazole.tw.
173. 129722-12-9.rn.
174. (Abilitat or Abilify or Aripiprazole or Discmelt or OPC 31 or OPC 14597).mp.
175. Asenapine.tw.
176. 65576-45-6.rn.
177. EINECS 265-829-4.mp.
178. Blonanserin.tw.
179. 132810-10-7.rn.
180. AD 5423.mp.
181. Clotiapine.tw.
182. 2058-52-8.rn.
183. (Clothiapine or Clotiapina or Clotiapinum or Dibenzothiazepine or Etumina or Etumine or Entumin or Etomine or Entumine or HF 2159 or LW 2159 or "BRN 0568276").mp.
184. clozapine/
185. 5786-21-0.rn.
186. (Clozapin or Clozapina or Clozapine or Clozapinum or Clorazil or Clozaril or FazaClo or Leponex or LX 100-129 or Zaponex).mp.
187. Diazepine.tw.
188. 12688-68-5.rn.
189. Dibenzazepines/ad, to, tu, ct, po, ae
190. Dibenzothiazepines/ct, ad, to, tu, ae, po
191. Fluvoxamine/
192. (54739-18-3 or 61718-82-9).rn.
193. (dumirox or DU23000 or Fluvoxamina or fluvoxamine or Fluvoaminum or Fluvoxamine Maleate or Fevarin or Luvox or SME 3110).mp.
194. Iloperidone.tw.
195. 133454-47-4.rn.
196. (Fanapt or HP 873 or Zomaril).mp.
197. Isoxazoles/ad, to, tu, ct, po, ae
198. Mesoridazine/
199. 5588-33-0.rn.
200. (Calodal or Lidanar or Lidanil or Mesoridazina or Mesoridazine or Mesoridazinum or Serentil or THD-2-SO).mp.
201. mosapramine.tw.
202. 89419-40-9.rn.
203. (Clospipramine or Cremin or Mosapramina).mp.
204. olanzapine.tw.

205. 132539-06-1.rn.
206. (Zyprexa or Olantsapiini or Olanzapin or Olanzapina or Olanzapinum or Olansek or Zalasta or Zypadhera).mp.
207. paliperidone.tw.
208. 144598-75-4.rn.
209. (9-Hydroxyrisperidone or Invega or R 76477 or RO76477).mp.
210. Perospirone.tw.
211. 150915-41-6.rn.
212. (lullan or perospirone hydrochloride).mp.
213. Piperidines/ad, to, tu, ct, po, ae
214. Piperazines/ad, tu, to, ct, po, ae
215. Pirenzepine/tu, ad, to, ct, po, ae
216. Pyrimidinones/ad, to, tu, ct, po, ae
217. quetiapine.tw.
218. 111974-69-7.rn.
219. (Co-Quetiapine or HSDB 7557 or Seroquel).mp.
220. Quinolones/to, po, ct, ad, tu, ae
221. Remoxipride/
222. 80125-14-0.rn.
223. (FLA 731 or Remoxiprida or Remoxipride or Remoxipridum).mp.
224. Risperidone/
225. 106266-06-2.rn.
226. (Apexidone or Psychodal or Risperdal or Risperidona or Risperidone or Risperidonum or Risperin or Risperilept or Rispolin or Spiron).mp.
227. Sertindole.tw.
228. 106516-24-9.rn.
229. (Lu 23-174 or Sertindol or Serdolect or Sertindolum).mp.
230. Sulpiride/
231. 15676-16-1.rn.
232. (Abilit or Aiglonyl or Alimoral or Calmoflorine or Championyl or Darleton or Desmenat or Dobren or Dogmatil or Dogmatyl or Dolmatil or Eclorion or Eglonil or Eglonyl or Enimon or Equilid or Eusulpid or Fardalan or Fidelan or Guastil or Isnamide or Kylistro or Lisopiride or Mariastel or Meresa or Miradol or Mirbanil or Neogama or Normum or Nufarol or Omiryl or Omperan or Ozoderpin or Psicocen or Pyrkappl or Sernevin or Splotin or Stamonevrol or Sulparex or Sulpirid or Sulpirida or Sulpiride or Sulpiridum or Sulpor or Suprium or Sulpyrid or Trilan or Valirem or Zemorcon).mp.
233. Thiazoles/ad, th, ct, po, to, ae
234. Zotepine.tw.
235. 26615-21-4.rn.
236. (Lodepin or Nipolept or Zotepina or Zotepinum or Zoleptil).mp.
237. ziprasidone.tw.
238. 146939-27-7.rn.
239. Zeldox.mp.
240. or/73-74,166-239
241. or/165,240
242. and/72,241
243. randomized controlled trial.pt.
244. controlled clinical trial.pt.
245. randomi?ed.ab.
246. placebo.ab.
247. drug therapy.fs.
248. randomly.ab.
249. trial.ab.
250. groups.ab.
251. or/243-250
252. (humans not (animals and humans)).sh,hw.
253. 251 and 252
254. cohort studies/
255. follow-up studies/
256. longitudinal studies/
257. prospective studies/
258. Retrospective Studies/
259. Case-Control Studies/
260. (cohort$ or longitudinal or retrospective or prospective or follow-up or case-control).tw.
261. or/254-260
262. 261 and 252

263. exp infant/
264. exp child/
265. exp adolescent/
266. exp pediatrics/
267. ($child$ or adolescen$ or p*ediatric$).tw.
268. or/263-267
269. and/242,253,268
270. and/242,262,268
271. and/242,253
272. and/242,262
273. or/271-272
274. limit 273 to "all child (0 to 18 years)"
275. or/269-270
276. or/274-275
277. limit 276 to (english language and yr="1987 -Current")
278. limit 273 to "young adult (19 to 24 years)"
279. exp Young Adult/
280. (young adj adult*).tw.
281. ((college or university) adj2 (age or student*)).tw.
282. students/
283. or/279-282
284. and/242,253,283
285. and/242,262,283
286. or/284-285
287. or/278,286
288. limit 287 to (english language and yr="1987 -Current")
289. 277 or 288
290. (editorial or letter or comment).pt. or case reports/
291. 289 not 290

Table B-2. EMBASE –Ovid Version

OvidSP_-EMBASE 1980 to April Week 3 2010	Searched: 12Feb10 Results: 3553
1. autism/ 2. infantile autism/ 3. (autism* or (autistic adj1 disorder*) or kanner* syndrome).tw. 4. asperger syndrome/ 5. (asperger* adj1 (syndrome or disorder)).tw. 6. childhood disintegrative disorder/ 7. (child adj1 development adj1 disorder*).tw. 8. "pervasive developmental disorder not otherwise specified"/ 9. rett syndrome/ 10. (((rett or retts) adj1 (sydrome or disorder)) or cerebroatrophic hyperammonemia*).tw. 11. atypical autism.mp. 12. behavior disorder/ 13. disruptive behavior/ 14. disruptive behavio$ disorder?.mp. 15. conduct disorder/ 16. (conduct adj disorder*).tw. 17. oppositional defiant disorder/ 18. "disruptive behavior disorder not otherwise specified".mp. 19. "pervasive developmental disorder?".mp. 20. schizophrenia/ 21. catatonic schizophrenia/ 22. hebephrenia/ 23. latent schizophrenia/ 24. negative syndrome/ 25. paranoid schizophrenia/ 26. positive syndrome/ 27. residual schizophrenia/ 28. schizoaffective psychosis/ 29. schizophrenic reaction/ 30. schizophreniform disorder/	

31. simple schizophrenia/
32. first episode schizophrenia.mp.
33. prodromal schizophrenia/
34. ((catatonic or disorganized or paranoid) adj schizophrenia).tw.
35. psychosis/
36. schizotypal personality disorder/
37. ((Psychotic or schizoaffective or schizophreniform) adj disorder).tw.
38. (schizotypal personality disorder or ((borderline or pseudoneurotic or pseudopsychopathic or incipient or latent) adj2 schizophrenia)).tw.
39. bipolar disorder/
40. bipolar depression/
41. bipolar i disorder/
42. bipolar ii disorder/
43. bipolar mania/
44. cyclothymia/
45. manic depressive psychosis/
46. "mixed mania and depression"/
47. rapid cycling bipolar disorder/
48. (((bipolar or manic) adj (disorder or psychos?s or depression)) or mania*).tw.
49. depression/ and (refractory or chronic or resistant).ti,ab.
50. major depression/ and (refractory or chronic or resistant).ti,ab.
51. ((refractory or chronic or resistant) adj3 depression).mp.
52. ((depressive adj (disorder or neuroses or syndrome*)) or ((endogenous or neurotic or unipolar) adj depression*)).tw.
53. obsessive compulsive disorder/
54. (OCD or anankastic personalit* or (obsessive compulsive adj (disorder* or neuros*)) or (obsessive-compulsive adj (disorder* or neuros*))).tw.
55. exp anorexia nervosa/
56. (anorexia nervosa* or anorexia*).tw.
57. exp post traumatic stress disorder/
58. (post-traumatic adj stress adj disorder*).tw.
59. (posttraumatic adj stress adj disorder*).tw.
60. ((post-traumatic or posttraumatic) adj neuroses).tw.
61. (ptsd or (post adj traumatic adj neuroses)).tw.
62. exp gilles de la Tourette syndrome/
63. (de adj la adj tourette adj disease).tw.
64. (gilles adj de adj la adj tourette adj disease).tw.
65. (tourette adj disease).tw.
66. (tourette adj syndrome).tw.
67. exp tic/
68. (tic adj disorder*).tw.
69. (($behavioral adj2 dyscontrol) or (impulsive-behavioral adj2 deregulation)).tw.
70. borderline personality disorder/
71. (borderline adj1 personality adj1 disorder*).tw.
72. (affective adj2 dysregulation).tw.
73. (mood adj2 lability).tw.
74. (irritable or irritability).tw.
75. antisocial personality disorder/
76. aggression/
77. aggression.tw.
78. psychomotor agitation/
79. ((psychomotor adj1 (agitation or restlessness or hyperactivity or excitement)) or akathisia).tw.
80. "sleep initiation and maintenance disorders"/
81. ((sleep adj2 disorder*) or insomnia*).tw.
82. mood disorders/
83. ((mood or affective) adj1 disorder*).tw.
84. impulsive behavior/
85. (impulsive adj1 behavio?r).tw.
86. Self-Injurious Behavior/
87. (self-injurious behavio?r or self-mutilating behavio?r or self mutilation or self-destructive behavio?r or deliberate self-harm or parasuicide).tw.
88. or/1-87
89. neuroleptic agent/
90. ((first or 1st) adj generation adj antipsychotic*).tw.
91. Azaperone/
92. 1649-18-9.rn.
93. (Atsaperoni or Azaperon or Azaperona or Azaperone or Azaperonum or Eucalmyl or Fluoperidol or NSC 170976 or R

1929 or R-1929 or Sedaperone or Stresnil or Suicalm).mp.
94. Clopenthixol/
95. 982-24-1.rn.
96. (Chlorpenthixol or Clopenthixol or Clopenthixolum or Sordinol or Zuclopenthixol).mp.
97. chlorpromazine/
98. 50-53-3.rn.
99. (Aminazin or Aminazine or Ampliactil or BC 135 or Chlorpromazine or Chlorpromazinum or Clorpromazina or Chlor-Promanyl or Chlorpromados or Chlorderazin or Chlorpromazin or Contomin or Elmarin or Esmind or Fenactil or Fenaktyl or HL 5746 or Largactil or Largactilothiazine or Megaphen or Largactyl or Klooripromatsiini or Klorpromazin or 6 Copin or Trinicalm Forte or Diminex Balsamico Juven Tos or Largatrex or Phenactyl or Proma or Promactil or Promazil or Prozil or Psychozine or Sanpron or Thorazine or Torazina or Wintermin).mp.
100. Chlorprothixene/
101. 113-59-7.rn.
102. (Chlorprothixene or Chlorprothixen or Chlorprothixenum or Chlorprotixen or Chlorprotixene or Clorprotisene or Clorprotixeno or Laractan or Paxyl or Rentovet or Taractan or Tarasan or Traquilan or Trictal or Truxal or Truxaletten or Truxil or Vetacalm).mp.
103. dibenzoxazepine derivative/
104. Droperidol/
105. 548-73-2.rn.
106. (Dehydrobenzoperidol or Dehydrobenzperidol or Deidrobenzperidolo or Dridol or Droleptan or Droperidol or Droperidoli or Droperidolis or Droperidolum or Disifelit or Halkan or Inapsin or Inapsine or Inopsin or Thalamonal or Nilperidol or Properidol or Sintodril or Vetkalm).mp.
107. flupentixol/
108. 2709-56-0.rn.
109. (Depixol or Emergil or Fluanxol or Flupenthixol or Flupentixol or Flupentixolum or Fluxanxol or Siplaril or Siplarol).mp.
110. fluphenazine/
111. 69-23-8.rn.
112. (Dapotum or Elinol or Flufenazina or Fluofenazine or Fluphenazine or Fluorphenazine or Fluphenazinum or Ftorphenazine or Moditen or Pacinol or Sevinol or Siqualon or Triflumethazine or Valamina or Vespazine).mp.
113. haloperidol/
114. 52-86-8.rn.
115. (Aldo or Aloperidin or Aloperidol or Aloperidolo or Brootopon or Dozic or Einalon S or Eukystol or Fortunan or Galoperidol or Haldol or Halojust or Halopal or Haloperidol or Haloperidoli or Haloperidolis or Haloperidolu or Halopoidol or Serenace or Halopidol or Haloper or Halperon or Keselan or Lealgin or Linton or Mixidol or Peluces or Pernox or Serenace or Serenefl or Sernas or Sernel or Serenase or Ulcolind or Uliolind or Vesalium).mp.
116. indole derivative/
117. levomepromazine/
118. 60-99-1.rn.
119. (Dedoran or Hirnamin or Hirnamine or Levomepromazine or Levomepromazin or Levomepromazina or Levopromazioni or Levomepromazinum or Levoprome or Levotomin or Mepromazine or Methotrimeprazine or Neurocil or Neozine or Nirvan or Nocinan or Momizan or Nozinane or Sinogan or Levolam or Nozinan or Sinogan or Tisercin or Veractil).mp.
120. Lithium/
121. 554-13-2.rn.
122. (Camcolit or Candamide or Carbolith or Carbonic acid lithium salt or dilithium salt or Eskalith or Eutimin or Hypnorex or Limas or Lithium or Liskonum or Litard or Lithane or Lithea or Lithicarb or Lithinate or Lithionate or Lithotabs or Liticar or Manialith or Maniprex or Micalith or Neurolepsin or Pfi-lithium or Phasal or Plenur or Priadel or Quilonorm or Teralithe).mp.
123. loxapine/
124. 1977-10-2.rn.
125. (Cloxazepine or CL 62362 or Dibenzacepin or Dibenzoazepine or Hydrofluoride 3170 or LW 3170 or Lossapina or Loksapiini or Loxapin or Loxapina or Loxapine or Loxapinum or Oxilapine or Loxapac or SUM 3170 or Loxitane or Desconex).mp.
126. Metitepine/
127. 20229-30-5.rn.
128. (Methiothepin or metitepine or Methiothepine or Methiothepin maleate or Metitepina or Metitepinum).mp.
129. molindone/
130. 7416-34-4.rn.
131. (Molindona or Molindone or Molindonum).mp.
132. Penfluridol/
133. 26864-56-2.rn.
134. (Penfluridol or Penfluridolum or Semap).mp.
135. Perazine/
136. 84-97-9.rn.
137. (Pemazine Dimalonate or Peragal or Perazin or Perazine or Perazinum or Taxilan).mp.
138. perphenazine/
139. 58-39-9.rn.
140. (Chlorperphenazine or Chlorpiprazine or Decentan or Emesinal or Etaperazin or Etaperazine or Ethaperazine or

Etrafon or F-mon or Fentazin or Mutabon or Perfenazin or Perfenazina or Perfenazinas or Perfenazine or Perphenazin or Perphenazine or Perfenazyna or Perphenazinum or Pertriptyl or Sch 3940 or Thilatazin or Tranquisan or Trifaron or Trilafon or Trilifan or Triptafen or Triphenot or Triavil).mp.
141. phenothiazine derivative/
142. Pimozide/
143. 2062-78-4.rn.
144. (Antalon or Opiran or Orap or Pimotsidi or Pimozid or Pimozida or Pimozidas or Pimozide or Pimozidum or Pimozyd).mp.
145. Prochlorperazine/
146. 58-38-8.rn.
147. (Apo-Prochlorazine or Capazine or Chlormeprazine or Compazine or Compro or Dhaperazine or Emelent or Kronocin or Nipodal or Novamin or Nu-Prochlor or Meterazin or Meterazine or Mitil or Prochlorpemazine or Prochlorperazinum or Proclorperazina or Prochlorperazine or Proklooriperatsiini or Proklorperazin or Prorazin or Phenothiazine or Seratil or Stemetil or Tementil or Temetid).mp.
148. Promazine/
149. 58-40-2.rn.
150. (Ampazine or Berophen or Esparin or Liranol or Neo-Hibernex or Prazin or Sparine or Sinophenin or Promazine hydrochloride or Protactyl or Promatsiini or Promazin or Promazine or Promazinum or Propazinum or Prazine or Promwill or Protactyl or Romtiazin or Sinophenin or Talofen or Talofen or Tomil or Verophen).mp.
151. Raclopride/
152. 84225-95-6.rn.
153. (raclopride or racloprida or raclopridum or rakloprid or raklopridl).mp.
154. Spiperone/
155. 749-02-0.rn.
156. (E 525 or Espiperona or Spiperonum or Spiroperidol or Spiropitan).mp.
157. thioridazine/
158. 50-52-2.rn.
159. (Aldazine or Dazithin or Detril or Elperil or Mallorol or Malloryl or Melleril or Meleril or Mellaril or Mellerets or Mellerette or Melleretten or Melleril or Sonapax or Thioridazin or Thioridazinum or Tioridatsiini or Tioridazin or Tioridazina or Tioridazinas).mp.
160. Tiapride/
161. 51012-32-9.rn.
162. tiotixene/
163. 5591-45-7.rn.
164. (Navane or Navaron or Orbinamon or Tiotixene or Tiotikseeni or Tiotixen or Tiotixeno or Tiotixenum or Thixit or Tiotixene).mp.
165. trifluoperazine/
166. 117-89-5.rn.
167. (Cuait D or Cuait N or eskazine or flupazine or Jatrosom or Jalonac or Parstelin or Parmodalin or stelazine or Stelabid or Stelapar or Sycot or Terfluzine or Trifluoperazine or Trifluoperazini Hydrochloridum or triftazin or Trinicalm Forte or Trinicalm Plus).mp.
168. Trifluperidol/
169. 749-13-3.rn.
170. (Flumoperone or Psicoperidol or Psychoperidol or Trifluperidol or Trifluperidoli or Trifluperidolum or Triperidol or Trisedil or Trisedyl).mp.
171. Triflupromazine/
172. 146-54-3.rn.
173. (Adazine or Fluopromazine or Phenothiazine or Psyquil or Siquil or Triflupromazina or Trifluopromazine or Vesprin or Vetame).mp.
174. Zuclopenthixol/
175. 53772-83-1.rn.
176. (Cisordinol or Clopixol or Ciatyl-Z or Clopenthixol or Clopentixol or Sedanxol or Zuclopenthixolum or Zuclopentixol or Zuclopenthixol or Zuklopentixol).mp.
177. or/89-176
178. atypical antipsychotic agent/
179. (atypical adj antipsychotic*).tw.
180. ((second or 2nd) adj generation adj antipsychotic*).tw.
181. ((third or 3rd) adj generation adj antipsychotic*).tw.
182. Amisulpride/
183. 71675-85-9.rn.
184. (Aminosultopride or Amisulprida or Amisulpride or Amisulpridum or Solian or Sulpitac).tw.
185. Aripiprazole/
186. 129722-12-9.rn.
187. (Abilitat or Abilify or Aripiprazole or Discmelt or OPC 31 or OPC 14597).mp.
188. Asenapine/
189. 65576-45-6.rn.

190. (Asenapine or EINECS 265-829-4).mp.
191. Blonanserin/
192. 132810-10-7.rn.
193. (Blonserin or AD 5423).mp.
194. Clospipramine/
195. 89419-40-9.rn.
196. (Clospipramine or Cremin or Mosapramina or Mosapramine).mp.
197. Clotiapine/
198. 2058-52-8.rn.
199. (Clothiapine or Clotiapina or Clotiapine or Clotiapinum or Dibenzothiazepine or Etumina or Etumine or Entumin or Etomine or Entumine or HF 2159 or LW 2159 or "BRN 0568276").mp.
200. clozapine/
201. 5786-21-0.rn.
202. (Clozapin or Clozapina or Clozapine or Clozapinum or Clorazil or Clozaril or FazaClo or Leponex or LX 100-129 or Zaponex).mp.
203. diazepine derivative/
204. 12688-68-5.rn.
205. dibenzazepine derivative/
206. Dibenzothiazepines.tw.
207. Fluvoxamine/
208. (54739-18-3 or 61718-82-9).rn.
209. (dumirox or DU23000 or Fluvoxamina or fluvoxamine or Fluvoaminum or Fluvoxamine Maleate or Fevarin or Luvox or SME 3110).mp.
210. Iloperidone/
211. 133454-47-4.rn.
212. (Fanapt or HP 873 or Illoperidone or Zomaril).mp.
213. Isoxazole derivative/
214. mesoridazine besylate/ or mesoridazine/
215. 5588-33-0.rn.
216. (Calodal or Lidanar or Lidanil or Mesoridazina or Mesoridazine or Mesoridazinum or Serentil or THD-2-SO).mp.
217. olanzapine/
218. 132539-06-1.rn.
219. (Zyprexa or Olantsapiini or Olanzapin or Olanzapina or Olanzapine or Olanzapinum or Olansek or Zalasta or Zypadhera).mp.
220. paliperidone/
221. 144598-75-4.rn.
222. (9-Hydroxyrisperidone or Invega or Paliperidone or R 76477 or RO76477).mp.
223. Perospirone/
224. 150915-41-6.rn.
225. (lullan or perospirone hydrochloride).mp.
226. piperidine derivative/
227. Piperazine derivative/
228. Pirenzepine/
229. pyrimidinone derivative/
230. Quetiapine/
231. 111974-69-7.rn.
232. (Co-Quetiapine or HSDB 7557 or Quetiapine or Seroquel).mp.
233. Quinolone derivative/
234. Remoxipride/
235. 80125-14-0.rn.
236. (FLA 731 or Remoxiprida or Remoxipride or Remoxipridum).mp.
237. risperidone/
238. 106266-06-2.rn.
239. (Apexidone or Psychodal or Risperdal or Risperidona or Risperidone or Risperidonum or Risperin or Risperilept or Rispolin or Spiron).mp.
240. Sertindole/
241. 106516-24-9.rn.
242. (Lu 23-174 or Sertindol or Sertindole or Serdolect or Sertindolum).mp.
243. Sulpiride/
244. 15676-16-1.rn.
245. (Abilit or Aiglonyl or Alimoral or Calmoflorine or Championyl or Darleton or Desmenat or Dobren or Dogmatil or Dogmatyl or Dolmatil or Eclorion or Eglonil or Eglonyl or Enimon or Equilid or Eusulpid or Fardalan or Fidelan or Guastil or Isnamide or Kylistro or Lisopiride or Mariastel or Meresa or Miradol or Mirbanil or Neogama or Normum or Nufarol or Omiryl or Omperan or Ozoderpin or Psicocen or Pyrkappl or Sernevin or Splotin or Stamonevrol or Sulparex or Sulpirid or Sulpirida or Sulpiride or Sulpiridum or Sulpor or Suprium or Sulpyrid or Trilan or Valirem or Zemorcon).mp.
246. Thiazole derivative/

247. Zotepine/
248. 26615-21-4.rn.
249. (Lodepin or Nipolept or Zotepina or Zotepine or Zotepinum or Zoleptil).mp.
250. ziprasidone/
251. 146939-27-7.rn.
252. (ziprasidone or zeldox).tw.
253. or/178-252
254. or/177,253
255. and/88,254
256. exp clinical trial/
257. randomi?ed.ti,ab.
258. placebo.ti,ab.
259. dt.fs.
260. randomly.ti,ab.
261. trial.ti,ab.
262. groups.ti,ab.
263. or/256-262
264. (animal not (animal and human)).sh.
265. 263 not 264
266. (book or book series or editorial or letter or note).pt. or case report/
267. 265 not 266
268. cohort analysis/
269. longitudinal study/
270. follow up/
271. retrospective study/
272. prospective study/
273. case control study/
274. comparative study/
275. observational study/
276. (cohort$ or longitudinal or retrospective or prospective or follow-up or case-control).tw.
277. or/268-276
278. 277 not 264
279. 278 not 266
280. exp infant/
281. exp child/
282. exp adolescent/
283. exp pediatrics/
284. (child$ or adolescen$ or p*ediatrics$).tw.
285. or/280-284
286. and/255,267,285
287. and/255,279,285
288. or/286-287
289. limit 288 to yr="1987 -Current"
290. limit 289 to english language
291. (and/255,267) or (and/255,279)
292. limit 291 to (infant or child or preschool child <1 to 6 years> or school child <7 to 12 years> or adolescent <13 to 17 years>)
293. limit 292 to yr="1987 -Current"
294. limit 293 to english language
295. 290 or 294
296. (young adj adult*).mp.
297. ((college or university) adj2 (age or student*)).tw.
298. exp student/
299. or/296-298
300. and/255,267,299
301. and/255,279,299
302. or/300-301
303. limit 302 to yr="1987 -Current"
304. limit 303 to english language
305. 295 or 304

Table B-3 PsychINFO – OVID Version

OvidSP_-PsycINFO 1980 to April Week 3 2010	Searched: 16Apr10 Results: 4146
1. exp Pervasive Developmental Disorders/ 2. (child adj1 development adj1 disorder*).tw. 3. exp Aspergers Syndrome/ 4. (asperger* adj1 (syndrome or disorder)).tw. 5. exp Autism/ 6. (autism* or (autistic adj1 disorder*) or kanner* syndrome).tw. 7. exp Rett Syndrome/ 8. (((rett or retts) adj1 (sydrome or disorder)) or cerebroatrophic hyperammonemia*).tw. 9. exp Childhood Schizophrenia/ 10. (childhood* adj2 schizophrenia*).tw. 11. aggressive behavior/ 12. aggression.tw. 13. agitation/ 14. ((psychomotor adj1 (agitation or restlessness or hyperactivity or excitement)) or akathisia).tw. 15. Sleep Disorders/ 16. ((sleep adj2 disorder*) or insomnia*).tw. 17. affective disorders/ 18. ((mood or affective) adj1 disorder*).tw. 19. impulsiveness/ 20. (impulsive* or (impulsive adj1 behavio?r)).tw. 21. exp Movement Disorders/ 22. borderline personality disorder/ 23. (borderline adj1 personality adj1 disorder*).tw. 24. (affective adj2 dysregulation).tw. 25. (($behavioral adj2 dyscontrol) or (impulsive-behavioral adj2 deregulation)).tw. 26. (mood adj2 lability).tw. 27. (irritable or irritability).tw. 28. Self-Injurious Behavior/ 29. (self-injurious behavio?r or self-mutilating behavio?r or self mutilation or self-destructive behavio?r or deliberate self-harm or parasuicide).tw. 30. antisocial personality disorder/ 31. exp Attention Deficit Disorder/ 32. ((attention adj deficit adj disorder) or hyperkinetic syndrome or adhd).tw. 33. exp Behavior Disorders/ 34. exp Conduct Disorder/ 35. (conduct adj disorder*).tw. 36. (Childhood adj Disintegrative adj Disorder).tw. 37. "Pervasive Developmental Disorder Not Otherwise Specified".tw. 38. exp Oppositional Defiant Disorder/ 39. (Oppositional adj Defiant adj Disorder).tw. 40. (atypical adj1 autism).tw. 41. "Disruptive Behavior Disorder Not Otherwise Specified".mp. 42. exp Schizophrenia/ 43. exp Catatonic Schizophrenia/ 44. exp "Schizophrenia (Disorganized Type)"/ 45. exp Paranoid Schizophrenia/ 46. ((catatonic or disorganized or paranoid) adj schizophrenia).tw. 47. exp Psychosis/ 48. exp Schizoaffective Disorder/ 49. ((Psychotic or schizoaffective or schizophreniform) adj disorder).tw. 50. (brief reactive adj (psychos?s or psychoses)).tw. 51. first episode schizophrenia.tw. 52. (prodrom$ and schizophren$).tw. 53. exp Schizotypal Personality Disorder/ 54. exp Schizoid Personality Disorder/ 55. (schizotypal personality disorder or ((borderline or pseudoneurotic or pseudopsychopathic or incipient or latent) adj2 schizophrenia)).tw. 56. exp Bipolar Disorder/ 57. (((bipolar or manic) adj (disorder or psychos?s or depression)) or mania*).tw.	

58. exp Major Depression/
59. (depress* and (refractory or chronic or resistant)).mp.
60. exp Treatment Resistant Depression/
61. ((refractive or chronic or resistant) adj3 depression).tw.
62. (depressive adj2 disorder*).tw.
63. exp Obsessive Compulsive Disorder/
64. (OCD or anankastic personalit* or (obsessive compulsive adj (disorder* or neuros*)) or (obsessive-compulsive adj (disorder* or neuros*))).tw.
65. exp Anorexia Nervosa/
66. ((anorexia adj nervosa*) or anorexia*).tw.
67. exp Posttraumatic Stress Disorder/
68. ((chronic or acute or delayed onset) and (post-traumatic adj stress adj disorder*)).tw.
69. ((posttraumatic or post-traumatic or post traumatic) adj (neuroses or disorder)).tw.
70. ptsd.tw.
71. exp Tourette Syndrome/
72. exp Tics/
73. ($tourette* adj (syndrome or disorder or disease)).tw.
74. (tic adj disorder).tw.
75. (multiple adj motor adj vocal adj tic adj disorder).tw.
76. or/1-75
77. exp Neuroleptic Drugs/
78. exp Tranquilizing Drugs/
79. (antipsychotic adj (drug* or agent*)).tw.
80. ((first or 1st) adj generation adj antipsychotic*).tw.
81. azaperone.mp.
82. (Atsaperoni or Azaperon or Azaperona or Azaperone or Azaperonum or Eucalmyl or Fluoperidol or NSC 170976 or R 1929 or R-1929 or Sedaperone or Stresnil or Suicalm).mp.
83. Butyrophenones.tw.
84. Clopenthixol.mp.
85. (Chlorpenthixol or Clopenthixol or Clopenthixolum or Sordinol or Zuclopenthixol).mp.
86. exp Chlorpromazine/
87. (Aminazin or Aminazine or Ampliactil or BC 135 or Chlorpromazine or Chlorpromazinum or Clorpromazina or Chlor-Promanyl or Chlorpromados or Chlorderazin or Chlorpromazin or Contomin or Elmarin or Esmind or Fenactil or Fenaktyl or HL 5746 or Largactil or Largactilothiazine or Megaphen or Largactyl or Klooripromatsiini or Klorpromazin or 6 Copin or Trinicalm Forte or Diminex Balsamico Juven Tos or Largatrex or Phenactyl or Proma or Promactil or Promazil or Prozil or Psychozine or Sanpron or Thorazine or Torazina or Wintermin).mp.
88. Chlorprothixene/
89. (Chlorprothixene or Chlorprothixen or Chlorprothixenum or Chlorprotixen or Chlorprotixene or Clorprotisene or Clorprotixeno or Laractan or Paxyl or Rentovet or Taractan or Tarasan or Traquilan or Trictal or Truxal or Truxaletten or Truxil or Vetacalm).mp.
90. dibenzoxazepines.tw.
91. Droperidol.mp.
92. (Dehydrobenzoperidol or Dehydrobenzperidol or Deidrobenzperidolo or Dridol or Droleptan or Droperidol or Droperidoli or Droperidolis or Droperidolum or Disifelit or Halkan or Inapsin or Inapsine or Inopsin or Thalamonal or Nilperidol or Properidol or Sintodril or Vetkalm).mp.
93. flupentixol.mp.
94. (Depixol or Emergil or Fluanxol or Flupenthixol or Flupentixol or Flupentixolum or Fluxanxol or Siplaril or Siplarol).mp.
95. exp Fluphenazine/
96. (Dapotum or Elinol or Flufenazina or Fluofenazine or Fluphenazine or Fluorphenazine or Fluphenazinum or Ftorphenazine or Moditen or Pacinol or Sevinol or Siqualon or Triflumethazine or Valamina or Vespazine).mp.
97. exp Haloperidol/
98. (Aldo or Aloperidin or Aloperidol or Aloperidolo or Brootopon or Dozic or Einalon S or Eukystol or Fortunan or Galoperidol or Haldol or Halojust or Halopal or Haloperidol or Haloperidoli or Haloperidolis or Haloperidolu or Halopoidol or Serenace or Halopidol or Haloper or Halperon or Keselan or Lealgin or Linton or Mixidol or Peluces or Pernox or Serenace or Serenefl or Sernas or Sernel or Serenase or Ulcolind or Uliolind or Vesalium).mp.
99. indoles.tw.
100. Lithium/ or Lithium carbonate/
101. (Camcolit or Candamide or Carbolith or Carbonic acid lithium salt or dilithium salt or Eskalith or Eutimin or Hypnorex or Limas or Lithium or Liskonum or Litard or Lithane or Lithea or Lithicarb or Lithinate or Lithionate or Lithotabs or Liticar or Manialith or Maniprex or Micalith or Neurolepsin or Pfi-lithium or Phasal or Plenur or Priadel or Quilonorm or Teralithe).mp.
102. exp Loxapine/
103. (Cloxazepine or CL 62362 or Dibenzacepin or Dibenzoazepine or Hydrofluoride 3170 or LW 3170 or Lossapina or Loksapiini or Loxapin or Loxapina or Loxapine or Loxapinum or Oxilapine or Loxapac or SUM 3170 or Loxitane or Desconex).mp.
104. Methiothepin.mp.
105. (Methiothepin or metitepine or Methiothepine or Methiothepin maleate or Metitepina or Metitepinum).mp.

106. Methotrimeprazine.mp.
107. (Dedoran or Hirnamin or Hirnamine or Levomepromazine or Levomepromazin or Levomepromazina or Levopromazioni or Levomepromazinum or Levoprome or Levotomin or Mepromazine or Methotrimeprazine or Neurocil or Neozine or Nirvan or Nocinan or Momizan or Nozinane or Sinogan or Levolam or Nozinan or Sinogan or Tisercin or Veractil).mp.
108. exp Molindone/
109. (Molindona or Molindone or Molindonum).mp.
110. Penfluridol.mp.
111. (Penfluridol or Penfluridolum or Semap).mp.
112. perazine.mp.
113. (Pemazine Dimalonate or Peragal or Perazin or Perazine or Perazinum or Taxilan).mp.
114. exp Perphenazine/
115. (Chlorperphenazine or Chlorpiprazine or Decentan or Emesinal or Etaperazin or Etaperazine or Ethaperazine or Etrafon or F-mon or Fentazin or Mutabon or Perfenazin or Perfenazina or Perfenazinas or Perfenazine or Perphenazin or Perphenazine or Perfenazyna or Perphenazinum or Pertriptyl or Sch 3940 or Thilatazin or Tranquisan or Trifaron or Trilafon or Trilifan or Triptafen or Triphenot or Triavil).mp.
116. exp Phenothiazine Derivatives/
117. Pimozide/
118. (Antalon or Opiran or Orap or Pimotsidi or Pimozid or Pimozida or Pimozidas or Pimozide or Pimozidum or Pimozyd).mp.
119. Prochlorperazine/
120. (Apo-Prochlorazine or Capazine or Chlormeprazine or Compazine or Compro or Dhaperazine or Emelent or Kronocin or Nipodal or Novamin or Nu-Prochlor or Meterazin or Meterazine or Mitil or Prochlorpemazine or Prochlorperazinum or Proclorperazina or Prochlorperazine or Proklooriperatsiini or Proklorperazin or Prorazin or Phenothiazine or Seratil or Stemetil or Tementil or Temetid).mp.
121. promazine/
122. (Ampazine or Berophen or Esparin or Liranol or Neo-Hibernex or Prazin or Sparine or Sinophenin or Promazine hydrochloride or Protactyl or Promatsiini or Promazin or Promazine or Promazinum or Propazinum or Prazine or Promwill or Protactyl or Romtiazin or Sinophenin or Talofen or Talofen or Tomil or Verophen).mp.
123. raclopride.mp.
124. (raclopride or racloprida or raclopridum or rakloprid or raklopridl).mp.
125. Spiroperidol/
126. (E 525 or Espiperona or Spiperone or Spiperonum or Spiroperidol or Spiropitan).mp.
127. exp Thiothixene/
128. (Navane or Navaron or Orbinamon or Tiotixene or Tiotikseeni or Tiotixen or Tiotixeno or Tiotixenum or Thixit or Tiotixene).mp.
129. exp Trifluoperazine/
130. (Cuait D or Cuait N or eskazine or flupazine or Jatrosom or Jalonac or Parstelin or Parmodalin or stelazine or Stelabid or Stelapar or Sycot or Terfluzine or Trifluoperazine or Trifluoperazini Hydrochloridum or triftazin or Trinicalm Forte or Trinicalm Plus).mp.
131. exp Thioridazine/
132. (Aldazine or Dazithin or Detril or Elperil or Mallorol or Malloryl or Melleril or Meleril or Mellaril or Mellerets or Mellerette or Melleretten or Melleril or Sonapax or Thioridazin or Thioridazinum or Tioridatsiini or Tioridazin or Tioridazina or Tioridazinas).mp.
133. exp Phenothiazine Derivatives/
134. (Adazine or Fluopromazine or Phenothiazine or Psyquil or Siquil or Triflupromazina or Trifluopromazine or Vesprin or Vetame).mp.
135. Zuclopenthixol.mp.
136. (Cisordinol or Clopixol or Ciatyl-Z or Clopenthixol or Clopentixol or Sedanxol or Zuclopenthixolum or Zuclopentixol or Zuclopenthixol or Zuklopentixol).mp.
137. or/77-136
138. atypical antipsychotic$.tw.
139. ((second or 2nd) adj generation adj antipsychotic*).tw.
140. ((third or 3rd) adj generation adj antipsychotic*).tw.
141. Amisulpride.mp.
142. (Aminosultopride or Amisulprida or Amisulpridum or Solian or Sulpitac).mp.
143. exp Aripiprazole/
144. (Abilitat or Abilify or Aripiprazole or Discmelt or OPC 31 or OPC 14597).mp.
145. Asenapine.mp.
146. EINECS 265-829-4.mp.
147. (Blonanserin or AD 5423).mp.
148. Clotiapine.mp.
149. (Clothiapine or Clotiapina or Clotiapinum or Dibenzothiazepine or Etumina or Etumine or Entumin or Etomine or Entumine or HF 2159 or LW 2159 or "BRN 0568276").mp.
150. exp Clozapine/
151. (Clozapin or Clozapina or Clozapine or Clozapinum or Clorazil or Clozaril or FazaClo or Leponex or LX 100-129 or Zaponex).mp.

152. Diazepine.mp.
153. Dibenzazepines.mp.
154. Fluvoxamine/
155. (dumirox or DU23000 or Fluvoxamina or fluvoxamine or Fluvoaminum or Fluvoxamine Maleate or Fevarin or Luvox or SME 3110).mp.
156. Iloperidone.mp.
157. (Fanapt or HP 873 or Zomaril).mp.
158. Isoxazole*.mp.
159. Mesoridazine/
160. (Calodal or Lidanar or Lidanil or Mesoridazina or Mesoridazine or Mesoridazinum or Serentil or THD-2-SO).mp.
161. mosapramine.mp.
162. (Clospipramine or Cremin or Mosapramina).mp.
163. exp Olanzapine/
164. (Zyprexa or Olantsapiini or Olanzapin or Olanzapine or Olanzapina or Olanzapinum or Olansek or Zalasta or Zypadhera).mp.
165. paliperidone.tw.
166. (9-Hydroxyrisperidone or Invega or R 76477 or RO76477).mp.
167. Perospirone.tw.
168. (lullan or perospirone hydrochloride).mp.
169. Piperidines.mp.
170. Piperazines/ or piperazine*.mp.
171. Pirenzepine.mp.
172. Pyrimidinones.mp.
173. exp Quetiapine/
174. (Co-Quetiapine or HSDB 7557 or Quetiapine or Seroquel).mp.
175. Quinolones.mp.
176. Remoxipride.mp.
177. (FLA 731 or Remoxiprida or Remoxipride or Remoxipridum).mp.
178. exp Risperidone/
179. (Apexidone or Psychodal or Risperdal or Risperidona or Risperidone or Risperidonum or Risperin or Risperilept or Rispolin or Spiron).mp.
180. Sertindole.mp.
181. (Lu 23-174 or Sertindol or Sertindole or Serdolect or Sertindolum).mp.
182. Sulpiride/
183. (Abilit or Aiglonyl or Alimoral or Calmoflorine or Championyl or Darleton or Desmenat or Dobren or Dogmatil or Dogmatyl or Dolmatil or Eclorion or Eglonil or Eglonyl or Enimon or Equilid or Eusulpid or Fardalan or Fidelan or Guastil or Isnamide or Kylistro or Lisopiride or Mariastel or Meresa or Miradol or Mirbanil or Neogama or Normum or Nufarol or Omiryl or Omperan or Ozoderpin or Psicocen or Pyrkappl or Sernevin or Splotin or Stamonevrol or Sulparex or Sulpirid or Sulpirida or Sulpiride or Sulpiridum or Sulpor or Suprium or Sulpyrid or Trilan or Valirem or Zemorcon).mp.
184. thiazole.mp.
185. Zotepine.tw.
186. (Lodepin or Nipolept or Zotepina or Zotepinum or Zoleptil).mp.
187. ziprasidone.tw.
188. Zeldox.mp.
189. or/77-79,138-188
190. or/137,189
191. and/76,190
192. randomi?ed controlled trial.tw,pt.
193. exp Clinical Trials/
194. controlled clinical trial.tw,pt.
195. randomi?ed.ab.
196. placebo.ab.
197. exp drug therapy/
198. randomly.ab.
199. trial.ab.
200. groups.ab.
201. or/192-200
202. (cohort studies or cohort study).tw.
203. exp Followup Studies/
204. exp Longitudinal Studies/
205. exp Prospective Studies/
206. exp Retrospective Studies/
207. (cohort$ or longitudinal or retrospective or prospective or follow-up or case-control).tw.
208. or/202-207
209. (animals not (humans and animals)).sh,hw.
210. 201 not 209

211. 208 not 209
212. (infant or $child$ or adolescen$ or p*ediatric$).tw.
213. and/191,210,212
214. and/191,211-212
215. or/213-214
216. and/191,210
217. and/191,211
218. or/216-217
219. limit 218 to ((childhood or adolescence <13 to 17 years>) and (100 childhood or 140 infancy or 160 preschool age or 180 school age or 200 adolescence))
220. limit 215 to ((childhood or adolescence <13 to 17 years>) and (100 childhood or 140 infancy or 160 preschool age or 180 school age or 200 adolescence))
221. or/219-220
222. limit 221 to human
223. limit 222 to english language
224. limit 223 to yr="1987 -Current"
225. ((college or university) adj2 (age or student*)).tw.
226. exp College Students/
227. (young adj adult*).tw.
228. or/225-227
229. and/191,210,228
230. and/191,211,228
231. limit 218 to 320 young adulthood
232. limit 215 to 320 young adulthood
233. 231 or 232
234. limit 233 to (human and english language and yr="1987 -Current")
235. 224 or 234

Table B-4. CENTRAL –Ovid Version

OvidSP_-CENTRAL 1980 to April Week 3 2010	Searched: 16Apr10 Results: 865

1. (child adj1 development adj1 disorder*).mp.
2. (asperger* adj1 (syndrome or disorder)).mp.
3. (autism* or (autistic adj1 disorder*) or kanner* syndrome).mp.
4. (atypical adj1 autism).mp.
5. (((rett or retts) adj1 (sydrome or disorder)) or cerebroatrophic hyperammonemia*).mp.
6. (child* adj2 schizophrenia*).mp.
7. aggression.mp.
8. ((psychomotor adj1 (agitation or restlessness or hyperactivity or excitement)) or akathisia).mp.
9. ((sleep adj2 disorder*) or insomnia*).mp.
10. ((mood or affective) adj1 disorder*).mp.
11. (impulsive adj1 behavio?r).mp.
12. (borderline adj1 personality adj1 disorder*).mp.
13. (affective adj2 dysregulation).mp.
14. (($behavioral adj2 dyscontrol) or (impulsive-behavioral adj2 deregulation)).mp.
15. (mood adj2 lability).mp.
16. (irritable or irritability).mp.
17. (self-injurious behavio?r or self-mutilating behavio?r or self mutilation or self-destructive behavio?r or deliberate self-harm or parasuicide).mp.
18. movement disorders.mp.
19. ((attention adj deficit adj disorder) or hyperkinetic syndrome or adhd).mp.
20. (conduct adj disorder*).mp.
21. oppositional defiant disorder.mp.
22. "Disruptive Behavior Disorder Not Otherwise Specified".mp.
23. (schizophrenia* or ((catatonic or disorganized or paranoid) adj schizophrenia)).mp.
24. ((Psychotic or schizoaffective or schizophreniform) adj disorder).mp.
25. (schizotypal personality disorder or ((borderline or pseudoneurotic or pseudopsychopathic or incipient or latent) adj2 schizophrenia)).mp.
26. (brief reactive psychos?s or psychoses).mp.
27. (prodrom$ and schizophren$).mp.
28. first episode schizophrenia.mp.
29. (major depression or depressive disorder).mp.
30. (depression and (refractory or chronic or resistant)).mp.
31. (schizotypal personality disorder or ((borderline or pseudoneurotic or pseudopsychopathic or incipient or latent) adj2

schizophrenia)).mp.
32. (((bipolar or manic) adj (disorder or psychos?s or depression)) or mania*).mp.
33. (OCD or anankastic personalit* or (obsessive compulsive adj (disorder* or neuros*)) or (obsessive-compulsive adj (disorder* or neuros*))).tw.
34. ((chronic or acute or delayed onset) and (post-traumatic adj stress adj disorder*)).mp.
35. ((posttraumatic or post-traumatic or post traumatic) adj (neuroses or disorder)).mp.
36. ptsd.mp.
37. ((anorexia adj nervosa*) or anorexia*).mp.
38. ($tourette* adj (syndrome or disorder or disease)).mp.
39. (tic adj disorder).mp.
40. (multiple adj motor adj vocal adj tic adj disorder).mp.
41. or/1-40
42. (antipsychotics or antipsychotic agent* or antipsychotic drug*).mp.
43. (tranquilizing agent* or tranquilizing drug*).mp.
44. ((first or 1st) adj generation adj antipsychotic*).mp.
45. 1649-18-9.rn.
46. (Atsaperoni or Azaperon or Azaperona or Azaperone or Azaperonum or Eucalmyl or Fluoperidol or NSC 170976 or R 1929 or R-1929 or Sedaperone or Stresnil or Suicalm).mp.
47. Butyrophenones.mp.
48. 982-24-1.rn.
49. (Chlorpenthixol or Clopenthixol or Clopenthixolum or Sordinol or Zuclopenthixol).mp.
50. 50-53-3.rn.
51. (Aminazin or Aminazine or Ampliactil or BC 135 or Chlorpromazine or Chlorpromazinum or Clorpromazina or Chlor-Promanyl or Chlorpromados or Chlorderazin or Chlorpromazin or Contomin or Elmarin or Esmind or Fenactil or Fenaktyl or HL 5746 or Largactil or Largactilothiazine or Megaphen or Largactyl or Klooripromatsiini or Klorpromazin or 6 Copin or Trinicalm Forte or Diminex Balsamico Juven Tos or Largatrex or Phenactyl or Proma or Promactil or Promazil or Prozil or Psychozine or Sanpron or Thorazine or Torazina or Wintermin).mp.
52. 113-59-7.rn.
53. (Chlorprothixene or Chlorprothixen or Chlorprothixenum or Chlorprotixen or Chlorprotixene or Clorprotisene or Clorprotixeno or Laractan or Paxyl or Rentovet or Taractan or Tarasan or Traquilan or Trictal or Truxal or Truxaletten or Truxil or Vetacalm).mp.
54. Dibenzoxazepines.mp.
55. 548-73-2.rn.
56. (Dehydrobenzoperidol or Dehydrobenzperidol or Deidrobenzperidolo or Dridol or Droleptan or Droperidol or Droperidoli or Droperidolis or Droperidolum or Disifelit or Halkan or Inapsin or Inapsine or Inopsin or Thalamonal or Nilperidol or Properidol or Sintodril or Vetkalm).mp.
57. 2709-56-0.rn.
58. (Depixol or Emergil or Fluanxol or Flupenthixol or Flupentixol or Flupentixolum or Fluxanxol or Siplaril or Siplarol).mp.
59. 69-23-8.rn.
60. (Dapotum or Elinol or Flufenazina or Fluofenazine or Fluphenazine or Fluorphenazine or Fluphenazinum or Ftorphenazine or Moditen or Pacinol or Sevinol or Siqualon or Triflumethazine or Valamina or Vespazine).mp.
61. 52-86-8.rn.
62. (Aldo or Aloperidin or Aloperidol or Aloperidolo or Brootopon or Dozic or Einalon S or Eukystol or Fortunan or Galoperidol or Haldol or Halojust or Halopal or Haloperidol or Haloperidoli or Haloperidolis or Haloperidolu or Halopoidol or Serenace or Halopidol or Haloper or Halperon or Keselan or Lealgin or Linton or Mixidol or Peluces or Pernox or Serenace or Serenefl or Sernas or Sernel or Serenase or Ulcolind or Uliolind or Vesalium).mp.
63. indoles.mp.
64. 554-13-2.rn.
65. (Camcolit or Candamide or Carbolith or Carbonic acid lithium salt or dilithium salt or Eskalith or Eutimin or Hypnorex or Limas or Lithium or Liskonum or Litard or Lithane or Lithea or Lithicarb or Lithinate or Lithionate or Lithotabs or Liticar or Manialith or Maniprex or Micalith or Neurolepsin or Pfi-lithium or Phasal or Plenur or Priadel or Quilonorm or Teralithe).mp.
66. 1977-10-2.rn.
67. (Cloxazepine or CL 62362 or Dibenzacepin or Dibenzoazepine or Hydrofluoride 3170 or LW 3170 or Lossapina or Loksapiini or Loxapin or Loxapina or Loxapine or Loxapinum or Oxilapine or Loxapac or SUM 3170 or Loxitane or Desconex).mp.
68. 20229-30-5.rn.
69. (Methiothepin or metitepine or Methiothepine or Methiothepin maleate or Metitepina or Metitepinum).mp.
70. 60-99-1.rn.
71. (Dedoran or Hirnamin or Hirnamine or Levomepromazine or Levomepromazin or Levomepromazina or Levopromazioni or Levomepromazinum or Levoprome or Levotomin or Mepromazine or Methotrimeprazine or Neurocil or Neozine or Nirvan or Nocinan or Momizan or Nozinane or Sinogan or Levolam or Nozinan or Sinogan or Tisercin or Veractil).mp.
72. 7416-34-4.rn.
73. (Molindona or Molindone or Molindonum).mp.
74. 26864-56-2.rn.
75. (Penfluridol or Penfluridolum or Semap).mp.
76. 84-97-9.rn.

77. (Pemazine Dimalonate or Peragal or Perazin or Perazine or Perazinum or Taxilan).mp.
78. 58-39-9.rn.
79. (Chlorperphenazine or Chlorpiprazine or Decentan or Emesinal or Etaperazin or Etaperazine or Ethaperazine or Etrafon or F-mon or Fentazin or Mutabon or Perfenazin or Perfenazina or Perfenazinas or Perfenazine or Perphenazin or Perphenazine or Perfenazyna or Perphenazinum or Pertriptyl or Sch 3940 or Thilatazin or Tranquisan or Trifaron or Trilafon or Trilifan or Triptafen or Triphenot or Triavil).mp.
80. Phenothiazines.mp.
81. 2062-78-4.rn.
82. (Antalon or Opiran or Orap or Pimotsidi or Pimozid or Pimozida or Pimozidas or Pimozide or Pimozidum or Pimozyd).mp.
83. 58-38-8.rn.
84. (Apo-Prochlorazine or Capazine or Chlormeprazine or Compazine or Compro or Dhaperazine or Emelent or Kronocin or Nipodal or Novamin or Nu-Prochlor or Meterazin or Meterazine or Mitil or Prochlorpemazine or Prochlorperazinum or Proclorperazina or Prochlorperazine or Proklooriperatsiini or Proklorperazin or Prorazin or Phenothiazine or Seratil or Stemetil or Tementil or Temetid).mp.
85. 58-40-2.rn.
86. (Ampazine or Berophen or Esparin or Liranol or Neo-Hibernex or Prazin or Sparine or Sinophenin or Promazine hydrochloride or Protactyl or Promatsiini or Promazin or Promazine or Promazinum or Propazinum or Prazine or Promwill or Protactyl or Romtiazin or Sinophenin or Talofen or Talofen or Tomil or Verophen).mp.
87. 84225-95-6.rn.
88. (raclopride or racloprida or raclopridum or rakloprid or rakloprid).mp.
89. 749-02-0.rn.
90. (E 525 or Espiperona or Spiperone or Spiperonum or Spiroperidol or Spiropitan).mp.
91. 50-52-2.rn.
92. (Aldazine or Dazithin or Detril or Elperil or Mallorol or Malloryl or Melleril or Meleril or Mellaril or Mellerets or Mellerette or Melleretten or Melleril or Sonapax or Thioridazin or Thioridazine or Thioridazinum or Tioridatsiini or Tioridazin or Tioridazina or Tioridazinas).mp.
93. 5591-45-7.rn.
94. (Navane or Navaron or Orbinamon or Thiothixene or Tiotikseeni or Tiotixen or Tiotixeno or Tiotixenum or Thixit or Tiotixene).mp.
95. Thioxanthenes.mp.
96. 51012-32-9.rn.
97. (Betaprid or Delpral or Doparid or Etiles or Equilium or Italiprid or Luxoben or Normagit or Porfanil or Sereprid or Tiacob or Tiapridal or Tiapride).mp.
98. 749-13-3.rn.
99. (Flumoperone or Psicoperidol or Psychoperidol or Trifluperidol or Trifluperidoli or Trifluperidolum or Triperidol or Trisedil or Trisedyl).mp.
100. 117-89-5.rn.
101. (Cuait D or Cuait N or eskazine or flupazine or Jatrosom or Jalonac or Parstelin or Parmodalin or stelazine or Stelabid or Stelapar or Sycot or Terfluzine or Trifluoperazine or Trifluoperazini Hydrochloridum or triftazin or Trinicalm Forte or Trinicalm Plus).mp.
102. 146-54-3.rn.
103. (Adazine or Fluopromazine or Phenothiazine or Psyquil or Siquil or Triflupromazina or Triflupromazine or Trifluopromazine or Vesprin or Vetame).mp.
104. 53772-83-1.rn.
105. (Cisordinol or Clopixol or Ciatyl-Z or Clopenthixol or Clopentixol or Sedanxol or Zuclopenthixolum or Zuclopentixol or Zuclopenthixol or Zuklopentixol).mp.
106. or/42-105
107. atypical antipsychotic*.mp.
108. ((second or 2nd) adj generation adj antipsychotic*).tw.
109. ((third or 3rd) adj generation adj antipsychotic*).tw.
110. 71675-85-9.rn.
111. (Aminosultopride or Amisulprida or Amisulpride or Amisulpridum or Solian or Sulpitac).mp.
112. 129722-12-9.rn.
113. (Abilitat or Abilify or Aripiprazole or Discmelt or OPC 31 or OPC 14597).mp.
114. 65576-45-6.rn.
115. (Asenapine or EINECS 265-829-4).mp.
116. 132810-10-7.rn.
117. (Blonserin or AD 5423).mp.
118. 2058-52-8.rn.
119. (Clothiapine or Clotiapina or Clotiapine or Clotiapinum or Dibenzothiazepine or Etumina or Etumine or Entumin or Etomine or Entumine or HF 2159 or LW 2159 or "BRN 0568276").mp.
120. 5786-21-0.rn.
121. (Clozapin or Clozapina or Clozapine or Clozapinum or Clorazil or Clozaril or FazaClo or Leponex or LX 100-129 or Zaponex).mp.
122. 12688-68-5.rn.

123. Diazepine.mp.
124. Dibenzazepines.mp.
125. Dibenzothiazepines.mp.
126. (54739-18-3 or 61718-82-9).rn.
127. (dumirox or DU23000 or Fluvoxamina or fluvoxamine or Fluvoaminum or Fluvoxamine Maleate or Fevarin or Luvox or SME 3110).mp.
128. 133454-47-4.rn.
129. (Fanapt or Iloperidone or HP 873 or Zomaril).mp.
130. Isoxazoles.mp.
131. 5588-33-0.rn.
132. (Calodal or Lidanar or Lidanil or Mesoridazina or Mesoridazine or Mesoridazinum or Serentil or THD-2-SO).mp.
133. 89419-40-9.rn.
134. (Clospipramine or Cremin or Mosapramina or Mosapramine).mp.
135. 132539-06-1.rn.
136. (Zyprexa or Olantsapiini or Olanzapin or Olanzapina or Olanzapine or Olanzapinum or Olansek or Zalasta or Zypadhera).mp.
137. 144598-75-4.rn.
138. (9-Hydroxyrisperidone or Invega or Paliperidone or R 76477 or RO76477).mp.
139. 150915-41-6.rn.
140. (lullan or perospirone*).mp.
141. Piperidines.mp.
142. Pirenzepine.mp.
143. Pyrimidinones.mp.
144. 111974-69-7.rn.
145. (Co-Quetiapine or HSDB 7557 or Quetiapine or Seroquel).mp.
146. Quinolones.mp.
147. 80125-14-0.rn.
148. (FLA 731 or Remoxiprida or Remoxipride or Remoxipridum).mp.
149. 106266-06-2.rn.
150. (Apexidone or Psychodal or Risperdal or Risperidona or Risperidone or Risperidonum or Risperin or Risperilept or Rispolin or Spiron).mp.
151. 106516-24-9.rn.
152. (Lu 23-174 or Sertindol or Sertindole or Serdolect or Sertindolum).mp.
153. 15676-16-1.rn.
154. (Abilit or Aiglonyl or Alimoral or Calmoflorine or Championyl or Darleton or Desmenat or Dobren or Dogmatil or Dogmatyl or Dolmatil or Eclorion or Eglonil or Eglonyl or Enimon or Equilid or Eusulpid or Fardalan or Fidelan or Guastil or Isnamide or Kylistro or Lisopiride or Mariastel or Meresa or Miradol or Mirbanil or Neogama or Normum or Nufarol or Omiryl or Omperan or Ozoderpin or Psicocen or Pyrkappl or Sernevin or Splotin or Stamonevrol or Sulparex or Sulpirid or Sulpirida or Sulpiride or Sulpiridum or Sulpor or Suprium or Sulpyrid or Trilan or Valirem or Zemorcon).mp.
155. thiazoles.mp.
156. 26615-21-4.rn.
157. (Lodepin or Nipolept or Zotepina or Zotepine or Zotepinum or Zoleptil).mp.
158. 146939-27-7.rn.
159. (ziprasidone or zeldox).tw.
160. or/107
161. or/106,160
162. infant.mp.
163. ($child$ or adolescen$ or p*ediatric$).mp.
164. or/162-163
165. and/41,161,164
166. limit 165 to yr="1987 -Current"
167. (young adj adult*).mp.
168. ((college or university) adj2 (age or student*)).tw.
169. or/167-168
170. and/41,161,169
171. limit 170 to yr="1987 -Current"
172. 166 or 171

Table B-5: IPA – OVID Version

OvidSP_-IPA 1980 to April Week 3 2010	Searched: 16Apr10 Results: 322
1. (child adj1 development adj1 disorder*).mp. 2. (asperger* adj1 (syndrome or disorder)).mp. 3. (autism* or (autistic adj1 disorder*) or kanner* syndrome).mp. 4. (atypical adj1 autism).mp. 5. (((rett or retts) adj1 (sydrome or disorder)) or cerebroatrophic hyperammonemia*).mp. 6. (child* adj2 schizophrenia*).mp. 7. aggression.mp. 8. ((psychomotor adj1 (agitation or restlessness or hyperactivity or excitement)) or akathisia).mp. 9. ((sleep adj2 disorder*) or insomnia*).mp. 10. ((mood or affective) adj1 disorder*).mp. 11. (impulsive adj1 behavio?r).mp. 12. (borderline adj1 personality adj1 disorder*).mp. 13. (affective adj2 dysregulation).mp. 14. (($behavioral adj2 dyscontrol) or (impulsive-behavioral adj2 deregulation)).mp. 15. (mood adj2 lability).mp. 16. (irritable or irritability).mp. 17. (self-injurious behavio?r or self-mutilating behavio?r or self mutilation or self-destructive behavio?r or deliberate self-harm or parasuicide).mp. 18. movement disorders.mp. 19. ((attention adj deficit adj disorder) or hyperkinetic syndrome or adhd).mp. 20. (conduct adj disorder*).mp. 21. oppositional defiant disorder.mp. 22. "Disruptive Behavior Disorder Not Otherwise Specified".mp. 23. (schizophrenia* or ((catatonic or disorganized or paranoid) adj schizophrenia)).mp. 24. ((Psychotic or schizoaffective or schizophreniform) adj disorder).mp. 25. (schizotypal personality disorder or ((borderline or pseudoneurotic or pseudopsychopathic or incipient or latent) adj2 schizophrenia)).mp. 26. (brief reactive psychos?s or psychoses).mp. 27. (prodrom$ and schizophren$).mp. 28. first episode schizophrenia.mp. 29. (major depression or depressive disorder).mp. 30. (depression and (refractory or chronic or resistant)).mp. 31. (schizotypal personality disorder or ((borderline or pseudoneurotic or pseudopsychopathic or incipient or latent) adj2 schizophrenia)).mp. 32. (((bipolar or manic) adj (disorder or psychos?s or depression)) or mania*).mp. 33. (OCD or anankastic personalit* or (obsessive compulsive adj (disorder* or neuros*)) or (obsessive-compulsive adj (disorder* or neuros*))).tw. 34. ((chronic or acute or delayed onset) and (post-traumatic adj stress adj disorder*)).mp. 35. ((posttraumatic or post-traumatic or post traumatic) adj (neuroses or disorder)).mp. 36. ptsd.mp. 37. ((anorexia adj nervosa*) or anorexia*).mp. 38. ($tourette* adj (syndrome or disorder or disease)).mp. 39. (tic adj disorder).mp. 40. (multiple adj motor adj vocal adj tic adj disorder).mp. 41. or/1-40 42. (antipsychotics or antipsychotic agent* or antipsychotic drug*).mp. 43. (tranquilizing agent* or tranquilizing drug*).mp. 44. ((first or 1st) adj generation adj antipsychotic*).mp. 45. 1649-18-9.rn. 46. (Atsaperoni or Azaperon or Azaperona or Azaperone or Azaperonum or Eucalmyl or Fluoperidol or NSC 170976 or R 1929 or R-1929 or Sedaperone or Stresnil or Suicalm).mp. 47. Butyrophenones.mp. 48. 982-24-1.rn. 49. (Chlorpenthixol or Clopenthixol or Clopenthixolum or Sordinol or Zuclopenthixol).mp. 50. 50-53-3.rn. 51. (Aminazin or Aminazine or Ampliactil or BC 135 or Chlorpromazine or Chlorpromazinum or Clorpromazina or Chlor-Promanyl or Chlorpromados or Chlorderazin or Chlorpromazin or Contomin or Elmarin or Esmind or Fenactil or Fenaktyl or HL 5746 or Largactil or Largactilothiazine or Megaphen or Largactyl or Klooripromatsiini or Klorpromazin or 6 Copin or Trinicalm Forte or Diminex Balsamico Juven Tos or Largatrex or Phenactyl or Proma or Promactil or Promazil or Prozil or Psychozine or Sanpron or Thorazine or Torazina or Wintermin).mp. 52. 113-59-7.rn.	

53. (Chlorprothixene or Chlorprothixen or Chlorprothixenum or Chlorprotixen or Chlorprotixene or Clorprotisene or Clorprotixeno or Laractan or Paxyl or Rentovet or Taractan or Tarasan or Traquilan or Trictal or Truxal or Truxaletten or Truxil or Vetacalm).mp.
54. Dibenzoxazepines.mp.
55. 548-73-2.rn.
56. (Dehydrobenzoperidol or Dehydrobenzperidol or Deidrobenzperidolo or Dridol or Droleptan or Droperidol or Droperidoli or Droperidolis or Droperidolum or Disifelit or Halkan or Inapsin or Inapsine or Inopsin or Thalamonal or Nilperidol or Properidol or Sintodril or Vetkalm).mp.
57. 2709-56-0.rn.
58. (Depixol or Emergil or Fluanxol or Flupenthixol or Flupentixol or Flupentixolum or Fluxanxol or Siplaril or Siplarol).mp.
59. 69-23-8.rn.
60. (Dapotum or Elinol or Flufenazina or Fluofenazine or Fluphenazine or Fluorphenazine or Fluphenazinum or Ftorphenazine or Moditen or Pacinol or Sevinol or Siqualon or Triflumethazine or Valamina or Vespazine).mp.
61. 52-86-8.rn.
62. (Aldo or Aloperidin or Aloperidol or Aloperidolo or Brootopon or Dozic or Einalon S or Eukystol or Fortunan or Galoperidol or Haldol or Halojust or Halopal or Haloperidol or Haloperidoli or Haloperidolis or Haloperidolu or Halopoidol or Serenace or Halopidol or Haloper or Halperon or Keselan or Lealgin or Linton or Mixidol or Peluces or Pernox or Serenace or Serenefl or Sernas or Sernel or Serenase or Ulcolind or Uliolind or Vesalium).mp.
63. indoles.mp.
64. 554-13-2.rn.
65. (Camcolit or Candamide or Carbolith or Carbonic acid lithium salt or dilithium salt or Eskalith or Eutimin or Hypnorex or Limas or Lithium or Liskonum or Litard or Lithane or Lithea or Lithicarb or Lithinate or Lithionate or Lithotabs or Liticar or Manialith or Maniprex or Micalith or Neurolepsin or Pfi-lithium or Phasal or Plenur or Priadel or Quilonorm or Teralithe).mp.
66. 1977-10-2.rn.
67. (Cloxazepine or CL 62362 or Dibenzacepin or Dibenzoazepine or Hydrofluoride 3170 or LW 3170 or Lossapina or Loksapiini or Loxapin or Loxapina or Loxapine or Loxapinum or Oxilapine or Loxapac or SUM 3170 or Loxitane or Desconex).mp.
68. 20229-30-5.rn.
69. (Methiothepin or metitepine or Methiothepine or Methiothepin maleate or Metitepina or Metitepinum).mp.
70. 60-99-1.rn.
71. (Dedoran or Hirnamin or Hirnamine or Levomepromazine or Levomepromazin or Levomepromazina or Levopromazioni or Levomepromazinum or Levoprome or Levotomin or Mepromazine or Methotrimeprazine or Neurocil or Neozine or Nirvan or Nocinan or Momizan or Nozinane or Sinogan or Levolam or Nozinan or Sinogan or Tisercin or Veractil).mp.
72. 7416-34-4.rn.
73. (Molindona or Molindone or Molindonum).mp.
74. 26864-56-2.rn.
75. (Penfluridol or Penfluridolum or Semap).mp.
76. 84-97-9.rn.
77. (Pemazine Dimalonate or Peragal or Perazin or Perazine or Perazinum or Taxilan).mp.
78. 58-39-9.rn.
79. (Chlorperphenazine or Chlorpiprazine or Decentan or Emesinal or Etaperazin or Etaperazine or Ethaperazine or Etrafon or F-mon or Fentazin or Mutabon or Perfenazin or Perfenazina or Perfenazinas or Perfenazine or Perphenazin or Perphenazine or Perfenazyna or Perphenazinum or Pertriptyl or Sch 3940 or Thilatazin or Tranquisan or Trifaron or Trilafon or Trilifan or Triptafen or Triphenot or Triavil).mp.
80. Phenothiazines.mp.
81. 2062-78-4.rn.
82. (Antalon or Opiran or Orap or Pimotsidi or Pimozid or Pimozida or Pimozidas or Pimozide or Pimozidum or Pimozyd).mp.
83. 58-38-8.rn.
84. (Apo-Prochlorazine or Capazine or Chlormeprazine or Compazine or Compro or Dhaperazine or Emelent or Kronocin or Nipodal or Novamin or Nu-Prochlor or Meterazin or Meterazine or Mitil or Prochlorpemazine or Prochlorperazinum or Proclorperazina or Prochlorperazine or Proklooriperatsiini or Proklorperazin or Prorazin or Phenothiazine or Seratil or Stemetil or Tementil or Temetid).mp.
85. 58-40-2.rn.
86. (Ampazine or Berophen or Esparin or Liranol or Neo-Hibernex or Prazin or Sparine or Sinophenin or Promazine hydrochloride or Protactyl or Promatsiini or Promazin or Promazine or Promazinum or Propazinum or Prazine or Promwill or Protactyl or Romtiazin or Sinophenin or Talofen or Talofen or Tomil or Verophen).mp.
87. 84225-95-6.rn.
88. (raclopride or racloprida or raclopridum or rakloprid or rakloprid).mp.
89. 749-02-0.rn.
90. (E 525 or Espiperona or Spiperone or Spiperonum or Spiroperidol or Spiropitan).mp.
91. 50-52-2.rn.
92. (Aldazine or Dazithin or Detril or Elperil or Mallorol or Malloryl or Melleril or Meleril or Mellaril or Mellerets or Mellerette or Melleretten or Melleril or Sonapax or Thioridazin or Thioridazine or Thioridazinum or Tioridatsiini or Tioridazin or Tioridazina or Tioridazinas).mp.
93. 5591-45-7.rn.

94. (Navane or Navaron or Orbinamon or Thiothixene or Tiotikseeni or Tiotixen or Tiotixeno or Tiotixenum or Thixit or Tiotixene).mp.
95. Thioxanthenes.mp.
96. 51012-32-9.rn.
97. (Betaprid or Delpral or Doparid or Etiles or Equilium or Italiprid or Luxoben or Normagit or Porfanil or Sereprid or Tiacob or Tiapridal or Tiapride).mp.
98. 749-13-3.rn.
99. (Flumoperone or Psicoperidol or Psychoperidol or Trifluperidol or Trifluperidoli or Trifluperidolum or Triperidol or Trisedil or Trisedyl).mp.
100. 117-89-5.rn.
101. (Cuait D or Cuait N or eskazine or flupazine or Jatrosom or Jalonac or Parstelin or Parmodalin or stelazine or Stelabid or Stelapar or Sycot or Terfluzine or Trifluoperazine or Trifluoperazini Hydrochloridum or triftazin or Trinicalm Forte or Trinicalm Plus).mp.
102. 146-54-3.rn.
103. (Adazine or Fluopromazine or Phenothiazine or Psyquil or Siquil or Triflupromazina or Triflupromazine or Trifluopromazine or Vesprin or Vetame).mp.
104. 53772-83-1.rn.
105. (Cisordinol or Clopixol or Ciatyl-Z or Clopenthixol or Clopentixol or Sedanxol or Zuclopenthixolum or Zuclopentixol or Zuclopenthixol or Zuklopentixol).mp.
106. or/42-105
107. atypical antipsychotic*.mp.
108. ((second or 2nd) adj generation adj antipsychotic*).tw.
109. ((third or 3rd) adj generation adj antipsychotic*).tw.
110. 71675-85-9.rn.
111. (Aminosultopride or Amisulprida or Amisulpride or Amisulpridum or Solian or Sulpitac).mp.
112. 129722-12-9.rn.
113. (Abilitat or Abilify or Aripiprazole or Discmelt or OPC 31 or OPC 14597).mp.
114. 65576-45-6.rn.
115. (Asenapine or EINECS 265-829-4).mp.
116. 132810-10-7.rn.
117. (Blonserin or AD 5423).mp.
118. 2058-52-8.rn.
119. (Clothiapine or Clotiapina or Clotiapine or Clotiapinum or Dibenzothiazepine or Etumina or Etumine or Entumin or Etomine or Entumine or HF 2159 or LW 2159 or "BRN 0568276").mp.
120. 5786-21-0.rn.
121. (Clozapin or Clozapina or Clozapine or Clozapinum or Clorazil or Clozaril or FazaClo or Leponex or LX 100-129 or Zaponex).mp.
122. 12688-68-5.rn.
123. Diazepine.mp.
124. Dibenzazepines.mp.
125. Dibenzothiazepines.mp.
126. (54739-18-3 or 61718-82-9).rn.
127. (dumirox or DU23000 or Fluvoxamina or fluvoxamine or Fluvoaminum or Fluvoxamine Maleate or Fevarin or Luvox or SME 3110).mp.
128. 133454-47-4.rn.
129. (Fanapt or Iloperidone or HP 873 or Zomaril).mp.
130. Isoxazoles.mp.
131. 5588-33-0.rn.
132. (Calodal or Lidanar or Lidanil or Mesoridazina or Mesoridazine or Mesoridazinum or Serentil or THD-2-SO).mp.
133. 89419-40-9.rn.
134. (Clospipramine or Cremin or Mosapramina or Mosapramine).mp.
135. 132539-06-1.rn.
136. (Zyprexa or Olantsapiini or Olanzapin or Olanzapina or Olanzapine or Olanzapinum or Olansek or Zalasta or Zypadhera).mp.
137. 144598-75-4.rn.
138. (9-Hydroxyrisperidone or Invega or Paliperidone or R 76477 or RO76477).mp.
139. 150915-41-6.rn.
140. (lullan or perospirone*).mp.
141. Piperidines.mp.
142. Pirenzepine.mp.
143. Pyrimidinones.mp.
144. 111974-69-7.rn.
145. (Co-Quetiapine or HSDB 7557 or Quetiapine or Seroquel).mp.
146. Quinolones.mp.
147. 80125-14-0.rn.
148. (FLA 731 or Remoxiprida or Remoxipride or Remoxipridum).mp.

149. 106266-06-2.rn.
150. (Apexidone or Psychodal or Risperdal or Risperidona or Risperidone or Risperidonum or Risperin or Risperilept or Rispolin or Spiron).mp.
151. 106516-24-9.rn.
152. (Lu 23-174 or Sertindol or Sertindole or Serdolect or Sertindolum).mp.
153. 15676-16-1.rn.
154. (Abilit or Aiglonyl or Alimoral or Calmoflorine or Championyl or Darleton or Desmenat or Dobren or Dogmatil or Dogmatyl or Dolmatil or Eclorion or Eglonil or Eglonyl or Enimon or Equilid or Eusulpid or Fardalan or Fidelan or Guastil or Isnamide or Kylistro or Lisopiride or Mariastel or Meresa or Miradol or Mirbanil or Neogama or Normum or Nufarol or Omiryl or Omperan or Ozoderpin or Psicocen or Pyrkappl or Sernevin or Splotin or Stamonevrol or Sulparex or Sulpirid or Sulpirida or Sulpiride or Sulpiridum or Sulpor or Suprium or Sulpyrid or Trilan or Valirem or Zemorcon).mp.
155. thiazoles.mp.
156. 26615-21-4.rn.
157. (Lodepin or Nipolept or Zotepina or Zotepine or Zotepinum or Zoleptil).mp.
158. 146939-27-7.rn.
159. (ziprasidone or zeldox).tw.
160. or/107
161. or/106,160
162. infant.mp.
163. ($child$ or adolescen$ or p*ediatric$).mp.
164. or/162-163
165. and/41,161,164
166. limit 165 to yr="1987 -Current"
167. (young adj adult*).mp.
168. ((college or university) adj2 (age or student*)).tw.
169. or/167-168
170. and/41,161,169
171. limit 170 to yr="1987 -Current"
172. randomi$ed.ab. or randomly.tw. or random$.tw.
173. (placebo or groups or trials).ab.
174. $controlled clinical trial$.tw.
175. or/172-174
176. (cohort$ or longitudinal or retrospective or prospective or follow-up or case-control).tw.
177. 175 or 176
178. 165 and 177
179. limit 178 to (english language and yr="1987 -Current")
180. 169 and 177
181. limit 180 to (english language and yr="1987 -Current")
182. 179 or 181

Table B-6: CINAHL – EBSCO version

EBSCOHost_-CINAHL Plus with FullText 1987 to April Week 3 2010	Searched: 23Feb10 Results: 233
S83=S69 or S82 S82=S64 AND S78 AND S66 Limiters - Age Groups: Infant, Newborn 0-1 month, Infant, 1-23 months, Child, Preschool 2-5 years, Child, 6-12 years, Adolescence, 13-18 years S81=S64 AND S78 AND S66 Limiters - English Language; Language: English S80=S64 AND S78 AND S66 Limiters - Publication Year from: 1987-2010 S79=S64 AND S78 AND S66 S78=S77 AND (S35 OR S48) S77=S70 or S71 or S72 or S73 or S74 or S75 or S76 S76=TX Tourette syndrome S75=(MH "Tourette Syndrome") S74=TX anorexia S73=(MH "Anorexia Nervosa") or (MH "Anorexia") S72=TX ptsd S71=Post-traumatic stress and (disorder OR disease OR syndrome) S70=(MH "Stress Disorders, Post-Traumatic+") S69= S64 and S65 and S66 Limiters - Language: English; Age Groups: Infant, Newborn 0-1 month, Infant, 1-23 months, Child, Preschool 2-5 years, Child, 6-12 years, Adolescence, 13-18 years S68=S64 and S65 and S66 Limiters - Publication Year from: 1987-2010; English Language S67=S64 and S65 and S66 S66=S53 OR S58 S65=S19 ANd (S35 or S48)	

S64=S59 or S60 or S61 or S62 or S63
S63=TX ($child$ OR adolescen$ OR p*ediatric$)
S62=(MH "Pediatrics+")
S61=(MH "Adolescence+")
S60=(MH "Child+")
S59=(MH "Infant+")
S58=S54 or S55 or S56 or S57
S57=TX (cohort$ OR longitudinal OR retrospective OR prospective OR follow-up OR case-control)
S56=(MH "Case Control Studies+")
S55=TX retrospective stud*
S54=(MH "Prospective Studies+")
S53=S49 or S50 or S51 or S52
S52=("Placebo") or (MH "Placebos")
S51=TX randomi$ed
S50=(MH "Cochrane Library")
S49=(MH "Clinical Trials+")
S48=S36 or S37 or S38 or S39 or S40 or S41 or S42 or S43 or S44 or S45 or S46 or S47
S47=(MH "Antiinfective Agents, Quinolone")
S46=(MH "Thiazoles+")
S45=Pirenzepine
S44=(MH "Piperidines+")
S43=paliperidone
S42=(MH "Aripiprazole")
S41=ziprasidone
S40=(MH "Quetiapine")
S39=(MH "Olanzapine")
S38=(MH "Risperidone")
S37=(MH "Clozapine")
S36=atypical antipsychotics
S35=S20 or S21 or S22 or S23 or S24 or S25 or S26 or S27 or S28 or S29 or S30 or S31 or S32 or S33 or S34
S34=(MH "Indoles")
S33=(MH "Antipsychotic Agents, Butyrophenone+")
S32=(MH "Antipsychotic Agents, Phenothiazine+")
S31=methotrimeprazine
S30=(MH "Thioridazine")
S29=(MH "Trifluoperazine Hydrochloride")
S28=Thiothixene
S27=perphenazine
S26=molindone
S25=loxapine
S24=(MH "Haloperidol")
S23=(MH "Fluphenazine")
S22=(MH "Chlorpromazine")
S21=(MH "Tranquilizing Agents+")
S20=(MH "Antipsychotic Agents+")
S19=S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11 or S12 or S13 or S14 or S15 or S16 or S17 or S18
S18="depressive disorder"
S17=(MH "Obsessive-Compulsive Disorder+")
S16=TX (refractory OR chronic OR resistant) and depression
S15=(MH "Depression")
S14=(MH "Bipolar Disorder+")
S13=TX schizotypal personality disorder
S12="Oppositional defiant disorder"
S11=TX atypical autism
S10=(MH "Mental Disorders Diagnosed in Childhood+")
S9=(MH "Child Behavior Disorders+")
S8=(MH "Attention Deficit Hyperactivity Disorder")
S7=(MH "Movement Disorders+")
S6=(MH "Mental Retardation+")
S5=(MH "Schizophrenia, Childhood")
S4=(MH "Rett Syndrome")
S3=(MH "Autistic Disorder")
S2=(MH "Asperger Syndrome")
S1=(MH "Child Development Disorders, Pervasive+"

Table B-7: SCOPUS – Elsevier

SCOPUS - Elsevier 1987 to April Week 3 2010	Searched: 19Apr10 Results: 858
(((TITLE-ABS-KEY((infant) OR (*child*) OR (adolescen*) OR (p?ediatric) OR (young W/1 adult*) OR (college) OR (university))) AND ((TITLE-ABS-KEY((asperger sydrome) OR (autism OR autistic) OR (rett syndrome) OR (schizophrenia) OR (aggression) OR (sleep W/3 disorder) OR (insomnia) OR (agitation) OR (borderline personality disorder) OR (mood disorder) OR (mood lability) OR (self-injurious OR self-mutilating OR self-harm) OR (conduct disorder) OR (adhd) OR (attention deficit) OR (bipolar) OR (ocd) OR (obsessive-compulsive) OR (depression) OR (depressive disorder) OR (ptsd) OR (post-traumatic) OR (anorexia nervosa) OR (anorexia) OR (tic disorder) OR (tourette syndrome))) AND ((TITLE-ABS-KEY((typical W/2 antipsychotic*) OR (tranquiliz*) OR (neuroleptic) OR (first W/2 antipsychotic*) OR (azaperone) OR (butyrophenones) OR (clopenthixol) OR (chlorpromazine) OR (chlorprothixene) OR (dibenzoxazepines) OR (droperidol) OR (flupenthixol) OR (fluphenazine) OR (haloperidol) OR (indoles) OR (lithium) OR (loxapine) OR (methiothepin) OR (methotrimeprazine) OR (molindone) OR (penfluridol) OR (perazine) OR (perphenazine) OR (pimozide) OR (prochlorperazine) OR (promazine) OR (raclopride) OR (spiperone) OR (thioridazine) OR (thiothixene) OR (thioxanthenes) OR (tiapride) OR (trifluperidol) OR (trifluoperazine) OR (triflupromazine) OR (zuclopenthixol))) OR (TITLE-ABS-KEY((atypical W/2 antipsychotic*) OR (second W/2 antipsychotic*) OR (third W/2 antipsychotic*) OR (amisulpride) OR (aripiprazole) OR (asenapine) OR (blonanserin) OR (clotiapine) OR (clozapine) OR (diazepine) OR (dibenzazepines) OR (dibenzothiazepines) OR (fluvoxamine) OR (iloperidone) OR (isoxazoles) OR (mesoridazine) OR (mosapramine) OR (olanzapine) OR (paliperidone) OR (perospirone) OR (piperidines) OR (piperazines) OR (pirenzepine) OR (pyrimidinones) OR (quetiapine) OR (quinolones) OR (remoxipride) OR (risperidone) OR (sertindole) OR (sulpiride) OR (thiazoles) OR (zotepine) OR (ziprasidone))))) AND ((((SRCTYPE((randomized controlled trial) OR (randomised controlled trial) OR (controlled clinical trial)) OR TITLE((randomi?ed) OR (placebo) OR (drug therapy) OR (randomly) OR (trial) OR (groups)))) OR ((SRCTYPE((cohort stud*) OR (follow-up stud*) OR (longitudinal stud*) OR (prospective stud*) OR (retrospective stud*) OR (case-control stud*)) OR TITLE((cohort*) OR (longitudinal) OR (retrospective) OR (prospective) OR (follow-up) OR (case-control)) OR ABS((cohort*) OR (longitudinal) OR (retrospective) OR (prospective) OR (follow-up) OR (case-control))))))) AND (PUBYEAR AFT 1986 AND LANGUAGE(english))) AND NOT (((((TITLE-ABS-KEY((asperger sydrome) OR (autism) OR (rett syndrome) OR (schizophrenia) OR (mental retardation) OR (conduct disorder) OR (adhd) OR (attention deficit disorder) OR (bipolar) OR (ocd) OR (obsessive-compulsive) OR (depression) OR (ptsd) OR (post-traumatic) OR (anorexia nervosa) OR (anorexia) OR (tourette syndrome))) AND ((TITLE-ABS-KEY((antipsychotic*) OR (tranquiliz*) OR (chloropromazine) OR (fluphenazine) OR (haloperidol) OR (loxapine) OR (molindone) OR (perphenazine) OR (thiothixene) OR (trifluoperazine) OR (thioridazine) OR (methotrimeprazine) OR (phenothiazine) OR (butyrophenones) OR (thioxanthenes) OR (dibenzoxazepines) OR (indoles))) OR (TITLE-ABS-KEY((atypical antipsychotic*) OR (clozapine) OR (risperidone) OR (olanzapine) OR (quetiapine) OR (ziprasidone) OR (aripiprazole) OR (paliperidone) OR (isoxazoles) OR (dibenzothiazepines) OR (piperazines) OR (thiazoles) OR (quinolones))))) AND (SRCTYPE((randomized controlled trial) OR (randomised controlled trial) OR (controlled clinical trial)) OR TITLE((randomi?ed) OR (placebo) OR (drug therapy) OR (randomly) OR (trial) OR (groups)))) OR (((TITLE-ABS-KEY((asperger sydrome) OR (autism) OR (rett syndrome) OR (schizophrenia) OR (mental retardation) OR (conduct disorder) OR (adhd) OR (attention deficit disorder) OR (bipolar) OR (ocd) OR (obsessive-compulsive) OR (depression) OR (ptsd) OR (post-traumatic) OR (anorexia nervosa) OR (anorexia) OR (tourette syndrome))) AND ((TITLE-ABS-KEY((antipsychotic*) OR (tranquiliz*) OR (chloropromazine) OR (fluphenazine) OR (haloperidol) OR (loxapine) OR (molindone) OR (perphenazine) OR (thiothixene) OR (trifluoperazine) OR (thioridazine) OR (methotrimeprazine) OR (phenothiazine) OR (butyrophenones) OR (thioxanthenes) OR (dibenzoxazepines) OR (indoles))) OR (TITLE-ABS-KEY((atypical antipsychotic*) OR (clozapine) OR (risperidone) OR (olanzapine) OR (quetiapine) OR (ziprasidone) OR (aripiprazole) OR (paliperidone) OR (isoxazoles) OR (dibenzothiazepines) OR (piperazines) OR (thiazoles) OR (quinolones))))) AND (SRCTYPE((cohort stud*) OR (follow-up stud*) OR (longitudinal stud*) OR (prospective stud*) OR (retrospective stud*) OR (case-control stud*)) OR TITLE((cohort*) OR (longitudinal) OR (retrospective) OR (prospective) OR (follow-up) OR (case-control)) OR ABS((cohort*) OR (longitudinal) OR (retrospective) OR (prospective) OR (follow-up) OR (case-control))))) AND (TITLE-ABS-KEY((infant) OR (*child*) OR (adolescen*) OR (p?ediatric)))) AND (LIMIT-TO(DOCTYPE, "ar") OR LIMIT-TO(DOCTYPE, "cp") OR LIMIT-TO(DOCTYPE, "ip") OR LIMIT-TO(DOCTYPE, "ar")) AND (LIMIT-TO(EXACTKEYWORD, "Human") AND LIMIT-TO(DOCTYPE, "ar") OR LIMIT-TO(DOCTYPE, "cp") OR LIMIT-TO(DOCTYPE, "ip")) AND (LIMIT-TO(LANGUAGE, "English") AND LIMIT-TO(DOCTYPE, "ar") OR LIMIT-TO(DOCTYPE, "cp") OR LIMIT-TO(DOCTYPE, "ip")) AND (LIMIT-TO(PUBYEAR, 2010) OR LIMIT-TO(PUBYEAR, 2009) OR LIMIT-TO(PUBYEAR, 2008) OR LIMIT-TO(PUBYEAR, 2007) OR LIMIT-TO(PUBYEAR, 2006) OR LIMIT-TO(PUBYEAR, 2005) OR LIMIT-TO(PUBYEAR, 2004) OR LIMIT-TO(PUBYEAR, 2003) OR LIMIT-TO(PUBYEAR, 2002) OR LIMIT-TO(PUBYEAR, 2001) OR LIMIT-TO(PUBYEAR, 2000) OR LIMIT-TO(PUBYEAR, 1999) OR LIMIT-TO(PUBYEAR, 1998) OR LIMIT-TO(PUBYEAR, 1997) OR LIMIT-TO(PUBYEAR, 1996) OR LIMIT-TO(PUBYEAR, 1995) OR LIMIT-TO(PUBYEAR, 1994) OR LIMIT-TO(PUBYEAR, 1993) OR LIMIT-TO(PUBYEAR, 1992) OR LIMIT-TO(PUBYEAR, 1991) OR LIMIT-TO(PUBYEAR, 1990) OR LIMIT-TO(PUBYEAR, 1989) OR LIMIT-TO(PUBYEAR, 1988) OR LIMIT-TO(PUBYEAR, 1987) AND LIMIT-TO(DOCTYPE, "ar") OR LIMIT-TO(DOCTYPE, "cp") OR LIMIT-TO(DOCTYPE, "ip")) AND (LIMIT-TO(EXACTKEYWORD, "Human") OR LIMIT-TO(EXACTKEYWORD, "Adolescent") OR LIMIT-TO(EXACTKEYWORD, "Child") OR LIMIT-TO(EXACTKEYWORD, "School child") OR LIMIT-TO(EXACTKEYWORD, "Child, Preschool") AND LIMIT-TO(DOCTYPE, "ar") OR LIMIT-TO(DOCTYPE, "cp") OR LIMIT-TO(DOCTYPE, "ip")) AND (LIMIT-TO(LANGUAGE, "English") AND LIMIT-TO(DOCTYPE, "ar") OR LIMIT-TO(DOCTYPE, "cp") OR LIMIT-TO(DOCTYPE, "ip")) AND (LIMIT-TO(SUBJAREA, "MEDI") OR LIMIT-TO(SUBJAREA, "NEUR") OR LIMIT-TO(SUBJAREA, "PSYC") OR LIMIT-TO(SUBJAREA, "PHAR") OR LIMIT-TO(SUBJAREA, "MULT") AND LIMIT-TO(DOCTYPE, "ar") OR LIMIT-	

TO(DOCTYPE, "cp") OR LIMIT-TO(DOCTYPE, "ip")) AND (EXCLUDE(SUBJAREA, "AGRI") OR EXCLUDE(SUBJAREA, "ENVI") OR EXCLUDE(SUBJAREA, "CHEM") OR EXCLUDE(SUBJAREA, "DENT") OR EXCLUDE(SUBJAREA, "VETE") OR EXCLUDE(SUBJAREA, "MATH") OR EXCLUDE(SUBJAREA, "ENGI") OR EXCLUDE(SUBJAREA, "ECON") AND LIMIT-TO(DOCTYPE, "ar") OR LIMIT-TO(DOCTYPE, "cp") OR LIMIT-TO(DOCTYPE, "ip")) AND (LIMIT-TO(EXACTKEYWORD, "Human") AND LIMIT-TO(DOCTYPE, "ar")) AND (LIMIT-TO(EXACTKEYWORD, "Human") OR LIMIT-TO(EXACTKEYWORD, "Human")) AND (LIMIT-TO(LANGUAGE, "English") AND LIMIT-TO(EXACTKEYWORD, "Human")) AND (LIMIT-TO(EXACTKEYWORD, "Human") AND LIMIT-TO(PUBYEAR, 2010) OR LIMIT-TO(PUBYEAR, 2009) OR LIMIT-TO(PUBYEAR, 2008) OR LIMIT-TO(PUBYEAR, 2007) OR LIMIT-TO(PUBYEAR, 2006) OR LIMIT-TO(PUBYEAR, 2005) OR LIMIT-TO(PUBYEAR, 2004) OR LIMIT-TO(PUBYEAR, 2003) OR LIMIT-TO(PUBYEAR, 2002) OR LIMIT-TO(PUBYEAR, 2001) OR LIMIT-TO(PUBYEAR, 2000) OR LIMIT-TO(PUBYEAR, 1999) OR LIMIT-TO(PUBYEAR, 1998) OR LIMIT-TO(PUBYEAR, 1997) OR LIMIT-TO(PUBYEAR, 1996) OR LIMIT-TO(PUBYEAR, 1995) OR LIMIT-TO(PUBYEAR, 1994) OR LIMIT-TO(PUBYEAR, 1993) OR LIMIT-TO(PUBYEAR, 1992) OR LIMIT-TO(PUBYEAR, 1991) OR LIMIT-TO(PUBYEAR, 1990) OR LIMIT-TO(PUBYEAR, 1989) OR LIMIT-TO(PUBYEAR, 1988) OR LIMIT-TO(PUBYEAR, 1987)) AND (LIMIT-TO(EXACTKEYWORD, "Human") OR LIMIT-TO(EXACTKEYWORD, "Human") OR LIMIT-TO(EXACTKEYWORD, "Adolescent") OR LIMIT-TO(EXACTKEYWORD, "Child") OR LIMIT-TO(EXACTKEYWORD, "School child") OR LIMIT-TO(EXACTKEYWORD, "Child, Preschool")) AND (LIMIT-TO(LANGUAGE, "English") AND LIMIT-TO(EXACTKEYWORD, "Human")) AND (LIMIT-TO(SUBJAREA, "MEDI") OR LIMIT-TO(SUBJAREA, "NEUR") OR LIMIT-TO(SUBJAREA, "PSYC") OR LIMIT-TO(SUBJAREA, "PHAR") OR LIMIT-TO(SUBJAREA, "MULT") AND LIMIT-TO(EXACTKEYWORD, "Human")) AND (EXCLUDE(SUBJAREA, "AGRI") OR EXCLUDE(SUBJAREA, "ENVI") OR EXCLUDE(SUBJAREA, "CHEM") OR EXCLUDE(SUBJAREA, "DENT") OR EXCLUDE(SUBJAREA, "VETE") OR EXCLUDE(SUBJAREA, "MATH") OR EXCLUDE(SUBJAREA, "ENGI") OR EXCLUDE(SUBJAREA, "ECON") AND LIMIT-TO(EXACTKEYWORD, "Human")) AND (LIMIT-TO(LANGUAGE, "English") AND LIMIT-TO(DOCTYPE, "ar")) AND (LIMIT-TO(LANGUAGE, "English") AND LIMIT-TO(EXACTKEYWORD, "Human")) AND (LIMIT-TO(LANGUAGE, "English") OR LIMIT-TO(LANGUAGE, "English")) AND (LIMIT-TO(LANGUAGE, "English") AND LIMIT-TO(PUBYEAR, 2010) OR LIMIT-TO(PUBYEAR, 2009) OR LIMIT-TO(PUBYEAR, 2008) OR LIMIT-TO(PUBYEAR, 2007) OR LIMIT-TO(PUBYEAR, 2006) OR LIMIT-TO(PUBYEAR, 2005) OR LIMIT-TO(PUBYEAR, 2004) OR LIMIT-TO(PUBYEAR, 2003) OR LIMIT-TO(PUBYEAR, 2002) OR LIMIT-TO(PUBYEAR, 2001) OR LIMIT-TO(PUBYEAR, 2000) OR LIMIT-TO(PUBYEAR, 1999) OR LIMIT-TO(PUBYEAR, 1998) OR LIMIT-TO(PUBYEAR, 1997) OR LIMIT-TO(PUBYEAR, 1996) OR LIMIT-TO(PUBYEAR, 1995) OR LIMIT-TO(PUBYEAR, 1994) OR LIMIT-TO(PUBYEAR, 1993) OR LIMIT-TO(PUBYEAR, 1992) OR LIMIT-TO(PUBYEAR, 1991) OR LIMIT-TO(PUBYEAR, 1990) OR LIMIT-TO(PUBYEAR, 1989) OR LIMIT-TO(PUBYEAR, 1988) OR LIMIT-TO(PUBYEAR, 1987)) AND (LIMIT-TO(LANGUAGE, "English") AND LIMIT-TO(EXACTKEYWORD, "Human") OR LIMIT-TO(EXACTKEYWORD, "Adolescent") OR LIMIT-TO(EXACTKEYWORD, "Child") OR LIMIT-TO(EXACTKEYWORD, "School child") OR LIMIT-TO(EXACTKEYWORD, "Child, Preschool")) AND (LIMIT-TO(LANGUAGE, "English") OR LIMIT-TO(LANGUAGE, "English")) AND (LIMIT-TO(LANGUAGE, "English") AND LIMIT-TO(SUBJAREA, "MEDI") OR LIMIT-TO(SUBJAREA, "NEUR") OR LIMIT-TO(SUBJAREA, "PSYC") OR LIMIT-TO(SUBJAREA, "PHAR") OR LIMIT-TO(SUBJAREA, "MULT")) AND (LIMIT-TO(LANGUAGE, "English") AND EXCLUDE(SUBJAREA, "AGRI") OR EXCLUDE(SUBJAREA, "ENVI") OR EXCLUDE(SUBJAREA, "CHEM") OR EXCLUDE(SUBJAREA, "DENT") OR EXCLUDE(SUBJAREA, "VETE") OR EXCLUDE(SUBJAREA, "MATH") OR EXCLUDE(SUBJAREA, "ENGI") OR EXCLUDE(SUBJAREA, "ECON")) AND (EXCLUDE(SUBJAREA, "ENGI") OR EXCLUDE(SUBJAREA, "VETE") AND LIMIT-TO(DOCTYPE, "ar")) AND (EXCLUDE(SUBJAREA, "ENGI") OR EXCLUDE(SUBJAREA, "VETE") AND LIMIT-TO(EXACTKEYWORD, "Human")) AND (LIMIT-TO(LANGUAGE, "English") AND EXCLUDE(SUBJAREA, "ENGI") OR EXCLUDE(SUBJAREA, "VETE")) AND (EXCLUDE(SUBJAREA, "ENGI") OR EXCLUDE(SUBJAREA, "VETE") AND LIMIT-TO(PUBYEAR, 2010) OR LIMIT-TO(PUBYEAR, 2009) OR LIMIT-TO(PUBYEAR, 2008) OR LIMIT-TO(PUBYEAR, 2007) OR LIMIT-TO(PUBYEAR, 2006) OR LIMIT-TO(PUBYEAR, 2005) OR LIMIT-TO(PUBYEAR, 2004) OR LIMIT-TO(PUBYEAR, 2003) OR LIMIT-TO(PUBYEAR, 2002) OR LIMIT-TO(PUBYEAR, 2001) OR LIMIT-TO(PUBYEAR, 2000) OR LIMIT-TO(PUBYEAR, 1999) OR LIMIT-TO(PUBYEAR, 1998) OR LIMIT-TO(PUBYEAR, 1997) OR LIMIT-TO(PUBYEAR, 1996) OR LIMIT-TO(PUBYEAR, 1995) OR LIMIT-TO(PUBYEAR, 1994) OR LIMIT-TO(PUBYEAR, 1993) OR LIMIT-TO(PUBYEAR, 1992) OR LIMIT-TO(PUBYEAR, 1991) OR LIMIT-TO(PUBYEAR, 1990) OR LIMIT-TO(PUBYEAR, 1989) OR LIMIT-TO(PUBYEAR, 1988) OR LIMIT-TO(PUBYEAR, 1987)) AND (EXCLUDE(SUBJAREA, "ENGI") OR EXCLUDE(SUBJAREA, "VETE") AND LIMIT-TO(EXACTKEYWORD, "Human") OR LIMIT-TO(EXACTKEYWORD, "Adolescent") OR LIMIT-TO(EXACTKEYWORD, "Child") OR LIMIT-TO(EXACTKEYWORD, "School child") OR LIMIT-TO(EXACTKEYWORD, "Child, Preschool")) AND (LIMIT-TO(LANGUAGE, "English") AND EXCLUDE(SUBJAREA, "ENGI") OR EXCLUDE(SUBJAREA, "VETE")) AND (EXCLUDE(SUBJAREA, "ENGI") OR EXCLUDE(SUBJAREA, "VETE") OR LIMIT-TO(SUBJAREA, "MEDI") OR LIMIT-TO(SUBJAREA, "NEUR") OR LIMIT-TO(SUBJAREA, "PSYC") OR LIMIT-TO(SUBJAREA, "PHAR") OR LIMIT-TO(SUBJAREA, "MULT")) AND (EXCLUDE(SUBJAREA, "ENGI") OR EXCLUDE(SUBJAREA, "VETE") OR EXCLUDE(SUBJAREA, "AGRI") OR EXCLUDE(SUBJAREA, "ENVI") OR EXCLUDE(SUBJAREA, "CHEM") OR EXCLUDE(SUBJAREA, "DENT") OR EXCLUDE(SUBJAREA, "VETE") OR EXCLUDE(SUBJAREA, "MATH") OR EXCLUDE(SUBJAREA, "ENGI") OR EXCLUDE(SUBJAREA, "ECON"))

Table B-8: ProQuest Dissertations International

ProQuest Dissertations International 1987 to February Week 3 2010	Searched: 26Feb10 Results: 13
((asperger) OR (autistic disorder) OR autism OR schizophrenia OR (bipolar disorder) OR (depression) OR (bipolar disorder)	

OR (obsessive-compulsive) OR (post-traumatic) OR (anorexia nervosa) OR anorexia) AND (antipsychotics) AND (child OR adolescent OR pediatric OR infant) AND PDN(>1/1/1987) AND PDN(<12/31/2010)

Table B-9: TOXLINE (TOXNET)

TOXLINE (TOXNET) 1987 to February Week 3 2010	Searched: 26Feb10 Results: 12
([na] (antipsychotics OR antipsychotic agents) AND ((asperger OR asperger syndrome) OR (autism OR autistic disorder) OR bipolar OR obsessive-compulsive OR (adhd OR attention deficit disorder with hyperactivity) OR (anorexia) OR post-traumatic OR (schizophrenia)) AND ((children OR child) OR (infant) OR (adolescent) OR (child))) AND 1987:2010 [yr] AND (eng [la])	

Table B-10: ClinicalTrials.gov and WHO

ClinicalTrials.gov 1987 to February Week 3 2010	Searched: 23Feb10 Results: 200
((asperger) OR (autistic disorder) OR autism OR schizophrenia OR (bipolar disorder) OR (depression) OR (bipolar disorder) OR (obsessive-compulsive) OR (post-traumatic) OR (anorexia nervosa) OR anorexia) AND (antipsychotics) AND (child OR adolescent OR pediatric OR infant) AND PDN(>1/1/1987) AND PDN(<12/31/2010)	

Appendix C. Forms

C1. Eligibility Criteria

C2. Methodological Quality Assessment:
Randomized Controlled and Controlled Clinical Trials
Cohort Studies

C3. Data Extraction

C1. Eligibility Criteria

CRITERIA	Yes	No	Unclear
1. PUBLICATION TYPE			
a) Report of primary research	☐	☐	☐
2. STUDY DESIGN			
a) Comparative study design; one of: i. RCT ii. NRCT iii. Cohort (prospective or retrospective)	☐	☐	☐
3. POPULATION			
a) Children, youth or young adults (≤24 years); include if ≥80% enrolled patients ≤24 years or there is a subgroup analysis for ≤24	☐	☐	☐
b) Diagnosis of: • PDD (autistic, Rett, childhood disintegrative, Asperger's, PDD NOS) • DBD (ADHD, conduct, oppositional defiant, disruptive behaviour NOS) • Bipolar disorder (manic/depressive phases, rapid cycling, mixed states) • Schizophrenia / schizophrenia-related psychoses (schizoaffective, drug-induced psychosis) • Tourette's, OCD, PTSD, anorexia nervosa OR behaviour issues (aggression, agitation, behavioural dyscontrol, self-injurious, anxiety, sleep disturbance behaviours)	☐	☐	☐
4. INTERVENTION			
a) Comparison of at least 2 of the following FDA-approved drugs, *OR* one drug vs. placebo, *OR* one drug with comparison of 2+ doses: • Second generation: aripiprazole, asenapine, clozapine, iloperidone, olanzapine, paliperidone, quetiapine, risperidone, ziprasidone • First generation: chlorpromazine, droperidol, fluphenazine, haloperidol, loxapine, perphenazine, pimozide, prochlorperazine, thiothixene, thioridazine, trifluoperazine	☐	☐	☐
5. OUTCOME			
a) One of the following outcomes: • Symptom response (primary outcome) • Response rates, duration of response, remission, relapse, speed of response, time to discontinuation of medication • Growth and maturation • Cognitive and emotional development • Suicide-related behaviors or death by suicide • Medication adherence and persistence • School performance / attendance • Work-related functional capacity • Patient insight into illness • Patient or parent/care provider reported outcomes, including levels of physical activity/ inactivity, diet • Health-related quality of life • Legal/ justice system interaction • Health-care system utilization • "outcomes that matter" to children, youth and families • AE (overall, specific, WAE, time to WAE, persistence, reversibility)	☐	☐	☐

Comments:

REVIEWER'S DECISION : Include ☐ Exclude ☐ Unsure ☐

C2. Methodological Quality Assessment

Randomized Controlled Trials and Controlled Clinical Trials

The Cochrane Collaboration's tool for assessing risk of bias			
Domain	**Description**	**Review authors' judgment**	**Consensus (circle)**
Sequence generation		Was the allocation sequence adequately generated? YES / NO / UNCLEAR	YES NO UNCLEAR
Allocation concealment		Was allocation adequately concealed? YES / NO / UNCLEAR	YES NO UNCLEAR
Blinding of participants, personnel and outcome assessors, *Outcome:*	Subjective measures	Was knowledge of the allocated intervention adequately prevented during the study? YES / NO / UNCLEAR	YES NO UNCLEAR
	Objective measures	YES / NO / UNCLEAR	
Incomplete outcome data, *Outcome:*	Subjective measures	Were incomplete outcome data adequately addressed? YES / NO / UNCLEAR	YES NO UNCLEAR
	Objective measures	YES / NO / UNCLEAR	
Selective outcome reporting		Are reports of the study free of suggestion of selective outcome reporting? YES / NO / UNCLEAR	YES NO UNCLEAR
Other sources of bias		Was the study apparently free of other problems that could put it at a high risk of bias? YES / NO / UNCLEAR	YES NO UNCLEAR
Overall risk of bias	Subjective measures	HIGH / LOW / UNCLEAR	HIGH LOW UNCLEAR
	Objective measures	HIGH / LOW / UNCLEAR	

Cohort Studies

NEWCASTLE - OTTAWA QUALITY ASSESSMENT SCALE
COHORT STUDIES

Selection

1) Representativeness of the cohort exposed to anti-psychotic drug
   a) truly representative of the diagnosis under study in a paediatric patient in the community ✸
   b) somewhat representative of the diagnosis under study in a paediatric patient in the community ✸
   c) selected group of users, eg all male patients, mental retardation comorbidity
   d) no description of the derivation of the cohort

2) Selection of the comparator cohorts
   a) drawn from the same community as the exposed cohort ✸
   b) drawn from a different source
   c) no description of the derivation of the non exposed cohort

3) Ascertainment of exposure
   a) secure record (eg database, medical records) ✸
   b) structured interview ✸
   c) written self report
   d) no description

Comparability

1) Comparability of cohorts on the basis of the design or analysis
   a) study controls for disease severity OR age ✸
   b) study controls for any additional factor ✸
   c) none

Outcome

1) Assessment of outcome
   a) independent blind assessment ✸
   b) record linkage ✸
   c) self report
   d) no description

2) Was follow-up long enough for outcomes to occur
   a) yes (time points to be specified for both short and long-term outcomes of interest) ✸
   b) no

3) Adequacy of follow up of cohorts
   a) complete follow up - all subjects accounted for ✸
   b) subjects lost to follow up unlikely to introduce bias - small number lost - > 90% follow up, or description provided of those lost) ✸
   c) follow up rate < 75% and no description of those lost
   d) no statement

TOTAL: _____✸

Note: A study can be awarded a maximum of one star for each numbered item within the Selection and Outcome categories. A maximum of two stars can be given for Comparability.

C3. Data Extraction

I. Coder Information

Reference ID:	First Author:	Year:
DE initials:	DV initials:	Relevant to questions: ☐ KQ1; ☐ KQ2; ☐ KQ3; ☐ KQ4

II. Study Characteristics

Country:	Publication type:	Study design:
Trial type:	Number of centers:	Setting:
Study dates (e.g., Jan 1998 to Feb 2000):	Funding source: ☐ Industry ☐ No funding ☐ Government ☐ Other ☐ Academic ☐ ND ☐ Foundation	
Specify industry firms:	Specify "Other" funding:	

III. Study Phases

Did the study describe a run-in phase?	Run-in phase duration*:
Run-in phase protocol:	Blinding:
Washout period (X-over)*:	Treatment duration*:

IV. Clinical Population

Condition category:			Specify "multiple" categories:
Primary diagnoses:			
PDD: ☐ Autism Spectrum ☐ Autistic ☐ Rett ☐ Childhood disintegrative ☐ Asperger's ☐ PDD NOS ☐ Specific diagnoses ND	*DBD:* ☐ ADHD ☐ Conduct disorder ☐ Oppositional defiant ☐ Disruptive behaviour NOS ☐ Specific diagnoses ND	*Bipolar:* ☐ Manic or depressive phases ☐ Rapid cycling ☐ Mixed states ☐ Specific diagnoses ND	*Schizophrenia-related:* ☐ Schizophrenia spectrum ☐ Schizophrenia ☐ Schizoaffective disorder ☐ Substance-induce psychosis ☐ Specific diagnoses ND
Behavioural issues: ☐ Aggression ☐ Agitation ☐ Anxiety ☐ Behavioural dyscontrol	☐ Irritability ☐ Mood lability ☐ Self-injurious behaviour ☐ Sleep disorder	*Other:* ☐ Anorexia nervosa ☐ Obsessive compulsive ☐ Post-traumatic stress disorder ☐ Tourette's / tics	
Diagnostic criteria:		List other diagnostic criteria:	
☐ DSM IV - TR ☐ DSM IV ☐ DSM III – TR	☐ ICD 10 ☐ ICD 9 ☐ Other ☐ ND		

Practitioner who made diagnosis:	Professionals providing care/monitoring:
Treatment history:	Psychotic episodes:
Inclusion criteria:	Exclusion criteria:

SECTION A: Notes / Comments

V. Intervention

	Group 1	Group 2	Group 3	Group 4
Generic drug name				
Co-intervention(s)				
Dosing variability				
No. times per day				
Route of administration				
Initiation dose (mg/day)				
Target dose(s) (mg/day)				
Dose range (mg/day)				
Mean daily dose (mg/day)				
Rules for upward dose adjustment				
Rules for downward dose adjustment				
Permitted drugs (protocol)				
Prohibited drugs (protocol)				
Actual concurrent drugs (n)				
Actual concurrent non-pharmaceutical tx (n)				
Compliance measured	Specify "Other":			

VI. Baseline Characteristics

	Group 1	Group 2	Group 3	Group 4	TOTAL
Pts enrolled (n)					
Pts analyzed (n)					
Pts completed (n)					
Age – mean/SD					
Age – median					
Age – range					
Age – other					
Males (n)					
Males (%)					

Caucasian (%)										
Ethnicities (n)										
Parent SES (n)										
Treatment naïve (n)										
Inpatients (n)										
First episode psychosis (n)										
No. past psychiatric admissions										
Tanner stage										
Age at onset										
Illness duration										
Weight (kg)										
Height (cm)										
BMI										
IQ										
Specify IQ measure										
PANSS										
CGI severity										
BPRS										
GAF										
YMRS										
Diagnosis breakdown (n)										
MR (n)										
Psychosis (n)										
Comorbid ADHD (n)										
Comorbid DBD (n)										
Comorbid substance abuse (n)										
Other comorbidities (n)										
Other:										
Other:										
Other:										
Other:										
Other:										
Other:										
Other:										
Other:										

SECTION B: Notes / Comments

VII. Outcomes

a. SCALES (EFFICACY and SAFETY)

Scales	
☐ Aberrant behavior checklist (ABC)	☐ Abnormal involuntary movements scale
☐ Behavior activity rating scale	☐ Brief psychiatric rating scale (BPRS)
☐ Calgary depression scale of schizophrenia	☐ Child mania rating scale
☐ Children's aggression scale	☐ Children's depression rating scale
☐ Children's global assessment scale	☐ Children's psychiatric rating scale
☐ Children's Yale-Brown obsessive compulsive scale	☐ Clinical global impression-Improvement (CGI–I)
☐ Clinical global impressions–Severity (CGI–S)	☐ Clinical global impressions – any other
☐ Global assessment of functioning	☐ Hamilton depression scale
☐ Montgomery-Asberg Depression rating scale	☐ Nisonger child behavior rating form
☐ Patient global impressions	☐ Positive and negative syndrome scale (PANSS)
☐ Ritvo-Freeman real life rating scale	☐ Scale assessment of negative symptoms
☐ Tourette symptom global scale	☐ Vineland adaptive behavior scales
☐ Yale global tic severity scale	☐ Young mania rating scale
Other Scales	

b. OTHER EFFICACY OUTCOMES

Other Short- and Long-term Outcomes	
☐ Response, remission, relapse , etc. Specify:	
☐ Growth & maturation Specify:	
☐ Cognitive & emotional development Specify:	
☐ Suicide behaviours or death Specify:	
☐ Medication adherence/persistence Specify:	
☐ School performance/attendance Specify:	
☐ Work-related functional capacity Specify:	
☐ Patient insight into illness Specify:	
☐ Patient/provider related outcomes, e.g. physical activity, diet, calories, etc. Specify:	
☐ Health-related quality of life Specify:	
☐ Legal/justice system interactions Specify:	
☐ Health care system utilization Specify:	
Other:	Other:
Other:	Other:
Other:	Other:

SAFETY

Major Adverse Events	
☐ Mortality (not suicide)	☐ Cerebrovascular disease-related events
☐ Development of diabetes mellitus	☐ Diabetic ketoacidosis
☐ Neuroleptic malignant syndrome	☐ Seizures
☐ Tardive dyskinesia	☐ Cardiomyopathies
☐ Cardiac arrhythmias	☐ Agranulocytosis
General Adverse Events	
☐ Extrapyramidal effects	☐ Weight gain
☐ Agitation	☐ Constipation
☐ Sedation	☐ Elevated cholesterol
☐ Elevated transaminases	☐ AE related to prolactin elevations
☐ Galactorrhea / bloody galactorrhea	☐ Exercise intolerance
☐ Precocious puberty	

Other Adverse Events (not listed above)		
☐ Abdominal pain/cramps	☐ Akathisia	☐ Allergic reaction
☐ Anxiety	☐ Appetite changes	☐ Blurred vision
☐ Breathing difficulty/asthma	☐ Chest pain	☐ Confusion
☐ Conjunctivitis	☐ Cough	☐ Depression
☐ Dizziness	☐ Dry skin	☐ Edema
☐ Enuresis	☐ Fatigue/tiredness	☐ Fever
☐ Headache	☐ Hostility	☐ Insomnia
☐ Itches	☐ Memory impairment	☐ Muscle rigidity
☐ Muscle pain	☐ Nasal congestion/pharyngitis	☐ Nausea
☐ Nervousness	☐ Otalgia (ear ache)	☐ Paresthesias
☐ Sialorrhea (excessive saliva)	☐ Somnolence	☐ Sweating
☐ Tremors	☐ Vomiting or dyspepsia	

VIII. Conclusions

Briefly summarize author conclusions:

REFERENCES TO BE CHECKED:

ASSOCIATED PUBLICATIONS:

Appendix D. Methodological Quality of Studies Included in the Review

Table D1. Methodological quality of randomized controlled trials (RCTs) and non-randomized controlled (NRCTs)

Author, Year Study design	Sequence generation	Allocation concealment	Blinding (subjective)	Blinding (objective)	Incomplete outcome (subjective)	Incomplete outcome (objective)	Selective outcome reporting	Other sources of bias	Overall (subjective)	Overall (objective)
Aman, 2009 RCT	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	No	High	High
Aman, 2002 RCT	Yes	Unclear	Yes	Yes	No	No	Yes	No	High	High
Arango, 2009 RCT	Unclear	Unclear	Unclear	Yes	No	No	Yes	No	High	High
Armenteros, 2007 RCT	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	No	High	High
Berger, 2008 RCT	Yes	Yes	Yes	Yes	No	Unclear	Yes	No	High	High
Biederman, 2005 RCT	Unclear	Unclear	No	No	No	No	Unclear	No	High	High
Bruggeman, 2001 RCT	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	No	High	High
Buitelaar, 2001 RCT	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	No	High	High
Connor, 2008 RCT	Unclear	Yes	Yes	Yes	Unclear	Unclear	Yes	No	High	High
Crocq, 2007 NRCT	No	No	NA	Yes	NA	Unclear	Yes	Unclear	NA	High
de Haan, 2003 RCT	Yes	Unclear	Unclear	NA	No	NA	Yes	Yes	High	NA
DelBello, 2009 RCT	Yes	Yes	Unclear	Yes	Unclear	Unclear	Yes	No	High	High
DelBello, 2008 RCT	Unclear	Unclear	No	Unclear	No	No	Yes	No	High	High
DelBello, 2002 RCT	Yes	Yes	Unclear	Unclear	Yes	Yes	Yes	No	High	High
Findling, 2009 RCT	Unclear	Unclear	Yes	Yes	No	No	Yes	No	High	High
Findling, 2008 RCT	Yes	Unclear	Unclear	Unclear	Yes	Yes	Unclear	Yes	High	High
Findling, 2000 RCT	Yes	Yes	Yes	Yes	No	No	Yes	No	High	High
Gilbert, 2004 RCT	Yes	Yes	Yes	Yes	No	No	No	No	High	High

NRCT = non-randomized controlled trial; RCT = randomized controlled trial

Table D1. Methodological quality of randomized controlled trials (RCTs) and non-randomized controlled (NRCTs) (continued)

Author, Year Study design	Sequence generation	Allocation concealment	Blinding (subjective)	Blinding (objective)	Incomplete outcome (subjective)	Incomplete outcome (objective)	Selective outcome reporting	Other sources of bias	Overall (subjective)	Overall (objective)
Haas, 2009 RCT	Unclear	Unclear	Unclear	Yes	No	No	Yes	No	High	High
Haas, 2009 RCT	Yes	Unclear	Unclear	Yes	Unclear	Unclear	Yes	No	High	High
Hellings, 2006 RCT	Unclear	Yes	Unclear	Yes	No	No	Yes	No	High	High
Hollander, 2006 RCT	Unclear	Unclear	Yes	Yes	Yes	Yes	Yes	No	High	High
Jensen, 2008 RCT	Yes	Unclear	No	Unclear	Unclear	Unclear	Yes	No	High	High
Kryzhanovskaya, 2009 RCT	Unclear	Unclear	Unclear	Unclear	No	No	Yes	No	High	High
Kumra, 2008 RCT	Yes	Yes	Unclear	Yes	No	No	Yes	Yes	High	High
Kumra, 1996 RCT	Yes	Yes	Yes	Yes	No	No	Yes	Unclear	High	High
Luby, 2006 RCT	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	High	High
Malone, 2001 RCT	Yes	Unclear	No	Yes	Yes	Yes	Yes	No	High	High
Marcus, 2009 RCT	Yes	Yes	Unclear	Unclear	No	No	Yes	No	High	High
McCracken, 2002 RCT	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	Unclear	Unclear	Unclear
Miral, 2008 RCT	Unclear	Unclear	Unclear	Yes	Yes	Yes	Yes	No	High	High
Mozes, 2006 RCT	Unclear	Unclear	No	No	No	No	Yes	Unclear	High	High
Nagaraj, 2006 RCT	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Unclear	Unclear	Unclear
NCT00090324, 2008 RCT	Unclear	Unclear	Unclear	Unclear	Yes	Yes	Yes	No	High	High
NCT00257166, 2008 RCT	Unclear	Yes	Yes	Yes	Yes	Yes	Yes	No	High	High
NCT00257192, 2010 RCT	Unclear	Yes	Yes	Yes	Yes	Yes	Unclear	No	High	High

Table D1. Methodological quality of randomized controlled trials (RCTs) and non-randomized controlled (NRCTs) (continued)

Author, Year Study design	Sequence generation	Allocation concealment	Blinding (subjective)	Blinding (objective)	Incomplete outcome (subjective)	Incomplete outcome (objective)	Selective outcome reporting	Other sources of bias	Overall (subjective)	Overall (objective)
Perry, 1989 RCT	Unclear	Unclear	Yes	Yes	No	No	No	Unclear	High	High
Reyes, 2006 RCT	Unclear	Unclear	Yes	Yes	No	No	Yes	No	High	High
Robb, 2009 RCT	Unclear	Unclear	Yes	Yes	Yes	Yes	Yes	No	High	High
Sallee, 2000 RCT	Unclear	Unclear	Unclear	Unclear	Yes	Yes	Yes	No	High	High
Sallee, 1997 RCT	Yes	Yes	Yes	Yes	Yes	Yes	Unclear	Unclear	Unclear	Unclear
Sallee, 1994 RCT	Unclear	Unclear	Unclear	Unclear	No	No	No	Yes	High	High
Scahill, 2003 RCT	Unclear	Yes	Yes	Yes	Yes	Yes	Yes	No	High	High
Schulz, 1996 NRCT	No	No	NA	No	NA	Yes	Yes	Unclear	NA	High
Sehgal, 1999 RCT	Unclear	Yes	Yes	NA	Yes	NA	Yes	Yes	High	NA
Shaw, 2006 RCT	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Unclear	Unclear	Unclear
Shea, 2004 RCT	Unclear	Unclear	Unclear	Unclear	Yes	Yes	Unclear	No	High	High
Sikich, 2008 RCT	Yes	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	Unclear	Unclear
Sikich, 2004 RCT	Yes	Unclear	Unclear	Unclear	No	No	Yes	No	High	High
Spencer, 1994 RCT	Unclear	Unclear	Yes	Yes	Yes	Yes	Unclear	Unclear	Unclear	Unclear
Swadi, 2010 RCT	Yes	Unclear	Unclear	Yes	No	No	Yes	No	High	High
Synder, 2002 RCT	Yes	Yes	Unclear	Yes	No	No	Yes	No	High	High
Tohen, 2007 RCT	Unclear	Unclear	Unclear	Unclear	Yes	Yes	Yes	No	High	High
Tramontina, 2009 RCT	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	High	High
Troost, 2005 RCT	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	High	High

Table D1. Methodological quality of randomized controlled trials (RCTs) and non-randomized controlled (NRCTs) (continued)

Author, Year Study design	Sequence generation	Allocation concealment	Blinding (subjective)	Blinding (objective)	Incomplete outcome (subjective)	Incomplete outcome (objective)	Selective outcome reporting	Other sources of bias	Overall (subjective)	Overall (objective)
Van Bellinghen, 2001 RCT	Unclear	Unclear	Unclear	Yes	Yes	Yes	Yes	No	High	High
Van Bruggen, 2003 RCT	Unclear	Unclear	No	Yes	Yes	Yes	No	No	High	High
Woods, 2003 RCT	Yes	Yes	Unclear	Unclear	No	No	Unclear	No	High	High
Yen, 2004 RCT	Unclear	Unclear	Unclear	Unclear	No	No	Yes	Yes	High	High

Table D2. Methodological quality of cohort studies

Author, Year Study design	Selection 1	Selection 2	Selection 3	Comparability	Outcome 1	Outcome 2	Outcome 3	Total Stars
Alacqua, 2008, RCS	B	A	A	C	B	A	A	6
Bastiaens, 2009, RCS	B	A	A	A and B	E	A	C	6
Correll, 2009 PCS	A	A	A	A and B	B	A	A	8
Findling, 2008 PCS	B	A	A	C	C	B	B	4
Fleischhaker, 2006 PCS	D	C	B	C	E	A	A	2
Fraguas, 2008 PCS	A	A	A	A and B	D	A	C	6
Friedlander, 2001 RCS	C	A	A	C	E	A	A	4
Gothelf, 2002 PCS	C	C	A	C	B	A	D	3
Hrdlicka, 2009 RCS	A	A	A	C	B	A	C	5
Jefferson, 1998 RCS	C	A	A	C	B	A	D	4
Khan, 2006 RCS	D	C	A	C	B	A	A	4
Kumra, 1998 PCS	B	A	B	C	E	A	A	5
Novaes, 2008 RCS	A	A	A	C	B	A	A	6
Ratzoni, 2002 PCS	D	C	B	C	E	A	A	3
Wudarsky, 1999 PCS	A	A	A	A	A	A	A	7

PCS = prospective cohort study; RCS = retrospective cohort study

Appendix E. Evidence Tables

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Alacqua, 2008{3005} **Country:** Italy **Condition category:** Multiple categories (DBD, PDD, schizophrenia-related, tics) **Questions:** KQ2 **Funding:** NR	**Recruitment dates:** Jan 2002 to Dec 2003 **Study design:** Retrospective cohort **Diagnostic criteria:** DSM-IV **Setting:** Outpatient/community	**Enrolled:** 73 **Analyzed:** 73 **Completed:** 50 **GROUP 1** **N:** 2 **Age, mean±SD (range):** 15.5±0.7 **Males %:** 50 **Caucasian %:** NR **Diagnostic breakdown (n):** psychosis (1), schizophrenia (1)	**Treatment duration:** 3 mo **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Clozapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 150±70.1	**Symptomatology (KQ1):** NR **AE (KQ2):** Behavioral issues, dyskinesia,dystonia, dermatologic AE, liver function, hepatic volume, prolactin, prolactin-related AE, sedation,sleepness, total AE, weight change	Adverse events occurred frequently during first 3 months of treatment with atypical antipsychotics.

ABC = Aberrant Behavior Checklist; ABC-C = Aberrant Behavior Checklist-Community; ADI-R = Autism Diagnostic Interview-Revised; ADOS = Autism Diagnostic Observation Schedule; AE = Adverse Event; ASD = autism spectrum disorder; β-HCG = beta human chorionic gonadotropin; BMI = body mass index; BPRS = Brief Psychiatric Rating Scale; BPRS-A = Brief Psychiatric Rating Scale-Anchored; C-DISC 4 = Computerized Diagnostic Interview Schedule for Children, version four; CARS = Childhood Autism Rating Scale; CAS-P = Children's Aggression Scale-Parent; CAS-T = Children's Aggression Scale-Teacher; CBCL = Child Behavior Checklist; CD = conduct disorder; CDRS-R = Children's Depression Rating Scale, Revised; CGI-C = Clinical Global Impression-Change; CGI-I = Clinical Global Impressions-Improvement; CGI-S = Clinical Global Impressions-Severity; CNS = central nervous system; COPS = Criteria of Prodromal Syndromes; CPRS = Children's Psychiatric Rating Scale; day = day(s); CPT = Continuous performance task ; DBD = disruptive behavior disorder; DICA-R = Diagnostic Interview for Children and Adolescents-Revised; DSM = Diagnostic and Statistical Manual of Mental Disorders; ECG = electrocardiogram; GAD = generalized anxiety disorder; HALFS = Health And Life Functioning Scale ; HIV = human immunodeficiency virus; hr = hour(s); IED = intermittent explosive disorder; IM = intramuscular; IQ = intelligence quotient; KID-SCID = childhood disorders form of the Structured Clinical Interview for DSM-IV Disorders; K-SADS = Kiddie-Schedule for Affective Disorders and Schizophrenia; K-SADS-E = Kiddie-Schedule for Affective Disorders and Schizophrenia (Epidemiological Version); K-SADS-P = Kiddie-Schedule for Affective Disorders and Schizophrenia (Present Episode Version); K-SADS-PL = Kiddie-Schedule for Affective Disorders and Schizophrenia (Present and Lifetime Version); KQ = key question; LT = long term; MAO-I = monoamine oxidase inhibitor; MDD = major depressive disorder; mo = month(s); MVLT = Modified Version of the California Verbal Learning Test; N = number; NCBRF = Nisonger Child Behavior Rating Form; NMS = neuroleptic malignant syndrome; NOS = not otherwise specified; NR = not reported; NRCT = non-randomized controlled trial; NSAID = non-steroidal anti-inflammatory drug; OAS = Overt Aggression Scale; ODD = oppositional defiant disorder; P-LES-Q = Pediatric Quality of Life Enjoyment and Satisfaction Questionnaire; PANSS = Positive and Negative Syndrome Scale; PDD = pervasive developmental disorder; PTSD = post-traumatic stress disorder; Q-LES-Q = Quality of Life Enjoyment and Satisfaction Questionnaire; RCT = randomized controlled trial; SA = substance abuse; SCID-I/P = Clinical Interview for DSM-IV-TR Axis I Disorders-Patient Edition; SSRI = selective serotonin reuptake inhibitor; ST = short term; TBI = traumatic brain injury; TSGS = Tourette's Syndrome Global Scale; TSSS = Tourette's Symptom Severity Scale; VABS = Vineland Adaptive Behavior Scale; WASH-U-KSADS = Washington University in St. Louis Kiddie Schedule for Affective Disorders and Schizophrenia; WISC = Wechsler Intelligence Scale for Children; YBOCS = Yale-Brown Obsessive Compulsive Scale; YGTSS = Yale Global Tic Severity Scale; YMRS = Young Mania Rating Scale; yr = year(s)

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Newcastle-Ottawa Scale: 6 stars	**Inclusion criteria:** (1) ≤18 yr, (2) received an incident treatment with atypical antipsychotics or SSRIs during the study period **Exclusion criteria:** NR	**Treatment naïve (n):** all **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 2** **N:** 24 **Age, mean±SD (range):** 14.7±2.3 **Males %:** 42 **Caucasian %:** NR **Diagnostic breakdown (n):** affective disorder (2), anxiety disease (4), autism (1), CD (1), MR (3), personality disorder (2), psychosis (9), schizophrenia (2) **Treatment naïve (n):** all **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 3** **N:** 2 **Age, mean±SD (range):** 16.5±1.5 **Males %:** 100 **Caucasian %:** NR **Diagnostic breakdown (n):** psychosis (2) **Treatment naïve (n):** all **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 4** **N:** 45 **Age, mean±SD (range):**	**Concurrent treatments:** NR **GROUP 2** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 7.1±4.4 **Concurrent treatments:** NR **GROUP 3** **Drug name:** Quetiapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 375±318.2 **Concurrent treatments:** NR **GROUP 4** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 2±1.3 **Concurrent treatments:** NR	**Other ST and LT outcomes (KQ3):** NR **Sub-populations (KQ4):** NR	

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Alacqua, 2008 (continued)		13±3.9 **Males %:** 80 **Caucasian %:** NR **Diagnostic breakdown (n):** ADHD (1), anxiety disease (2), autism (14), CD (7), conversion disorder (2), MR (8), psychosis (7), schizophrenia (2), tic disorder (2) **Treatment naïve (n):** all **Inpatients (n):** NR **First episode psychosis (n):** NR			

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Aman, 2009{447} **Country:** USA **Condition category:** DBD **Questions:** KQ1, KQ2, KQ3 **Funding:** NR **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (crossover) **Diagnostic criteria:** DSM-IV, IQ test (Stanford-Binet, Weschsler Intelligence, Kaufman Brief) **Setting:** Inpatient and outpatient **Inclusion criteria:** (1) 4–14 yr, (2) IQ ≤84, (3) ODD or CD, (4) dx of austistic or PDD NOS, (5) availability of a reliable informant, (6) good physical health **Exclusion criteria:** (1) presence of psychosis, (2) history of NMS, (3) history of severe drug allergy/hypersensitivity, (4) medical disease, (5) pregnancy	**Enrolled:** 16 **Analyzed:** 15 **Completed:** NR **GROUP 1** **N:** 16 (crossover) **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 2** **N:** 16 (crossover) **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR	**Treatment duration:** 4 wk **Run–in phase:** Yes **Run–in phase duration:** 1 wk **Permitted drugs: c**lonidine, lithium **Prohibited drugs:** NR **GROUP 1** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 1.7±1.3 (0.4–5) **Concurrent treatments:** psychostimulants (5) **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** NR	**Symptomatology (KQ1):** ABC, NCBRF **AE (KQ2):** Dyskinesia, SBP, DBP, pulse **Other ST and LT outcomes (KQ3):** Cognitive (MTS, STRM, CPT, GHT) **Sub-populations (KQ4):** NR	Risperidone may have a beneficial effect on efficiency or responding, activity level, static tremor, and aspects of behavior.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Aman, 2002{1017} **Country:** USA **Condition category:** DBD **Questions:** KQ1, KQ2, KQ3, KQ4 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** NR **Diagnostic criteria:** DSM-IV, NCBRF **Inclusion criteria:** (1) total rating of ≥24 on the conduct problem subscale of the NCBRF, (2) dx of CD, ODD, or DBD NOS, (3) dx of subaverage IQ (≥36 and ≤84) and a VABS score ≤84, (4) patients with ADHD eligible if meeting all other criteria, (5) healthy, (6) 5–12 yr, (7) symptoms sufficiently severe for antipsychotic treatment, (8) a responsible person to accompany patient to study visits, provide reliable assessments, dispense study medication **Exclusion criteria:** (1) dx of PDD, schizophrenia, other psychotic disorders, (2) head injury as a cause of intellectual disability,	**Enrolled:** 119 **Analyzed:** 118 **Completed:** 118 **GROUP 1** **N:** NR **Age, mean±SD (range):** 8.7±2.1 **Males %:** 85 **Caucasian %:** 51 **Diagnostic breakdown (n):** CD (9), CD + ADHD (12), DBD (1) DBD + ADHD (4), ODD (12), ODD+ ADHD (17) **Treatment naïve (n):** 55 **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (33), MR (borderline (32), mild (16), moderate (7)) **GROUP 2** **N:** NR **Age, mean±SD (range):** 8.1±2.3 **Males %:** 79 **Caucasian %:** 62 **Diagnostic breakdown (n):** CD (12), CD + ADHD (14), DBD (1) DBD + ADHD (2), ODD (13), ODD + ADHD (21) **Treatment naïve (n):** 63 **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (37), MR (borderline (28), mild	**Treatment duration:** 6 wk (11 mo extension) **Run–in phase:** Yes **Run–in phase duration:** 1 wk **Permitted drugs:** antihistamines, chloral hydrate, medication for EPS, melatonin, psychostimulants (dose stable for ≥30 day before study) **Prohibited drugs:** anticonvulsants, antidepressants, antipsychotics, carbamazepine, cholinesterase inhibitors, lithium, medications for sleep/anxiety, valproic acid **GROUP 1** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 1.2±0.6 **Concurrent treatments:** all groups: methylphenidate hydrochloride (35) **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** see group 1	**Symptomatology (KQ1):** ABC, BPI, CGI-I, NCBRF, VAS-MS **AE (KQ2):** ECG changes, EPS, prolactin, prolactin-related AE, SAE, sedation, total AE, WAE, weight change **Other ST and LT outcomes (KQ3):** Medication adherence, response (CGI) **Sub-populations (KQ4):** Gender (prolactin)	Risperidone was well tolerated and effective in children with disturbed behaviors and subaverage intelligence.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Aman, 2002 (continued)	(3) seizure disorder/ neuroleptics, (4) known hypersensitivity to risperidone or neuroleptics, (5) history of tardive dyskinesia or NMS, (6) serious or progressive illnesses, (7) presence of HIV, (8) use of an investigational drug within the previous 30 day, (9) previously received risperidone, (10) lab values outside of normal range unless not clinically relevant, (11) females of childbearing age, sexually active and not using birth control, (12) patients whose NCBRF conduct problem subscale score was reduced to <24 in response to a 1 wk placebo treatment before the study	(22), moderate (13))			

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Arango, 2009{160} **Country:** Spain **Condition category:** Psychosis **Questions:** KQ1, KQ2, KQ3 **Funding:** Industry, Academic **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** Inpatient **Diagnostic criteria:** DSM-IV, K-SADS-PL **Inclusion criteria:** (1) adolescents admitted to the hospital with psychosis (schizophrenia or any other psychotic disorder (DSM–IV)) **Exclusion criteria:** (1) psychotic symptoms appearing to result from acute intoxication or withdrawal (if psychotic symptoms did not persist after 14 day of a negative urine drug screening), (2) DSM–IV criteria for any substance abuse, MR, or PDD, (3) organic CNS disorder, (4) history of TBI with loss of consciousness, (5) IQ <70 and a clinical criterion of impaired functioning prior to the onset of the disorder, (6) pregnant or breast	**Enrolled:** 50 **Analyzed:** 49 **Completed:** 32 **GROUP 1** **N:** 26 **Age, mean±SD (range):** 15.7±1.4 **Males %:** 76 **Caucasian %:** 76 **Diagnostic breakdown (n):** bipolar disorder (5), other psychoses (12: major depressive episode with psychotic features (3), psychosis NOS (4), schizoaffective disorder (3), schizophreniform disorder (2)), schizophrenia (9) **Treatment naïve (n):** 10 **Inpatients (n):** all **First episode psychosis (n):** all **Comorbidities:** psychosis (all) **GROUP 2** **N:** 24 **Age, mean±SD (range):** 16.3±1.1 **Males %:** 79.2 **Caucasian %:** 87.5 **Diagnostic breakdown (n):** bipolar disorder (8), other psychoses (8; major depressive episode with psychotic features (2), psychosis NOS (2),	**Treatment duration:** 6 mo **Run–in phase:** Yes **Run–in phase duration:** 3–5 day **Permitted drugs:** adjunctive medications **Prohibited drugs:** antipsychotics **GROUP 1** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 9.7±6.6 **Concurrent treatments:** anticholinergics (8), antidepressants (10), antiepileptics (7), benzodiazepines (17), β–blockers (1), lithium (2) **GROUP 2** **Drug name:** Quetiapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 532.8±459.6 **Concurrent treatments:** analgesics (2), anticholinergics (3), antidepressants (8), antiepileptics (7), benzodiazepines (14), β–blockers (2), cough medications (1), iron compouNRs (1), lithium (6), NSAIDs (1)	**Symptomatology (KQ1):** CGAS, CGI-S, PANSS, SDQ, YMRS **AE (KQ2):** Akathisia, behavioral issues, BMI, constipation, hypokinesia, Orthostatic dizziness prolactin-related AE, SAE, sedation, tachycardia, total AE, weight change **Other ST and LT outcomes (KQ3):** Cognitive (cognitive domains), medication adherence **Sub-populations (KQ4):** NR	Psychotic symptoms in adolescents were reduced with both olanzapine and quetiapine, but cognitive measures were not improved. Significantly more weight gain was observed in patients treated with olanzapine.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Arango, 2009 (continued)	feeding, (7) taking olanzapine or quetiapine before enrolment	schizoaffective disorder (2), schizophreniform disorder (2)), schizophrenia (8) **Treatment naïve (n):** 15 **Inpatients (n):** all **First episode psychosis (n):** all **Comorbidities:** psychosis (all)			

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Armenteros, 2007{5152} **Country:** USA **Condition category:** ADHD with aggression **Questions:** KQ1, KQ2, KQ3 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** Outpatient/community **Diagnostic criteria:** DSM-IV, C-DISC 4 **Inclusion criteria:** (1) 7–12 yr, (2) constant dose of stimulant medication in the past 3 wk, (3) 3 acts of aggression in the past wk, 2 of which had to be acts of physical aggression against other people, objects, or self, (4) Aggression Questionnaire Predatory–Affective index score ≤0, (5) CGI–S ≥4, (6) Full Scale IQ ≥75, (7) normal results at screening from physical examination and laboratory tests **Exclusion criteria:** (1) substance use disorder, (2) unstable medical or neurological illness, (3) history of intolerance or failure to respond to an adequate trial of risperidone, (4) suicidal or homicidal	**Enrolled:** 25 **Analyzed:** 25 **Completed:** 23 **GROUP 1** **N:** 12 **Age, mean±SD (range):** 7.3±3.7 **Males %:** 83.3 **Caucasian %:** 50 **Treatment naïve (n):** 0 **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** MR (0), ODD (13), conduct disorder (6), GAD (1), separation anxiety disorder (3) **GROUP 2** **N:** 13 **Age, mean±SD (range):** 8.8±3.1 **Males %:** 92.3 **Caucasian %:** 46 **Diagnostic breakdown (n):** **Treatment naïve (n):** 0 **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** see group1	**Treatment duration:** 4 wk **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** current psychostimulants **Prohibited drugs:** all medications other than current psychostimulants **GROUP 1** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 1.1±0.6 **Concurrent treatments:** all groups: methylphenidate (15), mixed salts amphetamine (10) **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 1±0.5 **Concurrent treatments:** see group 1	**Symptomatology (KQ1):** CGI-I, CGI-S **AE (KQ2):** Behavioral issues, BMI, somnolence, total AE, WAE, weight change **Other ST and LT outcomes (KQ3):** Medication adherence, response (CAS-P, CAS-T, CGI-I) **Sub-populations (KQ4):** NR	Compared to placebo, risperidone was modestly effective in combination with psychostimulants for treatment–resistant agression in ADHD.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Bastiaens, 2009{2575} **Country:** USA **Condition category:** Behavioral issues (aggression) **Questions:** KQ1, KQ2, KQ3, KQ4 **Funding:** Internal funding **Newcastle-Ottawa Scale:** 6 stars	**Recruitment dates:** Dec 2004 to Sep 2005 **Study design:** Retrospective cohort **Setting:** Outpatient/community **Diagnostic criteria:** DSM-IV, Mini International Neuropsychiatric Interview for Children and Adolescents, Child/Adolescent Symptom Inventory **Inclusion criteria:** (1) 6–18 yr, (2) clinically significant aggressive behavior **Exclusion criteria:** NR	**Enrolled:** 46 **Analyzed:** 34 **Completed:** 34 **GROUP 1** **N:** 24 **Age, mean±SD (range):** 11.7±2.4 **Males %:** 83 **Caucasian %:** NR **Diagnostic breakdown (n):** bipolar disorder (6), CD (8), depressive disorder (0), mood disorder NOS (6), PDD (0), psychotic disorder (4) **Treatment naïve (n):** 18 **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 2** **N:** 22 **Age, mean±SD (range):** 12.1±2.9 **Males %:** 91 **Caucasian %:** NR **Diagnostic breakdown (n):** bipolar disorder (6), CD (6), depressive disorder (6), mood disorder NOS (2), PDD (2), psychotic disorder (0) **Treatment naïve (n):** 16 **Inpatients (n):** NR **First episode psychosis (n):** NR	**Treatment duration:** 8.7 wk **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** stable doses of concomitant medications **Prohibited drugs:** NR **GROUP 1** **Drug name:** Aripiprazole **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 4.5±2.3 **Concurrent treatments:** atomoxetine (8), stimulants (2) **GROUP 2** **Drug name:** Ziprasidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 42.9±18 **Concurrent treatments:** atomoxetine (6), stimulants (8)	**Symptomatology (KQ1):** CGI-I, GAF, OAS, YMRS **AE (KQ2):** Behavioral issues, EPS, sedation, WAE, weight change **Other ST and LT outcomes (KQ3):** Health related quality of life (HALFS) **Sub-populations (KQ4):** Age, gender (OAS)	Aripiprazole and ziprasidone were effective in treating aggressive behavior in children and adolescents with a variety of pyschiatric diagnoses.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Berger, 2008{260} **Country:** Australia **Condition category:** **Questions:** KQ1, KQ2, KQ3 **Funding:** Industry, Academic **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** July 2003 to Jan 2006 **Study design:** RCT (parallel) **Setting:** Inpatient and outpatient **Diagnostic criteria:** DSM-IV, SCID-I/P **Inclusion criteria:** (1) 15–25 yr, (2) first episode psychosis, (3) ≥1 of the following symptoms, present daily for ≥1 wk according to BPRS: somatic concerns, guilt, suspiciousness, hallucinations, unusual thought content, bizarre behavior, and/or conceptual disorganization **Exclusion criteria:** (1) previous treatment with antipsychotic medication (>1 wk), (2) presence of concurrent manic syndrome, MR (IQ<70), organic disorders presenting with a psychotic syndrome, epilepsy, (3) clinically significant physical	**Enrolled:** 141 **Analyzed:** 126 **Completed:** 126 **GROUP 1** **N:** 69 **Age, mean±SD (range):** 19.7±2.6 (15–24) **Males %:** 71 **Caucasian %:** NR **Treatment naïve (n):** 22 **Inpatients (n):** NR **First episode psychosis (n):** all **Comorbidities:** MR (0), psychosis (all), SA (28) **GROUP 2** **N:** 72 **Age, mean±SD (range):** 19±2.9 (15–24) **Males %:** 64.1 **Caucasian %:** NR **Treatment naïve (n):** 25 **Inpatients (n):** NR **First episode psychosis (n):** all **Comorbidities:** MR (0), psychosis (all), SA (30)	**Treatment duration:** 4 wk (8 wk extension) **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** anticholinergics, benzodiazepines, sertraline (50–200 mg/day), zopiclone, zolpidem **Prohibited drugs:** antipsychotics **GROUP 1** **Drug name:** Quetiapine (low) **Dosing variability:** fixed **Target dose (mg/day):** 200 **Daily dose (mg/day), mean±SD (range):** 200 **Concurrent treatments:** NR **GROUP 2** **Drug name:** Quetiapine (high) **Dosing variability:** fixed **Target dose (mg/day):** 400 **Daily dose (mg/day), mean±SD (range):** 400 **Concurrent treatments:** NR	**Symptomatology (KQ1):** BPRS, CGI-S, GAF, SANS, SOFAS, YMRS **AE (KQ2):** Blood pressure, EPS, sedation, sexual dysfunction, somnolence, WAE, weight change **Other ST and LT outcomes (KQ3):** Health care system utilization, legal interaction, medication adherence, response, suicide **Sub-populations (KQ4):** NR	Quetiapine was safe and well–tolerated in acutely ill drug naïve first–episode psychosis patients.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Berger, 2008 (continued)	illness, (4) history of brain surgery or brain infarct, (5) concomitant medications that prolong the QT interval, (6) 20% deviation from normal–range laboratory values at baseline, (7) participation in any other studies involving investigational or marketed products concomitantly or within 30 days (8) having donated blood or blood products within the past 4 wk, (9) pregnant or lactating women, or women of childbearing potential not using an acceptable method of contraception				

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Biederman, 2005{555} **Country:** USA **Condition category:** Bipolar **Questions:** KQ1, KQ2, KQ3 **Funding:** Government, Academic **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** Outpatient/community **Diagnostic criteria:** DSM-IV, K-SADS **Inclusion criteria:** (1) 4–6 yr, (2) DSM–IV bipolar I or II disorder or bipolar disorder NOS with current manic, hypomanic , or mixed symptoms (with or without psychotic features), (3) YMRS score >15 **Exclusion criteria:** (1) any serious, unstable medical illness, (2) history of treatment with both study medications	**Enrolled:** 31 **Analyzed:** 31 **Completed:** 24 **GROUP 1** **N:** 15 **Age, mean±SD (range):** 5.0±0.8 **Males %:** 67 **Caucasian %:** 100 **Diagnostic breakdown (n):** major depression (11), mania (all) **Treatment naïve (n):** NR **Inpatients (n):** 0 **First episode psychosis (n):** NR **Comorbidities:** ADHD (15), DBD (8) **GROUP 2** **N:** 16 **Age, mean±SD (range):** 5.3±0.8 **Males %:** 75 **Caucasian %:** 94 **Diagnostic breakdown (n):** major Depression (11), mania (all) **Treatment naïve (n):** NR **Inpatients (n):** 0 **First episode psychosis (n):** NR **Comorbidities:** ADHD (14), DBD (5)	**Treatment duration:** 8 wk **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** benztropine mesylate (max 2 mg/day), lorazepam (≤2 mg/day) **Prohibited drugs:** antidepressants, antimanic or mood–stabilizing medications **GROUP 1** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 6.3±2.3 (1.3–10) **Concurrent treatments:** all groups: benztropine (1), lorazepam (1) **GROUP 2** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 1.4±0.5 (0.3–2.0) **Concurrent treatments:** see group 1	**Symptomatology (KQ1):** BPRS, CDRS, YMRS **AE (KQ2):** Behavioral issues, blood pressure, cardiovascular AE, dermatologic AE, glucose, lipid profile, neurologic AE, prolactin, pulse, sedation, weight change **Other ST and LT outcomes (KQ3):** Response **Sub-populations (KQ4):** NR	Rispiradone and olanzapine showed reduction of symptoms of mania in preschool children with bipolar disorder.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Bruggeman, 2001{1778} **Country:** Belgium, Netherlands, South Africa **Condition category:** Tourette's syndrome **Questions:** KQ2, KQ4 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** Outpatient/community **Diagnostic criteria:** DSM-III-TR **Inclusion criteria:** (1) 10–65 yr, (2) primary dx of Tourette's syndrome (DSM–III–R), (3) ≥3 on TSSS and CGI–S **Exclusion criteria:** NR	**Enrolled:** 50 **Analyzed:** 50 **Completed:** 41 **GROUP 1** **N:** 24 **Age, mean±SD (range):** NR (11–45) **Males %:** 87.5 **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** 0 **First episode psychosis (n):** NR **Comorbidities:** ADHD (1), GAD (2), OCD (14) **GROUP 2** **N:** 26 **Age, mean±SD (range):** NR (11–50) **Males %:** 88.5 **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** 0 **First episode psychosis (n):** NR **Comorbidities:** ADHD (1), GAD (1), OCD (9)	**Treatment duration:** 2.8 mo **Run–in phase:** Yes **Run–in phase duration:** 2–5 wk **Permitted drugs:** antiparkinsonian medication and benzodiazepines (discontinued during washout period, limited during treatment) **Prohibited drugs:** antiparkinsonian medication and benzodiazepines (discontinued during washout period, limited during treatment), psychotropics (within 2 wk prior to and during study) **GROUP 1** **Drug name:** Pimozide **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 2. 9 (1–6) **Concurrent treatments:** NR **GROUP 2** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 3.8 (0.5–6) **Concurrent treatments:** NR	**Symptomatology (KQ1):** NR **AE (KQ2):** Weight **Other ST and LT outcomes (KQ3):** NR **Sub-populations (KQ4):** Age (CGI, GAF, HAM-A, PGI,TSSS, Y-BOCS, weight)	Risperidone and pimozide were efficacious and well tolerated in patients with Tourette's syndrome, but risperidone had a more favorable efficacy and tolerability profile.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Buitelaar, 2001{1776} **Country:** Netherlands **Condition category:** ADHD with aggression **Questions:** KQ1, KQ2, KQ3, KQ4 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** Inpatient **Diagnostic criteria:** DSM-IV **Inclusion criteria:** (1) overt aggressive behavior persisted during hospitalization (modified OAS score ≥1), (2) failure to respond to behavioral treatment approaches, (3) clinical indication for drug treatment, (4) 12–18 yr, (5) principal dx of CD, ODD, or ADHD according to DSM–IV, (6) full–scale IQ 60–90 (WISC–R) **Exclusion criteria:** (1) neurologic, cardiac, pulmonary, or hepatic diseases, (2) primary mood disorders, schizophrenia or other active psychosis, or suicidality, (3) comorbid substance abuse disorder (DSM–IV), (4) pregnant or use of inadequate	**Enrolled:** 38 **Analyzed:** 38 **Completed:** 35 **GROUP 1** **N:** 19 **Age, mean±SD (range):** 14.0±1.5 (11–18) **Males %:** 89.5 **Caucasian %:** NR **Diagnostic breakdown (n):** CD (14), DBD NOS (1), ODD (4) **Treatment naïve (n):** 13 **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (14), MR (6) **GROUP 2** **N:** 19 **Age, mean±SD (range):** 13.7±2 (11–18) **Males %:** 84.2 **Caucasian %:** NR **Diagnostic breakdown (n):** CD (16), DBD NOS (1), ODD (2) **Treatment naïve (n):** 13 **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (12), anxiety disorder (3), MR (8)	**Treatment duration:** 6 wk **Run–in phase:** Yes **Run–in phase duration:** 2 wk **Permitted drugs:** biperidine, medication for somatic illness, oxazepam **Prohibited drugs:** psychotropics **GROUP 1** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 2.9 (1.5–4) **Concurrent treatments:** NR **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** NR	**Symptomatology (KQ1):** ABC, CGI-S, OAS-M **AE (KQ2):** Akathisia, dyskinesia, dystonia, ECG changes, fatigue, oculogyric crisis, parkinsonism, prolactin, prolactin-related AE, SAE, somnolence, total AE, weight change **Other ST and LT outcomes (KQ3):** Medication adherence **Sub-populations (KQ4):** IQ and use of prior medication (CGI-S, ABC)	Risperidone may be effective for severe aggression in adolescents with disruptive behavior disorders and subaverage intelligence.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Buitelaar, 2001 (continued)	contraception, (5) major change in treatment strategy expected, (6) not feasible to discontinue current psychotropic medication				

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Connor, 2008{237} **Country:** USA **Condition category:** DBD **Questions:** KQ1, KQ2, KQ3 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** Nov 2003 to May 2005 **Study design:** RCT (parallel) **Setting:** Outpatient/community **Diagnostic criteria:** K-SADS-E **Inclusion criteria:** (1) 12–17 yr, (2) primary psychiatric dx of CD, (3) moderate to severe aggression (OAS score ≥25), (4) at least moderate severity of symptoms (CGI–S score ≥4) **Exclusion criteria:** (1) comorbid schizophrenia, schizoaffective disorder, psychotic disorder NOS, bipolar disorder, psychotic depression, or bipolar disorder NOS, (2) alcohol or substance abuse or dependence within 3 mo, (3) significantly subaverage IQ, (4) current or past history of leticular abnormality or juvenile cataracts, (5) seizure disorder, (6) concurrent	**Enrolled:** 19 **Analyzed:** 19 **Completed:** 11 **GROUP 1** **N:** 9 **Age, mean±SD (range):** 13.1±1.2 **Males %:** 78 **Caucasian %:** 78 **Treatment naïve (n):** 2 **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (8), DBD (8), depression (1), dysthymia (2), GAD (3), MR (0), OCD (2), panic disorder (1), psychosis (0), PTSD (2), SA (1), separation anxiety (2), social phobia (2) **GROUP 2** **N:** 10 **Age, mean±SD (range):** 15±1.4 **Males %:** 70 **Caucasian %:** 70 **Treatment naïve (n):** 1 **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (7), DBD (10), depression (3), dysthymia (3), GAD (0), MR (0), OCD (1), panic disorder (0), psychosis (0), PTSD (1) SA (5), separation anxiety	**Treatment duration:** 6 wk **Run–in phase:** Yes **Run–in phase duration:** 1–4 wk **Permitted drugs:** benztropine **Prohibited drugs:** psychotropics, rescue medications for aggression **GROUP 1** **Drug name:** Quetiapine **Dosing variability:** variable **Target dose (mg/day):** 200 **Daily dose (mg/day), mean±SD (range):** 294±78 (200–600) **Concurrent treatments:** benztropine (0) **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** 200 **Daily dose (mg/day), mean±SD (range):** 530±245 **Concurrent treatments:** benztropine (0)	**Symptomatology (KQ1):** CGI-I, CGI-S, Conner PRS, OAS **AE (KQ2):** Akathisia, Behavioral issues, ECG changes, EPS, prolactin, pulse, SAE, sedation, severity of AE, WAE, weight change **Other ST and LT outcomes (KQ3):** Quality of life (Q-LES-Q), school attendance **Sub-populations (KQ4):** NR	Quetiapine may be efficacious in the treatment of CD, but further research is required.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Connor, 2008 (continued)	administration of any psychoactive medication, (7) pregnant or lactating females, (8) women of childbearing potential not using a medically accepted means of birth control, (9) unstable medical disease	(1), social phobia (1)			

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Correll, 2009{2413} **Country:** USA **Condition category:** Multiple categories (bipolar, DBD, PDD, schizophrenia-related) **Questions:** KQ2, KQ4 **Funding:** Government, Academic **Newcastle-Ottawa Scale:** 8 stars	**Recruitment dates:** Dec 2001 to Sep 2007 **Study design:** Prospective cohort **Setting:** Inpatient and outpatient **Diagnostic criteria:** DSM-IV, chart review, discussion with treating clinician, clinical interview **Inclusion criteria:** (1) 4–19 yr, (2) <1 wk lifetime antipsychotic treatment, (3) psychiatric illness prompting antipsychotic medication initiation, (4) consent, (5) baseline anthropometric and biochemical assessments obtained within 7 day of antipsychotic medication initiation **Exclusion criteria:** (1) treatment with >1 antipsychotic agent, (2) active or past eating disorder, (3) biochemical evidence of thyroid dysfunction, (4) acute medical disorders, (5) pregnancy or	**Enrolled:** 312 **Analyzed:** 257 **Completed:** 192 **GROUP 1** **N:** 47 **Age, mean±SD (range):** 13.4±3.1 (7–19.7) **Males %:** 56.1 **Caucasian %:** NR **Diagnostic breakdown (n):** disruptive or aggressive behavior spectrum disorder (9: ASD (4), ODD, CD, IED, ICD (5)), mood disorder spectrum (11: bipolar (3), MDD (10), NOS (5)), schizophrenia spectrum (14: psychosis NOS (11), schizophrenia/ schizoaffective disorder (3)) **Treatment naïve (n):** all **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 2** **N:** 52 **Age, mean±SD (range):** 14.7±3.2 (6.6–18.6) **Males %:** 64.4 **Caucasian %:** NR **Diagnostic breakdown (n):** disruptive or aggressive behavior spectrum disorder (9: ASD (2), ODD, CD, IED, ICD (7)), mood disorder spectrum (16: bipolar (9),	**Treatment duration:** 2.8 mo **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** co–medications as necessary **Prohibited drugs:** co–medications as necessary **GROUP 1** **Drug name:** Aripriprazole **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** anticholinergics (2), antidepressants (13), anxiolytics or hypnotics (1), mood stabilizers (6), none (16), psychostimulants (5), psychotropics (4) **GROUP 2** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** anticholinergics (0), antidepressants (10), anxiolytics or hypnotics (3), mood stabilizers (18), none (14), psychostimulants (4), psychotropics (1) **GROUP 3** **Drug name:** Quetiapine **Dosing variability:** variable **Target dose (mg/day):** NR	**Symptomatology (KQ1):** NR **AE (KQ2):** Fat mass, glucose, insulin resistance, lipid profile, metabolic syndrome, waist circumference, WAE, weight change **Other ST and LT outcomes (KQ3):** NR **Sub-populations (KQ4):** Pubertal status (metabolic changes)	First–time second–generation antipsychotic medication use was associated with significant weight gain and variable metabolic changes for each medication.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Correll, 2009 (continued)	breastfeeding, (6) wards of the state, (7) leaving the catchment area within 4 wk	MDD (8), NOS (4)), schizophrenia spectrum (14: psychosis NOS (5), schizophrenia/ schizoaffective disorder (9)) **Treatment naïve (n):** all **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 3** **N:** 45 **Age, mean±SD (range):** 14±3.1 (6.1–19.4) **Males %:** 36.1 **Caucasian %:** NR **Diagnostic breakdown (n):** disruptive or aggressive behavior spectrum disorder (6: ASD (2), ODD, CD, IED, ICD (4)), mood disorder spectrum (9: bipolar (10), MDD (8), NOS (6)), schizophrenia spectrum (6: psychosis NOS (4), schizophrenia/ schizoaffective disorder (2)) **Treatment naïve (n):** all **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 4** **N:** 168 **Age, mean±SD (range):** 13.6±4 (4.3–19.9) **Males %:** 62.2 **Caucasian %:** NR	**Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** anticholinergics (2), antidepressants (10), anxiolytics or hypnotics (1), mood stabilizers (15), none (8), psychostimulants (4), psychotropics (1) **GROUP 4** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** anticholinergics (18), antidepressants (43), anxiolytics or hypnotics (13), mood stabilizers (32), none (32), psychostimulants (26), psychotropics (9)		

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Correll, 2009 (continued)		**Diagnostic breakdown (n):** disruptive or aggressive behavior spectrum disorder (34: ASD (13), ODD, CD, IED, ICD (21)), mood disorder spectrum (55: bipolar (17), MDD (19), NOS (19)), schizophrenia spectrum (46: psychosis NOS (33), schizophrenia/ schizoaffective disorder (13)) **Treatment naïve (n):** all **Inpatients (n):** NR **First episode psychosis (n):** NR			

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Crocq, 2007{166} **Country:** France **Condition category:** Schizophrenia and related **Questions:** KQ2, KQ4 **Funding:** NR **Risk of bias:** NA (subjective), High (objective)	**Recruitment dates:** NR **Study design:** NRCT (parallel) **Setting:** Inpatient **Diagnostic criteria:** DSM-IV **Inclusion criteria:** (1) hospitalized adolescents with schizophreniform disorder **Exclusion criteria:** NR	**Enrolled:** NR **Analyzed:** 52 **Completed:** NR **GROUP 1** **N:** NR **Age, mean±SD (range):** 16.5±1.7 **Males %:** 31.3 **Caucasian %:** all **Treatment naïve (n):** NR **Inpatients (n):** all **First episode psychosis (n):** NR **GROUP 2** **N:** NR **Age, mean±SD (range):** 17±1.3 **Males %:** 60 **Caucasian %:** all **Treatment naïve (n):** NR **Inpatients (n):** all **First episode psychosis (n):** NR **GROUP 3** **N:** NR **Age, mean±SD (range):** 15.2±1.4 **Males %:** 57.7 **Caucasian %:** all **Treatment naïve (n):** NR **Inpatients (n):** all **First episode psychosis (n):** NR	**Treatment duration:** 2.8 mo **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Olanzapine (oral disintegrating tablet) **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 16.6±4.4 **Concurrent treatments:** NR **GROUP 2** **Drug name:** Olanzapine (standard oral tablet) **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 18±4.2 **Concurrent treatments:** NR **GROUP 3** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 2. 8±1.2 **Concurrent treatments:** NR	**Symptomatology (KQ1):** NR **AE (KQ2):** BMI, weight **Other ST and LT outcomes (KQ3):** NR **Sub-populations (KQ4):** Gender (weight)	Significantly greater increases in weight and BMI were found for olanzapine SOT compared to olanzapine ODT, as well as for olanzapine ODT compared to risperidone.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
de Haan, 2003{1034} **Country:** Netherlands **Condition category:** Schizophrenia and related **Questions:** KQ1, KQ2, KQ3 **Funding:** Government **Risk of bias:** High (subjective), NA (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** Inpatient and outpatient **Diagnostic criteria:** DSM-IV **Inclusion criteria:** (1) 17–28 yr, (2) DSM–IV criteria for schizophrenia, (3) admitted to the Adolescent Clinic **Exclusion criteria:** (1) neurological or endocrine disease, (2) MR, (3) use of adjunctive medications such as mood stabilizers or antidepressants, (4) history of treatment with clozapine, (5) history of unresponsiveness to haloperidol or olanzapine, (6) intramuscular antipsychotic treatment within the last yr	**Enrolled:** 24 **Analyzed:** 19 **Completed:** 20 **GROUP 1** **N:** 12 **Age, mean±SD (range):** 21.0±2.8 (17–26) **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** 0 **Inpatients (n):** NR **First episode psychosis (n):** 9 **Comorbidities:** MR (0) **GROUP 2** **N:** 12 **Age, mean±SD (range):** 21±2.3 (17–25) **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** 0 **Inpatients (n):** NR **First episode psychosis (n):** 11 **Comorbidities:** MR (0)	**Treatment duration:** 6 wk **Run–in phase:** Yes **Run–in phase duration:** 1 wk **Permitted drugs:** oxazepam **Prohibited drugs:** antidepressants, antipsychotics, mood stabilizers **GROUP 1** **Drug name:** Haloperidol **Dosing variability:** fixed **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 2.5 **Concurrent treatments:** oxazepam (6) **GROUP 2** **Drug name:** Olanzapine **Dosing variability:** fixed **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 7.5 **Concurrent treatments:** oxazepam (5)	**Symptomatology (KQ1):** CGI-I, PANSS **AE (KQ2):** Akathisia, parkinsonism **Other ST and LT outcomes (KQ3):** Health related quality of life (Subjective Well-being under Neuroleptics scale), medication adherence **Sub-populations (KQ4):** NR	Olanzapine showed no superior subjective response over haloperidol in patients with recent–onset schizophrenia.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
DelBello, 2009{67} **Country:** USA **Condition category:** Bipolar **Questions:** KQ1, KQ2, KQ3, KQ4 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** Mar 2006 to June 2007 **Study design:** RCT (parallel) **Setting:** Inpatient and outpatient **Diagnostic criteria:** DSM-IV-TR, WASH-U-KSADS **Inclusion criteria:** (1) 12–18 yr, (2) dx of bipolar I disorder, depressive episode, (3) screening and baseline CDRS–R score ≥40 **Exclusion criteria:** (1) substance use disorder (other than nicotine) within the previous 3 mo, (2) unstable medical or neurological illness, (3) history of intolerance or nonresponse to quetiapine monotherapy, (4) treatment with an antidepressant (other than fluoxetine), an anticonvulsant (other than valproate or carbamazepine), antipsychotic or atomoxetine within 3 day, fluoxetine within 4 wk, or a psychostimulant within 48 hr of baseline, (5) risk of suicide	**Enrolled:** 32 **Analyzed:** 32 **Completed:** 20 **GROUP 1** **N:** 17 **Age, mean±SD (range):** 16.0±2 **Males %:** 29 **Caucasian %:** 82 **Treatment naïve (n):** 12 **Inpatients (n):** 7 **First episode psychosis (n):** NR **Comorbidities:** ADHD (2), anxiety disorder (5), DBD (6), psychosis (2) **GROUP 2** **N:** 15 **Age, mean±SD (range):** 15±2 **Males %:** 33 **Caucasian %:** 80 **Treatment naïve (n):** 11 **Inpatients (n):** 8 **First episode psychosis (n):** NR **Comorbidities:** ADHD (2), anxiety disorder (3), DBD (2), psychosis (1)	**Treatment duration:** 8 wk **Run–in phase:** Yes **Run–in phase duration:** NR **Permitted drugs:** lorazepam (max 4 mg/day days 1–7, 2 mg/day days 8–14) **Prohibited drugs:** antidepressants (<3 day), anticonvulsants (<3 day), antipsychotics or atomoxetine (<3 day), fluoxetine (<4 wk), psychostimulant (<48 hr) **GROUP 1** **Drug name:** Quetiapine **Dosing variability:** variable **Target dose (mg/day):** 600 **Daily dose (mg/day), mean±SD (range):** 403±133 (300–600) **Concurrent treatments:** lorazepam (0) **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** 600 **Daily dose (mg/day), mean±SD (range):** 413±151 (300–600) **Concurrent treatments:** lorazepam (0)	**Symptomatology (KQ1):** CDRS, CGI-BP, HAM-A, YMRS **AE (KQ2):** Blood pressure, BMI, diabetes, EPS, glucose, LFT, lipid profile, mania, prolactin, pulse, SAE, sedation, tachycardia, WAE, weight change **Other ST and LT outcomes (KQ3):** Response (response, remission, suicide attempt) **Sub-populations (KQ4):** inpatient status, site (symptomalogy)	Quetiapine monotherapy was no more effective in treating depression in adolescents with bipolar disorder than treatment with placebo.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
DelBello, 2008{230} **Country:** USA **Condition category:** Multiple categories (bipolar, schizophrenia-related) **Questions:** KQ1, KQ2, KQ3 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** Outpatient/community **Diagnostic criteria:** DSM-IV-TR **Inclusion criteria:** (1) 10–17 yr, (2) bipolar I disorder (YMRS score ≥17), (3) schizophrenia-related disorder (BPRS–A score ≥35, with a score of ≥4 on at least one of: unusual thought content, hallucinations, suspiciousness, or conceptual disorganization), (4) BMI between 5th and 95th percentile **Exclusion criteria:** (1) currently on stable well–tolerated treatment, (2) substance–induced psychotic disorder, (3) treatment with clozapine within 12 wk, (4) depot antipsychotic within 4 wk, (5) MAO–I within 2 wk, (6) imminent risk of suicide or homicide, (7) MR, (8) autism or other	**Enrolled:** 63 **Analyzed:** 63 **Completed:** 38 **GROUP 1** **N:** 23 **Age, mean±SD (range):** 13.2 (bipolar), 14.4 (schiz) **Males %:** 52 **Caucasian %:** NR **Diagnostic breakdown (n):** bipolar I (15), schizophrenia or schizoaffective disorder (8) **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** MR (0), SA (0) **GROUP 2** **N:** 40 **Age, mean±SD (range):** 13.8 (bipolar), 14.7 (schiz) **Males %:** 75 **Caucasian %:** NR **Diagnostic breakdown (n):** biploar I (31), schizophrenia or schizoaffective disorder (9) **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** MR (0), SA (0)	**Treatment duration:** 3 wk (5.5 mo extension) **Run–in phase:** Yes **Run–in phase duration:** 24 hr **Permitted drugs:** benztropine and/or propranolol, lorazepam or similar benzodiazepine **Prohibited drugs:** antidepressants, mood stabilizers, stimulants **GROUP 1** **Drug name:** Ziprasidone (low) **Dosing variability:** fixed **Target dose (mg/day):** 80 **Daily dose (mg/day), mean±SD (range):** (20–80) **Concurrent treatments:** benztropine (3) **GROUP 2** **Drug name:** Ziprasidone (high) **Dosing variability:** fixed **Target dose (mg/day):** 160 **Daily dose (mg/day), mean±SD (range):** (40–160) **Concurrent treatments:** benztropine (4)	**Symptomatology (KQ1):** BPRS, CGI-S, YMRS **AE (KQ2):** Akathisia, behavioral issues, dystonia, ECG changes, EPS, fatigue, glucose, lipid profile, prolactin, SAE, sedation, somnolence, WAE, weight change **Other ST and LT outcomes (KQ3):** Suicide **Sub-populations (KQ4):** NR	Neither low nor high dose ziprasidone was associated with unexpected tolerability findings, and a starting dose of 20 mg/d, titrated to 80–160 mg/d over 1–2 wk was optimal.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
DelBello, 2008 (continued)	PDD, (8) pregnancy, breastfeeding, or unwillingness to use birth control, (9) serious unstable medical or neurologic illness, (10) any screening laboratory value that deviated significantly from reference range, (11) clinically significant hypokalemia or hypomagnesemia, (12) history of cardiac arryhthmias, conduction abnormalities, QTc prolongation, or genetic risk for prolonged QT syndrome, (13) psychoactive substance or alcohol abuse or dependence (other than nicotine or caffeine) within 1 mo (DSM–IV–TR)				

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
DelBello, 2002{1334} **Country:** USA **Condition category:** Bipolar **Questions:** KQ1, KQ2, KQ3 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** May 2000 to May 2001 **Study design:** RCT (parallel) **Setting:** Inpatient and outpatient **Diagnostic criteria:** DSM-IV, WASH-U-KSADS **Inclusion criteria:** (1) 12–18 yr, (2) DSM–IV criteria for bipolar I disorder, currently mixed or manic, (3) YMRS score ≥20 **Exclusion criteria:** (1) pregnant, (2) manic symptoms secondary to substance intoxication or withdrawal, (3) substance use disorder within the past 3 mo, (4) MR, (5) unstable medical or neurological disorder, cataracts, or clinically significant baseline laboratory abnormalities, (6) history of hypersensitivity, intolerance, or nonresponse to quetiapine or valproate, (7) treated with a depot	**Enrolled:** 30 **Analyzed:** 30 **Completed:** 22 **GROUP 1** **N:** 15 **Age, mean±SD (range):** 14.1±2 **Males %:** 53 **Caucasian %:** 80 **Diagnostic breakdown (n):** mixed episode (10) **Treatment naïve (n):** NR **Inpatients (n):** all **First episode psychosis (n):** NR **Comorbidities:** ADHD (10), psychosis (7) **GROUP 2** **N:** 15 **Age, mean±SD (range):** 14.5±2 **Males %:** 53 **Caucasian %:** 87 **Diagnostic breakdown (n):** mixed episode (13) **Treatment naïve (n):** NR **Inpatients (n):** all **First episode psychosis (n):** NR **Comorbidities:** ADHD (8), psychosis (7)	**Treatment duration:** 6 wk **Run–in phase:** Yes **Run–in phase duration:** NR **Permitted drugs:** lorazepam (≤2 mg/day for first 14 day) **Prohibited drugs:** NR **GROUP 1** **Drug name:** Quetiapine **Dosing variability:** variable **Target dose (mg/day):** 450 **Daily dose (mg/day), mean±SD (range):** 432 **Concurrent treatments:** lorazepam (2) **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** lorazepam (3)	**Symptomatology (KQ1):** YMRS **AE (KQ2):** Blood cells, blood pressure, ECG changes, prolactin, SAE, sedation, thyroid function, WAE, weight change **Other ST and LT outcomes (KQ3):** Medication adherence, response **Sub-populations (KQ4):** NR	Quetiapine in combination with divalproate is more effective for the treatment of adolescent bipolar mania than divalproate with placebo.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
DelBello, 2002 (continued)	neuroleptic within 3 mo, an antidepressant or antipsychotic within 1 wk (fluoxetine within 1 mo), a benzodiazepine or psychostimulant within 72 hr, or other antiepileptic agents within 72 hr				

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Findling, 2009{286} **Country:** USA **Condition category:** Bipolar **Questions:** KQ1, KQ2, KQ3, KQ4 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** Mar 2005 to Feb 2007 **Study design:** RCT (parallel) **Setting:** Inpatient and outpatient **Diagnostic criteria:** DSM-IV, K-SADS-PL **Inclusion criteria:** (1) 10–17 yr, (2) bipolar I disorder with current manic or mixed episodes, with or without psychotic features (DSM–IV), (3) YMRS score ≥20 **Exclusion criteria:** (1) bipolar II disorder, bipolar disorder NOS, PDD, schizophrenia, schizoaffective disorder, psychosis due to other medical condition or concomitant medication, (2) MR, (3) DSM–IV substance or alcohol use disorder, (4) positive drug screen for cocaine or other substances of abuse during screening, (5) sexual activity without contraceptive use, pregnancy,	**Enrolled:** 296 **Analyzed:** 294 **Completed:** 237 **GROUP 1** **N:** 98 **Age, mean±SD (range):** 13.7±2.2 **Males %:** 53.1 **Caucasian %:** 66.3 **Diagnostic breakdown (n):** manic (41), mixed (43), unknown (14) **Treatment naïve (n):** 41 **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (48), DBD (28) **GROUP 2** **N:** 99 **Age, mean±SD (range):** 13.3±2.3 **Males %:** 51.5 **Caucasian %:** 68.7 **Diagnostic breakdown (n):** manic (40), mixed (39), unknown (20) **Treatment naïve (n):** 49 **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (50), DBD (34) **GROUP 3** **N:** 99	**Treatment duration:** 4 wk **Run–in phase:** Yes **Run–in phase duration:** 3 day **Permitted drugs:** anticholinergics, benzodiazepines **Prohibited drugs:** Mood stabilizers, other psychotropics **GROUP 1** **Drug name:** Aripiprazole (low) **Dosing variability:** variable **Target dose (mg/day):** 10 **Daily dose (mg/day), mean±SD (range):** (2–10) **Concurrent treatments:** NR **GROUP 2** **Drug name:** Aripiprazole (high) **Dosing variability:** variable **Target dose (mg/day):** 30 **Daily dose (mg/day), mean±SD (range):** (2–30) **Concurrent treatments:** NR **GROUP 3** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** NR	**Symptomatology (KQ1):** CDRS, CGAS, CGI-BP, GBI, YMRS **AE (KQ2):** Akathisia, BMI, dyskinesia, dystonia, ECG changes, EPS, fatigue, glucose, lipid profile, mortality, parkinsonism, prolactin, SAE, somnolence, total AE, WAE, weight change **Other ST and LT outcomes (KQ3):** Health related quality of life (P-QLES-Q), response, suicide **Sub-populations (KQ4):** Gender (prolactin)	Aripiprazole in daily doses of 10 mg or 30 mg was effective and generally well–tolerated for acute treatment of pediatric subjects with bipolar I mania or mixed episodes.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Findling, 2009 (continued)	lactation, (6) other medical reason determined by investigator, (7) noncompliance with medication washout, (8) inability to swallow tablets whole, (9) history of antipsychotic treatment resistance or NMS, (10) suicide attempt in the past 6 mo, score >3 on the Suicidal Ideation item of the CDRS–R, or determined by the investigator to be at risk of suicide, (11) clinically important laboratory test results, vital signs, or ECG, and unstable medical conditions, diabetes melitus, epilepsy, (12) prior participation in an aripiprazole study, allergy or hypersensitivity to aripiprazole, or participation in an investigational drug trial in the past mo	**Age, mean±SD (range):** 13.3±2.1 **Males %:** 56.6 **Caucasian %:** 60.6 **Diagnostic breakdown (n):** manic (38), mixed (43), unknown (18) **Treatment naïve (n):** 36 **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (55), DBD (31)			

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Findling, 2008{17} **Country:** Asia, Caribbean, Europe, South Africa, South America, USA **Condition category:** Schizophrenia and related **Questions:** KQ1, KQ2, KQ3 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** Inpatient and outpatient **Diagnostic criteria:** DSM-IV, K-SADS-PL **Inclusion criteria:** (1) 13–17 yr, (2) primary dx of schizophrenia (DSM–IV Axis I, confirmation with K–SADS–PL), (3) baseline PANSS ≥ 70 **Exclusion criteria:** (1) current psychiatric comorbidity requiring pharmacology, (2) evidence of suicide risk, (3) history, or current dx of schizoaffective disorder, MR, major depressive episodes, NMS, any neurologic disorder other than Tourette's syndrome, severe head trauma, unstable medical condition, (4) resistant to antipsychotics according to trials of two different antipsychotics of adequate dose and duration, (5) pregnancy,	**Enrolled:** 302 **Analyzed:** 294 **Completed:** 258 **GROUP 1** **N:** 100 **Age, mean±SD (range):** 15.6±1.3 **Males %:** 45 **Caucasian %:** 54 **Treatment naïve (n):** 25 **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 2** **N:** 102 **Age, mean±SD (range):** 15.4±1.4 **Males %:** 63.7 **Caucasian %:** 60.8 **Treatment naïve (n):** 27 **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 3** **N:** 100 **Age, mean±SD (range):** 15.4±1.4 **Males %:** 61 **Caucasian %:** 64 **Treatment naïve (n):** 27 **Inpatients (n):** NR **First episode psychosis (n):** NR	**Treatment duration:** 6 wk **Run–in phase:** Yes **Run–in phase duration:** ≥3 day **Permitted drugs:** anticholinergics, benzodiazepines **Prohibited drugs:** antidepressants, atomoxetine, mood stabilizers, other psychotropics, stimulants **GROUP 1** **Drug name:** Aripiprazole (low) **Dosing variability:** variable **Target dose (mg/day):** 10 **Daily dose (mg/day), mean±SD (range):** 9.8 (2–10) **Concurrent treatments:** NR **GROUP 2** **Drug name:** Aripiprazole (high) **Dosing variability:** variable **Target dose (mg/day):** 30 **Daily dose (mg/day), mean±SD (range):** 28.9 (2–30) **Concurrent treatments:** NR **GROUP 3** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** NR	**Symptomatology (KQ1):** CGAS, CGI-I, CGI-S, PANSS **AE (KQ2):** Akathisia, behavioural issues, BMI, dyskinesia, dystonia, ECG changes, EPS, EPS (SAS), glucose, lipid profile, mortality, prolactin, parkinsonism, SAE, somnolence, WAE, weight change **Other ST and LT outcomes (KQ3):** Health related quality of life (P-QLES-Q), response, suicide **Sub-populations (KQ4):** NR	Aripiprazole (10 or 30 mg/d) was well tolerated and was more effective than placebo in improving symptoms of schizophrenia.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Findling, 2008 (continued)	breast–feeding, sexually active patients who refused abstinence or birth control, (6) positive screens for illegal drugs within 3 mo of baseline or during study, (7) hospitalized for acute schizophrenia within 4 wk of baseline				

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Findling, 2008{309} **Country:** USA **Condition category:** Multiple categories (bipolar, DBD, OCD, PDD, schizophrenia, Tourette's syndrome) **Questions:** KQ2 **Funding:** Industry **Newcastle-Ottawa Scale:** 4 stars	**Recruitment dates:** NR **Study design:** Prospective cohort **Setting:** NR **Diagnostic criteria:** NR **Inclusion criteria:** (1) 10–17 yr, (2) primary psychiatric dx of bipolar, schizophrenia spectrum disorder, or other at investigator discretion **Exclusion criteria:** (1) sexual activity without practicing double–barrier birth control, (2) pregnancy or lactation, (3) current or former drug or alcohol abuse, (4) MR, (5) neurologic disorders (except PDD, ADHD or Tourette's syndrome), (6) use of antipsychotic or psychotropic medication, CYP2D6 and CYP3A4 inhibitors, or CYP3A4 inducers within previous 14 day, (7) participation in another clinical study in previous mo (or 6 mo if study involved psychotropic medication), (8) major	**Enrolled:** 21 **Analyzed:** 20 **Completed:** 17 **GROUP 1** **N:** 8 **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** all **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** MR (0) **GROUP 2** **N:** 7 **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** all **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** MR (0) **GROUP 3** **N:** 6 **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** all **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** MR (0)	**Treatment duration:** low dose 3.1 wk, medium dose 3.4 wk, high dose 3.7 wk **Run–in phase:** Yes **Run–in phase duration:** ≤12 day **Permitted drugs:** NR **Prohibited drugs:** antipsychotics or psychotropics, CYP2D6 and CYP3A4 inhibitors, CYP3A4 inducers (within 14 day) **GROUP 1** **Drug name:** Aripiprazole (low) **Dosing variability:** fixed **Target dose (mg/day):** 20 **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** all groups (14): analgesics (5), anesthetics (4), antacids (1), antibacterials (1), antiasthmatics (2), antidiabetics (1), antiinflammatories or antirheumatics (2), antiparkinsonianism drugs (2), antipyretics including antihistamines (1), nasal preparations (1) **GROUP 2** **Drug name:** Aripiprazole (medium) **Dosing variability:** fixed **Target dose (mg/day):** 25 **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** see group 1 **GROUP 3** **Drug name:** Aripiprazole (high) **Dosing variability:** fixed	**Symptomatology (KQ1):** NR **AE (KQ2):** Dystonia, fatigue, mortality, SAE, sedation, somnolence, total AE, weight change **Other ST and LT outcomes (KQ3):** NR **Sub-populations (KQ4):** NR	Aripiprazole at doses of 20, 25, and 30 mg/d were generally safe and well tolerated in children and adolescents with psychiatric disorders.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Findling, 2008 (continued)	surgery or blood transfusion/donation within previous 30 day, (9) abnormal physical, ECG or clinical laboratory examination, (10) significant risk of suicide or homicide		**Target dose (mg/day):** 30 **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** see group 1		

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Findling, 2000{1849} **Country:** USA **Condition category:** DBD **Questions:** KQ1, KQ2, KQ3, KQ4 **Funding:** Industry, Foundation **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** Outpatient/community **Diagnostic criteria:** DSM-IV, K-SADS, clinical interview **Inclusion criteria:** (1) outpatients with primary dx of CD, (2) 5–15 yr, (3) at least moderate degree of overall symptom severity (CGI), (4) Aggression subscale T–score ≥2 SD above the mean for age– and gender–matched peers (CBCL) **Exclusion criteria:** (1) moderate/severe ADHD, (2) significant psychiatric comorbidity (including mood disorder), (3) treatment with a psychotropic medication within 1 wk of initiating double–blind therapy, (4) positive toxicology screen, (5) suicide attempt within the past mo, (6) organic mental syndromes, (7) pregnant	**Enrolled:** 20 **Analyzed:** 20 **Completed:** 9 **GROUP 1** **N:** 10 **Age, mean±SD (range):** 10.7±3.4 **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** 0 **First episode psychosis (n):** NR **GROUP 2** **N:** 10 **Age, mean±SD (range):** 8.2±1.9 **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** 0 **First episode psychosis (n):** NR	**Treatment duration:** 10 wk **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** benztropine **Prohibited drugs:** NR **GROUP 1** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 0±0.004 (0.8–1.5) **Concurrent treatments:** NR **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** (0.3–3) **Concurrent treatments:** NR	**Symptomatology (KQ1):** CBCL, CGI-I, CGI-S, Conner PRS, RAAPP **AE (KQ2):** Dermatologic AE, EPS, liver function, sedation, total AE, WAE **Other ST and LT outcomes (KQ3):** Medication adherence **Sub-populations (KQ4):** age, race, baseline RAAPP & CGI-S scores (completion of study, RAAPP, CPRS)	Low doses of risperidone may be effective in the treatment of youths with CD and are not associated with extrapyramidal symptoms.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Findling, 2000 (continued)	or nursing females and females of childbearing potential who were not using an acceptable method of birth control, (8) a standard score equivalent to <70 on the Peabody Picture Vocabulary Test–Revised				

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Fleischhaker, 2006{3420} **Country:** Germany **Condition category:** Multiple categories (anorexia nervosa, DBD, OCD, PDD, schizophrenia, Tourette's syndrome) **Questions:** KQ2, KQ4 **Funding:** NR **Newcastle-Ottawa Scale:** 2 stars	**Recruitment dates:** NR **Study design:** Prospective cohort **Setting:** Inpatient **Diagnostic criteria:** ICD-10 **Inclusion criteria:** NR **Exclusion criteria:** NR	**Enrolled:** 51 **Analyzed:** 51 **Completed:** 51 **GROUP 1** **N:** 16 **Age, mean±SD (range):** 17.2±1.8 (14.4–21.3) **Males %:** 68.9 **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 2** **N:** 16 **Age, mean±SD (range):** 15.8±1.4 (12.8–17.8) **Males %:** 56.3 **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 3** **N:** 19 **Age, mean±SD (range):** 15.6±2.6 (9.7–19) **Males %:** 68.4 **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR	**Treatment duration:** 7.4 wk (mean) **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Clozapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 321.9±156.5 (125–600) **Concurrent treatments:** all groups: amisulpride, biperiden, chlorprotixene, fluboxamine, fluoxetine, haloperidol, imipramine, lactulose, levomepromazine, lorazepam, metixene, metoclopramid, metoprolol, paroxetine, perazine, pimozide, pipamperone, pirenzepine, promethazine **GROUP 2** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 16.6±7.1 (7.5–30) **Concurrent treatments:** see group 1 **GROUP 3** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 3.9±1.7 (1–6) **Concurrent treatments:** see group 1	**Symptomatology (KQ1):** NR **AE (KQ2):** Akathisia, behavioral issues, bradycardia, blood cells, blood pressure, BMI, constipation, dystonia, dermatologic AE, ECG changes, liver functiontachycardia, tardive dyskinesia, weight change **Other ST and LT outcomes (KQ3):** NR **Sub-populations (KQ4):** gender, age, co-treatment, treatment history, history of dieting, baseline weight (weight change)	Olanzapine caused significant weight gain in children and adolescents, potentially influencing medication compliance and health risk. Clozapine and risperidone were associated with less marked changes in weight, but gains were still more pronounced than those seen in adults.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Fraguas, 2008{268} **Country:** Spain **Condition category:** Multiple categories (bipolar, DBD, PDD, schizophrenia) **Questions:** KQ2, KQ4 **Funding:** Government, Foundation, Other NR **Newcastle-Ottawa Scale:** 6 stars	**Recruitment dates:** Mar 2005 to Oct 2006 **Study design:** Prospective cohort **Setting:** Inpatient and outpatient **Diagnostic criteria:** DSM-IV **Inclusion criteria:** (1) new prescription of olanzapine, risperidone of quetiapine within 30 days, (2) no history of prior lifetime antipsychotic treatment **Exclusion criteria:** (1) receiving >1 antipsychotic or needed another antipychotic during follow–up	**Enrolled:** 92 **Analyzed:** 66 **Completed:** 66 **GROUP 1** **N:** 25 **Age, mean±SD (range):** 15.9±1.5 (12–17) **Males %:** 65 **Caucasian %:** 90 **Diagnostic breakdown (n):** bipolar (2), depression (1), eating disorders (3), PDD (1), psychosis NOS (5), schizophrenia (3), schizophreniform (5) **Treatment naïve (n):** 9 **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** psychosis (14), SA (12) **GROUP 2** **N:** 29 **Age, mean±SD (range):** 16.3±1.3 (13–18) **Males %:** 58.3 **Caucasian %:** 95.8 **Diagnostic breakdown (n):** ADHD (0), bipolar (5), CD (1), depression (2), eating disorders (2), OCD (2), PDD (0), psychosis NOS (4), schizophrenia (4), schizophreniform (4) **Treatment naïve (n):** 8 **Inpatients (n):** NR	**Treatment duration:** 6 mo **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** anticholinergics, antidepressants, benzodiazepines **Prohibited drugs:** antipsychotics **GROUP 1** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 9.8±5.6 **Concurrent treatments:** antidepressants (3), benzodiazepines (14), biperiden (4) **GROUP 2** **Drug name:** Quetiapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 390.8±321.2 **Concurrent treatments:** antidepressants (9), benzodiazepines (12), biperiden (4) **GROUP 3** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 3.5±3.1 **Concurrent treatments:** antidepressants (9), benzodiazepines (11), biperiden (6)	**Symptomatology (KQ1):** NR **AE (KQ2):** Blood pressure, BMI, glucose, lipid profile, thyroid function, weight change **Other ST and LT outcomes (KQ3):** NR **Sub-populations (KQ4):** gender, age, race, comorbidities, co-treatment, duration of inpatient treatment, treatment history (weight, at risk for AE)	Metabolic and hormonal adverse events should be carefully monitored when prescribing second–generation antipsychotics.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Fraguas, 2008 (continued)		**First episode psychosis (n):** NR **Comorbidities:** psychosis (14), SA (18) **GROUP 3** **N:** 38 **Age, mean±SD (range):** 13.4±4 (4–17) **Males %:** 77.3 **Caucasian %:** 81.8 **Diagnostic breakdown (n):** ADHD (4), bipolar (1), CD (7), depression (1), eating disorders (1), OCD (2), PDD (1), psychosis NOS (3), schizophrenia (2), schizophreniform (0) **Treatment naïve (n):** 8 **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** psychosis (6), SA (13)			

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Friedlander, 2001{1612} **Country:** Canada **Condition category:** Multiple categories (bipolar, DBD, OCD, PDD, schizophrenia-related, Tourette's syndrome) **Questions:** KQ2, KQ4 **Funding:** NR **Newcastle-Ottawa Scale:** 4 stars	**Recruitment dates:** NR **Study design:** Retrospective cohort **Setting:** NR **Diagnostic criteria:** DSM-IV, author consensus on chart review **Inclusion criteria:** (1) 13–24 yr, (2) developmental disabilities and complex psychiatric problems, (3) active files with the mental health sites in the Greater Vancouver area **Exclusion criteria:** NR	**Enrolled:** 44 **Analyzed:** 44 **Completed:** NR **GROUP 1** **N:** 14 **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** Addison's disease (1), hypothyroidism (4), MR (borderline (1), mild (17), moderate (15), severe (9)), Neurodevelopmental syndrome (15), Seizure disorder (9) **GROUP 2** **N:** 40 **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** see group 1	**Treatment duration:** 6 wk **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** all groups: anticholinergics (5), anticonvulsants (12), anxiolytics (9), clonidine (1), mood stabilizers (21), non–SSRI antidepressants (8), SSRIs (9), stimulants (2), tetrabenazine (2) **GROUP 2** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** see group 1	**Symptomatology (KQ1):** NR **AE (KQ2):** Akathisia, dyskinesia, dystonia, EPS, prolactin-related AE, sedation, total AE, WAE, weight change **Other ST and LT outcomes (KQ3):** NR **Sub-populations (KQ4):** Gender (Neuroleptic-induced movement disorders); psychosis (drug dosage)	Adolescents and young adults with developmental disabilities treated with second–generation antipsychotics for multiple conditions were particularly sensitive to neuroleptic induced movement disorders.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Gilbert, 2004{1348} **Country:** USA **Condition category:** Tourette's syndrome **Questions:** KQ1, KQ2 **Funding:** Industry, Government **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (crossover) **Setting:** NR **Diagnostic criteria:** DSM-IV-TR, clinical assessment **Inclusion criteria:** (1) 7–17 yr, (2) Tourette's syndrome or chronic motor tic disorder, (3) CGI tic severity score >4 after 2 wk with no medication **Exclusion criteria:** (1) transient tic disorder, anorexia nervosa, PDD, substance/alcohol abuse or dependence within the past yr, or any psychotic disorder, (2) serious or unstable medical illness or abnormal ECG or laboratory findings, (3) sexually active females of childbearing potential not using contraceptives	**Enrolled:** 19 **Analyzed:** NR **Completed:** 13 **GROUP 1** **N:** 19 (crossover) **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (7), conduct disorder (1), learning disorder (3), OCD (2), oppositional defiant disorder (2) **GROUP 2** **N:** 19 (crossover) **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** see group 1	**Treatment duration:** 8 wk **Run–in phase:** Yes **Run–in phase duration:** 2 wk **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Pimozide **Dosing variability:** variable **Target dose (mg/day):** 4 **Daily dose (mg/day), mean±SD (range):** 2.4 (1–4) **Concurrent treatments:** NR **GROUP 2** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** 4 **Daily dose (mg/day), mean±SD (range):** 2.5 (1–4) **Concurrent treatments:** NR	**Symptomatology (KQ1):** CGI-I, TSSR, YGTSS **AE (KQ2):** EPS (ESRS), ECG changes, side effect check list, weight changes **Other ST and LT outcomes (KQ3):** NR **Sub-populations (KQ4):** NR	Risperidone was superior to pimozide for tic suppression but it induced weight gain.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Gothelf, 2002{1020} **Country:** Israel **Condition category:** Schizophrenia and related **Questions:** KQ2 **Funding:** Government **Newcastle-Ottawa Scale:** 3 stars	**Recruitment dates:** NR **Study design:** Prospective cohort (NR) **Setting:** Inpatient **Diagnostic criteria:** DSM-IV, K-SADS **Inclusion criteria:** NR **Exclusion criteria:** (1) taking medications that affect weight	**Enrolled:** 20 **Analyzed:** NR **Completed:** NR **GROUP 1** **N:** 10 **Age, mean±SD (range):** 17.0±1.6 **Males %:** 100 **Caucasian %:** NR **Treatment naïve (n):** ND **Inpatients (n):** all **First episode psychosis (n):** NR **GROUP 2** **N:** 10 **Age, mean±SD (range):** 17±1.6 **Males %:** 100 **Caucasian %:** NR **Treatment naïve (n):** 1 **Inpatients (n):** all **First episode psychosis (n):** NR	**Treatment duration:** 4 wk **Run–in phase:** Yes **Run–in phase duration:** 17.6 day (mean) **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Haloperidol **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 6.5±3.4 **Concurrent treatments:** NR **GROUP 2** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 14±4.1 **Concurrent treatments:** NR	**Symptomatology (KQ1):** NR **AE (KQ2):** Abdominal circumference, BMI, weight **Other ST and LT outcomes (KQ3):** NR **Sub-populations (KQ4):** NR	Body mass index significantly increased in adolescent male inpatients treated with olanzapine but not in those given haloperidol.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Haas, 2009{66} **Country:** USA **Condition category:** Bipolar **Questions:** KQ1, KQ2, KQ3, KQ4 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** Dec 2003 to Dec 2005 **Study design:** RCT (parallel) **Setting:** Inpatient and outpatient **Diagnostic criteria:** DSM-IV, K-SADS-PL **Inclusion criteria:** (1) 10–17 yr, (2) medically stable, (3) acute manic/mixed episode (K–SADS–PL), (4) total score ≥20 at screening and baseline on YMRS, (5) responsible caregiver **Exclusion criteria:** (1) known intellectual impairment	**Enrolled:** 170 **Analyzed:** 169 **Completed:** 137 **GROUP 1** **N:** 50 **Age, mean±SD (range):** NR (10–17) **Males %:** 56 **Caucasian %:** 70 **Diagnostic breakdown (n):** manic episode (20), mixed episode (30) **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (25), DBD (27) **GROUP 2** **N:** 61 **Age, mean±SD (range):** NR (10–17) **Males %:** 43 **Caucasian %:** 82 **Diagnostic breakdown (n):** manic episode (21), mixed episode (40) **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (33), DBD (40) **GROUP 3** **N:** 58	**Treatment duration:** 3 wk **Run–in phase:** Yes **Run–in phase duration:** ≤5 day **Permitted drugs:** medication for EPS; sedatives/hypnotics (run–in and wk 1 only) **Prohibited drugs:** anticonvulsants, antidepressants, antimanic medications, other antipsychotics (including herbal substances); methylphenidate/other medication for ADHD **GROUP 1** **Drug name:** Risperidone (low) **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** (0.5–2.5) **Concurrent treatments:** NR **GROUP 2** **Drug name:** Risperidone (high) **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 3 (26%), 4 (19%), 5 (15%), 6 (41%) (3–6) **Concurrent treatments:** NR **GROUP 3** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** NR	**Symptomatology (KQ1):** BPRS, CGI-BP, YMRS **AE (KQ2):** Behavioral issues, BMI, dermatologic AE, EPS, fatigue, glucose, lipid profile, mortality, prolactin, prolactin-related AE, SAE, sedation, somnolence, tardive dyskinesia, total AE, WAE, weight change **Other ST and LT outcomes (KQ3):** Medication adherence, response, suicide **Sub-populations (KQ4):** Age (YMRS, AE); gender, race, diagnostic subgroup, or hospitalization at screening (YMRS)	A significant reduction in manic symptoms was seen in youth when treated with risperidone (0.5–2.5 mg/d or 3–6 mg/d) compared to placebo.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Haas, 2009 (continued)		**Age, mean±SD (range):** NR (10–17) **Males %:** 48 **Caucasian %:** 78 **Diagnostic breakdown (n):** manic episode (19), mixed episode (39) **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (27), DBD (34)			

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Haas, 2009{90} **Country:** Belgium, Bulgaria, Czech Republic, Estonia, Germany, Poland, Romania, USA **Condition category:** Schizophrenia and related **Questions:** KQ1, KQ2, KQ3, KQ4 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** Apr 2001 to Mar 2006 **Study design:** RCT (parallel) **Setting:** Inpatient **Diagnostic criteria:** DSM-IV, K-SADS-PL **Inclusion criteria:** (1) 13–17 yr, (2) schizophrenia, (3) currently hospitalized for an acute episode (PANSS total score 60–120) **Exclusion criteria:** (1) significant risk for suicidal or violent behaviour, (2) history of NMS, tardative dyskinesia, or a known or suspected seizure disorder, (3) BMI <5th percentile or >95th percentile, (4) schizophreniform disorder	**Enrolled:** 257 **Analyzed:** 255 **Completed:** 172 **GROUP 1** **N:** 132 **Age, mean±SD (range):** 15.6±1.32 (13–17) **Males %:** 61 **Caucasian %:** 85 **Diagnostic breakdown (n):** catatonic (3), disorganized (6), paranoid (92), residual (7), undifferentiated (24) **Treatment naïve (n):** NR **Inpatients (n):** all **First episode psychosis (n):** NR **GROUP 2** **N:** 125 **Age, mean±SD (range):** 15.6±1.25 (13–17) **Males %:** 52 **Caucasian %:** 85 **Diagnostic breakdown (n):** catatonic (4), disorganized (13), paranoid (83), residual (0), undifferentiated (25) **Treatment naïve (n):** NR **Inpatients (n):** all **First episode psychosis (n):** NR	**Treatment duration:** 8 wk **Run–in phase:** Yes **Run–in phase duration:** ≥7 day **Permitted drugs:** antiparkinsonian medications (first 3 wk), propranolol, rescue medications (diazepam, hydroxyzine, lorazepam, zolpidem, zopiclone) **Prohibited drugs:** NR **GROUP 1** **Drug name:** Risperidone (low) **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 0.4 (0.2–0.6) **Concurrent treatments:** all groups: rescue medication (133) **GROUP 2** **Drug name:** Risperidone (high) **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 4 (1.5–6) **Concurrent treatments:** see group 1	**Symptomatology (KQ1):** CGI-I, CGI-S, PANSS **AE (KQ2):** Akathisia, behavioral issues, dyskinesia, dystonia, ECG changes, EPS, glucose, mortality, prolactin, prolactin-related AE, SAE, somnolence, tachycardia, total AE, WAE, weight change **Other ST and LT outcomes (KQ3):** Medication adherence, response, suicide **Sub-populations (KQ4):** Gender (prolactin)	A greater improvement in total PANSS score was found with high dose risperidone than with low dose risperidone.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Hellings, 2006{716} **Country:** USA **Condition category:** Behavioral issues (aggression, property destruction, self–injury) **Questions:** KQ1, KQ2, KQ4 **Funding:** Industry, Government **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (crossover) **Setting:** Outpatient/community **Diagnostic criteria:** DSM-IV **Inclusion criteria:** (1) 6–65 yr, (2) MR (IQ <70), (3) at least 6 mo history of aggression, property destruction, or self–injury, (4) above normal baseline Irritability score for age, gender and setting (ABC–C) **Exclusion criteria:** (1) previous risperidone hypersensitivity, (2) history of NMS, (3) seizures within the past yr, (4) degenerative brain disease, (5) problematic living situation	**Enrolled:** 26 **Analyzed:** 26 **Completed:** NR **GROUP 1** **N:** 26 (crossover) **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** Autistic Disorder (ND), MR (Mild (8), moderate (6), severe (8), profound (4)), PDD-NOS (ND) **GROUP 2** **N:** 26 (crossover) **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** see group 1 **GROUP 3** **N:** 26 (crossover) **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** see group 1	**Treatment duration:** 5.1 mo (5.5 mo extension) **Run–in phase:** Yes **Run–in phase duration:** 5–7 wk **Permitted drugs:** divalproex, gabapentin (if epilepsy was in remission ≥1 yr) **Prohibited drugs:** psychotropics, including stimulants **GROUP 1** **Drug name:** Risperidone (low) **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** all groups: divalproex (5), gabapentin (1) **GROUP 2** **Drug name:** Risperidone (high) **Dosing variability:** variable **Target dose (mg/day):** 0.05 mg/kg/day **Daily dose (mg/day), mean±SD (range):** 2 (1.2–2.9) **Concurrent treatments:** see group 1 **GROUP 3** **Drug name:** Placebo II **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** see group 1	**Symptomatology (KQ1):** ABC, CGI-I, PAC, VAS **AE (KQ2):** NMS, tardive dyskinesia, weight change **Other ST and LT outcomes (KQ3):** NR **Sub-populations (KQ4):** Age (ABC irritability, prolactin, weight), gender, age, comorbidity, co-treatment, mood disorder (response)	Compared to placebo, risperidone was more effective in treating problematic behaviours in children and adolescents with MR. Low doses were better tolerated and were equally effective compared to high doses.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Hollander, 2006{732} **Country:** USA **Condition category:** PDD **Questions:** KQ1, KQ2, KQ3 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** NR **Diagnostic criteria:** DSM-IV, ADI-R, ADOS **Inclusion criteria:** (1) 6–17 yr, (2) meets DSM–IV and ADI–R criteria with a rating of at least moderate (≥4) on the CGI **Exclusion criteria:** (1) response to prior pharmacological treatment, (2) psychotic disorders and a history of any clinically significant medical illness (with the exception of a stable seizure disorder)	**Enrolled:** 11 **Analyzed:** 11 **Completed:** 8 **GROUP 1** **N:** 6 **Age, mean±SD (range):** 9.3±2.9 (6–14.8) **Males %:** 100 **Caucasian %:** 50 **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** MR (normal (2), mild (2), severe (2)) **GROUP 2** **N:** 5 **Age, mean±SD (range):** 8.9±2.1 (6.1–11) **Males %:** 60 **Caucasian %:** 80 **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** MR (normal (2), mild (3))	**Treatment duration:** 8 wk **Run–in phase:** Yes **Run–in phase duration:** 4 wk **Permitted drugs:** anticonvulsants (stable dose ≥3 mo), clonidine, chloral hydrate **Prohibited drugs:** NR **GROUP 1** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 10±2 (7.5–12.5) **Concurrent treatments:** none **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 10±2 (7.5–12.5) **Concurrent treatments:** none	**Symptomatology (KQ1):** CGI-I **AE (KQ2):** Constipation, EPS, sedation, weight change **Other ST and LT outcomes (KQ3):** Response (CGI-I, CPRS) **Sub-populations (KQ4):** NR	Olazapine improved global functioning in children and adolescents with PDD, but was associated with a significant risk of weight gain.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Hrdlicka, 2009{371} **Country:** Czech Republic **Condition category:** Schizophrenia and related **Questions:** KQ2 **Funding:** Government, Academic **Newcastle-Ottawa Scale:** 5 stars	**Recruitment dates:** 1997 to 2007 **Study design:** Retrospective cohort **Setting:** Inpatient **Diagnostic criteria:** ICD-10 **Inclusion criteria:** (1) schizophrenia dx (F20–29), (2) medical record quality sufficient to evaluate the patient, (3) the first treatment used following admission was considered (with the exception of clozapine), (4) only antipsychotic treatments initiated after admission to the Department of Child Psychiatry were analyzed **Exclusion criteria:** NR	**Enrolled:** 109 **Analyzed:** NR **Completed:** 52 **GROUP 1** **N:** 24 **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 2** **N:** 85 **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR	**Treatment duration:** 6 wk **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Typical (Haloperidol, Perphenazine, Sulpiride) **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** Haloperidol 6.8±1.1, Perphenazine 12±6.9, Sulpiride 450±409.3 **Concurrent treatments:** NR **GROUP 2** **Drug name:** Atypical (Clozapine, Olanzapine, Risperidone, Ziprasidone) **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** Clozapine 247.5±118, Olanzapine 15±6.1, Risperidone 2.7±1.3, Ziprasidone 80±0 **Concurrent treatments:** NR	**Symptomatology (KQ1):** NR **AE (KQ2):** Weight changes **Other ST and LT outcomes (KQ3):** NR **Sub-populations (KQ4):** NR	Weight gain did not differ between the groups on typical and atypical antipsychotics.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Jefferson, 1998{6075} **Country:** USA **Condition category:** Multiple categories (bipolar, DBD, PDD, schizophrenia-related) **Questions:** KQ2 **Funding:** NR **Newcastle-Ottawa Scale:** 4 stars	**Recruitment dates:** 1997 **Study design:** Retrospective cohort **Setting:** Inpatient **Diagnostic criteria:** NR **Inclusion criteria:** NR **Exclusion criteria:** NR	**Enrolled:** 20 **Analyzed:** NR **Completed:** NR **GROUP 1** **N:** 2 **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 2** **N:** 17 **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 3** **N:** 1 **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR	**Treatment duration:** 3 mo **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** psychotropics **Prohibited drugs:** NR **GROUP 1** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 7.5 (5–10) **Concurrent treatments:** all groups: antidepressants (1), clonidine (1), mood stabilizers (6), psychostimulants (1) **GROUP 2** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 2.8 (1–7) **Concurrent treatments:** see group 1 **GROUP 3** **Drug name:** Olanzapine + Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** see group 1	**Symptomatology (KQ1):** NR **AE (KQ2):** Blood pressure, EPS, hepatic enzyme, sedation, tardive dyskinesia **Other ST and LT outcomes (KQ3):** NR **Sub-populations (KQ4):** NR	Risperidone and olanzapine were well tolerated at relatively low doses and in combination with other psychotropic agents.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Jensen, 2008{233} **Country:** USA **Condition category:** Schizophrenia and related **Questions:** KQ1, KQ2, KQ3 **Funding:** NR **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** May 2003 to June 2006 **Study design:** RCT (parallel) **Setting:** Inpatient and outpatient **Diagnostic criteria:** DSM-IV, K-SADS **Inclusion criteria:** (1) 10–18 yr, (2) schizophrenia/ schizoaffective disorder, schizophreniform, or psychotic disorder NOS, (3) ≥1 positive or negative symptom associated with schizophrenia present throughout the past 2 wk (PANSS) **Exclusion criteria:** (1) MR or affective disorder with psychotic features, (2) current alcohol or drug dependence or abuse, (3) history of serious adverse reactions or nonresponse to an adequate trial of any of the proposed treatments, (4) pregnant or refusal to practice	**Enrolled:** 30 **Analyzed:** 29 **Completed:** 21 **GROUP 1** **N:** 10 **Age, mean±SD (range):** 15.3±1.5 **Males %:** 50 **Caucasian %:** 50 **Diagnostic breakdown (n):** psychotic disorder NOS (6), schizophrenia, schizoaffective, schizophreniform disorder (4) **Treatment naïve (n):** NR **Inpatients (n):** 9 **First episode psychosis (n):** NR **Comorbidities:** MR (0), psychosis (all) **GROUP 2** **N:** 10 **Age, mean±SD (range):** 14.8±2.3 **Males %:** 70 **Caucasian %:** 60 **Diagnostic breakdown (n):** psychotic disorder NOS (3), schizophrenia, schizoaffective, schizophreniform disorder (7) **Treatment naïve (n):** NR **Inpatients (n):** 9 **First episode psychosis (n):** NR	**Treatment duration:** 2.8 mo **Run–in phase:** Yes **Run–in phase duration:** 2 wk **Permitted drugs:** diphenhydramine (≤100 mg/day), lorazepam (0.5–2 mg/day) **Prohibited drugs:** antidepressants, mood stabilizers, and stimulants (discontinued prior to or within first 2 wk of trial) **GROUP 1** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** 20 **Daily dose (mg/day), mean±SD (range):** 14±4.6 (5–20) **Concurrent treatments:** anticholinergics (0), dietary counselling, psychoeducation **GROUP 2** **Drug name:** Quetiapine **Dosing variability:** variable **Target dose (mg/day):** 800 **Daily dose (mg/day), mean±SD (range):** 611±253.4 (100–800) **Concurrent treatments:** anticholinergics (0), dietary counselling, psychoeducation **GROUP 3** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** 6 **Daily dose (mg/day), mean±SD**	**Symptomatology (KQ1):** CGAS, CGI-S **AE (KQ2):** Akathisia, behavioral issues, dyskinesia, EPS, mastitis, sedation, WAE, weight change **Other ST and LT outcomes (KQ3):** Medication adherence, response **Sub-populations (KQ4):** NR	There was no statistically significant difference between groups in the reduction of PANSS scores; however a larger RCT may be warranted to test the clinical significance of differences between treatment with quetiapine and risperidone.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Jensen, 2008 (continued)	contraception, (5) serious and unstable medical condition	**Comorbidities:** MR (0), psychosis (all) **GROUP 3** **N:** 10 **Age, mean±SD (range):** 15.6±2.5 **Males %:** 80 **Caucasian %:** 70 **Diagnostic breakdown (n):** psychotic disorder NOS (0), schizophrenia, schizoaffective, schizophreniform disorder (10) **Treatment naïve (n):** NR **Inpatients (n):** 9 **First episode psychosis (n):** NR **Comorbidities:** MR (0), psychosis (all)	**(range):** 3.4±1.5 (1–6) **Concurrent treatments:** anticholinergics (0), dietary counselling, psychoeducation,		

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Khan, 2006{12514} **Country:** USA **Condition category:** Behavioral issues (agitation, aggression) **Questions:** KQ1, KQ2, KQ3, KQ4 **Funding:** NR **Newcastle-Ottawa Scale:** 4 stars	**Recruitment dates:** Jan 2003 to Jan 2005 **Study design:** Retrospective cohort **Setting:** Inpatient **Diagnostic criteria:** NR **Inclusion criteria:** (1) <18 yr, (2) hospitalized with any mental illness, (3) treatment with IM ziprasidone or olanzapine for acute agitation/agression, (4) hospitalized during study period **Exclusion criteria:** (1) >18 yr, (2) moderate, severe or profound MR, (3) patients who did not receive IM ziprasidone/ olanzapine for agitation or agression during their inpatient stay, (4) patients receiving both IM ziprasidone and olanzapine	**Enrolled:** 100 **Analyzed:** 100 **Completed:** 100 **GROUP 1** **N:** 50 **Age, mean±SD (range):** 13.7±2.4 **Males %:** 68 **Caucasian %:** 60 **Diagnostic breakdown (n):** any Axis I dx with psychosis (18) **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** PTSD (18), SA (27) **GROUP 2** **N:** 50 **Age, mean±SD (range):** 14.6±2.1 **Males %:** 32 **Caucasian %:** 68 **Diagnostic breakdown (n):** any Axis I dx with psychosis (16) **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** see group 1	**Treatment duration:** Olanzapine 3.7 (2.4) wk, Ziprasidone 4.9 (3.4) wk (mean(SD)) **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** total 8.2±2.4, children 6±2.2, adolescents 9.20±1.8 **Concurrent treatments:** antipsychotic other than ziprasidone (41); aripiprazole, quetiapine most commonly prescribed **GROUP 2** **Drug name:** Ziprasidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** total 19.1±2.7, children 15.7±4.4, adolescents 19.5±2.1 **Concurrent treatments:** antipsychotics (48) (olanzapine (13), clozapine (4)); aripiprazole, quetiapine the most commonly prescribed	**Symptomatology (KQ1):** Number of aggressive episodes **AE (KQ2):** Dermatologic AE, pseudoparkinsonism, sedation **Other ST and LT outcomes (KQ3):** Health care system utilization **Sub-populations (KQ4):** Age (dosage), gender and age (restraints)	IM ziprasidone and IM olanzapine may be equally effective for the treatment of children and adolescents with agitation and aggression.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Kryzhanovskaya, 2009{351} **Country:** Russia, USA **Condition category:** Schizophrenia and related **Questions:** KQ1, KQ2, KQ3, KQ4 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** Nov 2002 to Apr 2005 **Study design:** RCT (parallel) **Setting:** Inpatient and outpatient **Diagnostic criteria:** DSM-IV-TR, K-SADS **Inclusion criteria:** (1) 13–17 yr, (2) schizophrenia (paranoid, disorganized, catatonic, undifferentiated, and residual types), (3) able to perform all protocol–required examinations, (4) total score ≥35 on the anchored version of the BPRS–C16 and a score ≥3 on at least one of the following BPRS–C items at enrolment and randomization: hallucinations, delusions, or peculiar fantasies, (5) previously treated with clozapine and other atypical antipsychotics **Exclusion criteria:** (1) previous participation in a clinical trial of oral olanzapine, (2)	**Enrolled:** 107 **Analyzed:** 107 **Completed:** 64 **GROUP 1** **N:** 72 **Age, mean±SD (range):** 16.1±1.3 (13–18) **Males %:** 70.8 **Caucasian %:** 72.2 **Treatment naïve (n):** 21 **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** MR (0), SA (0) **GROUP 2** **N:** 35 **Age, mean±SD (range):** 16.3±1.6 (13.1–18) **Males %:** 68.6 **Caucasian %:** 71.4 **Treatment naïve (n):** 5 **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** MR (0), SA (0)	**Treatment duration:** 6 wk (6 mo extension) **Run–in phase:** Yes **Run–in phase duration:** 2–14 day **Permitted drugs:** anticholinergics (2–6mg/day), benzodiazepines (2 mg/day lorazepam equivalents for ≤3 consecutive days) **Prohibited drugs:** NR **GROUP 1** **Drug name:** Olanzapine **Dosing variability:** fixed **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 11.1 (2.5–20) **Concurrent treatments:** anticholinergics (3), benzodiazepines (21) **GROUP 2** **Drug name:** Placebo **Dosing variability:** fixed **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** anticholinergics (2), benzodiazepines (18)	**Symptomatology (KQ1):** BPRS-C, PANSS, CGI-I, CGI-S, OAS **AE (KQ2):** BMI, ECG changes, glucose, hepatic enzyme, lipid profile, mortality, prolactin, sedation, schizophrenia, somnolence, WAE, weight change **Other ST and LT outcomes (KQ3):** Medication adherence, response, suicide **Sub-populations (KQ4):** Country (response)	Adolescents with schizophrenia experienced significant symptom improvement when treated with olanzapine compared to placebo.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Kryzhanovskaya, 2009 (continued)	treatment within 30 day of the trial with a drug without regulatory approval for any indication, (3) documented olanzapine allergic reaction, (4) previous nonresponse to an adequate dose/duration of olanzapine treatment, (5) potential safety concerns, (6) pregnancy, nursing, or refusal to practice acceptable contraception, (7) acute/unstable medical conditions, (8) current/expected use of any concomitant psychotropic medications (except for permitted drugs), (9) baseline prolactin ≥200 ng/mL, (10) clinically significant laboratory abnormalities, (11) DSM–IV–TR substance dependence within 30 day (except nicotine and caffeine) (12) current DSM–IV–TR dx of a comorbid psychiatric or developmental disorder				

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Kumra, 2008{55} **Country:** USA **Condition category:** Schizophrenia and related **Questions:** KQ1, KQ2, KQ3 **Funding:** NR **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** Sep 2001 to Mar 2006 **Study design:** RCT (parallel) **Setting:** Inpatient and outpatient **Diagnostic criteria:** DSM-IV, K-SADS-PL, structured interview **Inclusion criteria:** (1) 10–18 yr, (2) schizophrenia or schizoaffective disorder, (3) treatment–refractoriness (documented treatment failure of ≥2 prior adequate antipsychotic trials and a baseline BRPS total score ≥35 and at least moderate on one or more psychotic items on the BRPS) **Exclusion criteria:** (1) premorbid dx of MR, (2) history of serious adverse reactions to the proposed treatments, (3) pregnant, (4) serious and unstable medical condition, (5) failed an adequate trial of clozapine (≥12 wk) at adequate doses (≥300mg/day) and/or failed an adequate trial of olanzapine (≥8wk) at high doses (≥20mg/day)	**Enrolled:** 40 **Analyzed:** 39 **Completed:** 28 **GROUP 1** **N:** 19 **Age, mean±SD (range):** 15.8±2.2 **Males %:** 44.4 **Caucasian %:** 11.1 **Diagnostic breakdown (n):** schizoaffective disorder (7), schizophrenia (11) **Treatment naïve (n):** 0 **Inpatients (n):** NR **First episode psychosis (n):** 0 **Comorbidities:** MR (0) **GROUP 2** **N:** 21 **Age, mean±SD (range):** 15.5±2.1 **Males %:** 61.9 **Caucasian %:** 28.6 **Diagnostic breakdown (n):** schizoaffective disorder (7), schizophrenia (14) **Treatment naïve (n):** 0 **Inpatients (n):** NR **First episode psychosis (n):** 0 **Comorbidities:** MR (0)	**Treatment duration:** 2.8 mo (2.8 mo extension) **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** current medications tapered as tolerated (first 4 wk of trial) **Prohibited drugs:** NR **GROUP 1** **Drug name:** Clozapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 403.1±201.8 (50–700) **Concurrent treatments:** all groups: antidepressants (4), depakoate (3), lithium (7), mood stabilizer (6), naltrexone (1), stimulant (1); group 1: n=6 **GROUP 2** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 26.2±6.5 (10–30) **Concurrent treatments:** see group 1; group 2: n=11	**Symptomatology (KQ1):** BPRS, CGAS, CGI-I, CGI-S, SANS **AE (KQ2):** Blood cells, BMI, constipation, diabetes, EPS, glucose, lipid profile, prolactin, SAE, WAE, weight change **Other ST and LT outcomes (KQ3):** Response **Sub-populations (KQ4):** NR	A greater number of children diagnosed with schizophrenia/ schizoaffective disorder and treated with clozapine met drug response criteria than children treated with olanzapine. Clinicians should be aware of potential metabolic adverse events of long–term clozapine treatment.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Kumra, 1998{1844} **Country:** USA **Condition category:** Schizophrenia and related **Questions:** KQ1, KQ2, KQ3 **Funding:** Industry **Newcastle-Ottawa Scale:** 5 stars	**Recruitment dates:** NR **Study design:** Prospective cohort **Setting:** Inpatient **Diagnostic criteria:** DSM-III-TR, K-SADS-E **Inclusion criteria:** (1) schizophrenia with psychotic symptoms documented by 12 yr (DSM–III–R), (2) failure of two prior neuroleptic treatments, (3) communication capability, (4) premorbid Full Scale IQ >70 **Exclusion criteria:** (1) any significant unstable neurological or medical disorder, (2) current serious suicidal risk, (3) active alcohol or drug abuse	**Enrolled:** 23 **Analyzed:** 23 **Completed:** 21 **GROUP 1** **N:** 15 **Age, mean±SD (range):** 13.6±1.5 **Males %:** 53.3 **Caucasian %:** NR **Diagnostic breakdown (n):** disorganized (8), paranoid (2), undifferentiated (5) **Treatment naïve (n):** NR **Inpatients (n):** all **First episode psychosis (n):** NR **GROUP 2** **N:** 8 **Age, mean±SD (range):** 15.3±2.3 **Males %:** 50 **Caucasian %:** NR **Diagnostic breakdown (n):** disorganized (3), paranoid (1), undifferentiated (4) **Treatment naïve (n):** NR **Inpatients (n):** all **First episode psychosis (n):** NR	**Treatment duration:** Clozapine 6 wk, Olanzapine 8 wk **Run–in phase:** Yes **Run–in phase duration:** 17.5 day (mean) **Permitted drugs:** benzodiazepines (<8 mg/day) **Prohibited drugs:** NR **GROUP 1** **Drug name:** Clozapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 317±147 (100–600) **Concurrent treatments:** NR **GROUP 2** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 17.5±2.3 (12.5–20) **Concurrent treatments:** benzodiazepines (7), lithium (1)	**Symptomatology (KQ1):** BPRS, SANS, SAPS **AE (KQ2):** Behavioral issues, blood cells, constipation, EPS, liver function, seizure, somnolence, tachycardia, weight change **Other ST and LT outcomes (KQ3):** Response **Sub-populations (KQ4):** NR	Preliminary data suggested clozapine and olanzapine were efficacious in children and adolescents with treatment–refractory schizophrenia.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Kumra, 1996{1564} **Country:** USA **Condition category:** Schizophrenia and related **Questions:** KQ1, KQ2, KQ3 **Funding:** NR **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** Inpatient **Diagnostic criteria:** DSM-III-TR, K-SADS, DICA-R **Inclusion criteria:** (1) schizophrenia with documented psychotic symptoms by 12 yr (DSM–III–TR), (2) intolerance, nonresponse, or both to ≥2 different neuroleptic drugs, (3) full–scale IQ ≥70 **Exclusion criteria:** (1) neurologic or medical disease	**Enrolled:** 21 **Analyzed:** 21 **Completed:** 17 **GROUP 1** **N:** 11 **Age, mean±SD (range):** 13.7±1.6 **Males %:** 54.6 **Caucasian %:** NR **Diagnostic breakdown (n):** disorganized (5), paranoid (1), undifferentiated (5) **Treatment naïve (n):** NR **Inpatients (n):** 11 **First episode psychosis (n):** 0 **GROUP 2** **N:** 10 **Age, mean±SD (range):** 14.4±2.9 **Males %:** 50 **Caucasian %:** NR **Diagnostic breakdown (n):** disorganized (5), undifferentiated (5) **Treatment naïve (n):** NR **Inpatients (n):** 10 **First episode psychosis (n):** 0	**Treatment duration:** 6 wk **Run–in phase:** Yes **Run–in phase duration:** 6 wk **Permitted drugs:** group 1: benztropine mesylate (≤6 mg/day); group 2: identical placebo; all: atenolol, antibiotics, anticonvulsants **Prohibited drugs:** NR **GROUP 1** **Drug name:** Haloperidol **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 16±8 (7–27) **Concurrent treatments:** NR **GROUP 2** **Drug name:** Clozapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 176±149 (25–525) **Concurrent treatments:** amoxicillin (1), penicillin (1)	**Symptomatology (KQ1):** BPRS-C, CGAS, CGI-I, SANS, SAPS **AE (KQ2): B**lood cells, blood pressure, EPS (SAS, AIMS), drowsiness, hepatic enzyme, NMS, seizure, tachycardia, weight **Other ST and LT outcomes (KQ3):** NR **Sub-populations (KQ4):** NR	Clozapine was more effective in controlling positive and negative symptoms in treatment–refractory childhood onset schizophrenia than haloperidol.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Luby, 2006{729} **Country:** USA **Condition category:** PDD **Questions:** KQ1, KQ2 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** Nov 1999 to Nov 2002 **Study design:** RCT (parallel) **Setting:** Outpatient/community **Diagnostic criteria:** DSM-IV **Inclusion criteria:** (1) 2.5–6 yr, (2) autism or PDD–NOS (DSM–IV), (3) absence of other known significant CNS disorders, (4) absence of significant medical problems or other psychiatric disorders requiring pharmacotherapy **Exclusion criteria:** NR	**Enrolled:** 24 **Analyzed:** 23 **Completed:** NR **GROUP 1** **N:** 12 **Age, mean±SD (range):** 4.1±0.9 **Males %:** 75 **Caucasian %:** 91 **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 2** **N:** 12 **Age, mean±SD (range):** 4±1.1 **Males %:** 66.7 **Caucasian %:** 92 **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR	**Treatment duration:** 6 mo **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 1.1±0.3 (0.5–1.5) **Concurrent treatments:** applied behavior analysis (mean 21.2 hr/wk) **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 1.4±0.6 (0.5–1.5) **Concurrent treatments:** applied behavior analysis (mean 11.3 hr/wk)	**Symptomatology (KQ1):** CARS **AE (KQ2):** Constipation, EPS, mortality, prolactin, SAE, sedation, WAE, weight change **Other ST and LT outcomes (KQ3):** NR **Sub-populations (KQ4):** NR	Risperidone was well tolerated in preschoolers, but only minimal improvement in target symptoms was evident.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Malone, 2001{1853} **Country:** USA **Condition category:** PDD **Questions:** KQ1, KQ2, KQ3 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** Inpatient and outpatient **Diagnostic criteria:** DSM-IV **Inclusion criteria:** (1) primary dx of PDD, (2) 5–17 yr, (3) at least moderate impairment on ≥2 of the first 28 items on the CPRS **Exclusion criteria:** (1) major medical problems, (2) seizure disorder or gross neurological deficit, (3) treatment with concomitant psychotropic medication, (4) history of previous treatment with haloperidol or olanzapine	**Enrolled:** 12 **Analyzed:** 12 **Completed:** 12 **GROUP 1** **N:** 6 **Age, mean±SD (range):** 7.3±1.9 (5–10.1) **Males %:** 66.7 **Caucasian %:** 66.7 **Diagnostic breakdown (n):** autistic disorder (5), PDD NOS (1) **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** MR (mild (1), moderate (2), severe (3)) **GROUP 2** **N:** 6 **Age, mean±SD (range):** 8.5±2.4 (4.9–11.8) **Males %:** 66.7 **Caucasian %:** 50 **Diagnostic breakdown (n):** autistic disorder (all) **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** MR (mild (0), moderate (3), severe (2))	**Treatment duration:** 6 wk **Run–in phase:** Yes **Run–in phase duration:** 1 wk **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Haloperidol **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 1.4±0.7 (0.5–2.5) **Concurrent treatments:** NR **GROUP 2** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 7.9±2.5 (5–10) **Concurrent treatments:** NR	**Symptomatology (KQ1):** CGI-S, CPRS **AE (KQ2):** Dermatologic AE, EPS (AIMS), EPS, fatigue, tachycardia, weight changes **Other ST and LT outcomes (KQ3):** Response (CGI-I) **Sub-populations (KQ4):** NR	The use of olanzapine is promising in children with autistic disorder, although placebo–controlled and long–term studies are needed.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Marcus, 2009{2417} **Country:** USA **Condition category:** PDD **Questions:** KQ1, KQ2, KQ3 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** June 2006 to Jun 2008 **Study design:** RCT (parallel) **Setting:** Outpatient/community **Diagnostic criteria:** DSM-IV-TR, ADI-R **Inclusion criteria:** (1) 6–17 yr, (2) DSM IV–TR criteria for autistic disorder and behaviors such as tantrums, aggression, self–injury, or a combination, with a dx corroborated by ADI–R certified trainer, (3) CGI–S score ≥4 and ABC Irritability subscale score ≥18 at screening and baseline, (4) ≥15 kg, (5) stable nonpharmacologic therapy **Exclusion criteria:** (1) bipolar disorder, psychosis, schizophrenia, major depression, fragile X syndrome, or another ASD, (2) history of NMS, (3) significant risk of committing suicide, (4)	**Enrolled:** 218 **Analyzed:** 213 **Completed:** 178 **GROUP 1** **N:** 53 **Age, mean±SD (range):** 9.0±2.8 **Males %:** 88.7 **Caucasian %:** 69.8 **Treatment naïve (n):** 43 **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 2** **N:** 59 **Age, mean±SD (range):** 10±3.2 **Males %:** 84.7 **Caucasian %:** 69.5 **Treatment naïve (n):** 45 **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 3** **N:** 54 **Age, mean±SD (range):** 9.5±3.1 **Males %:** 92.6 **Caucasian %:** 77.8 **Treatment naïve (n):** 44 **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 4**	**Treatment duration:** 8 wk **Run–in phase:** Yes **Run–in phase duration:** ≤6 wk **Permitted drugs:** anxiolytics, benztropine or propranolol, diphenhydramine (≤50 mg/day), psychotropic medication, sleep aids **Prohibited drugs:** antidepressants, antipsychotics, anxiolytics, mood stabilizers, neuroleptics, psychostimulants (washout ≥4 day) **GROUP 1** **Drug name:** Aripiprazole (low) **Dosing variability:** fixed **Target dose (mg/day):** 5 **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** analgesics and antipyretics (12), anxiolytics (2), benztropine (2), hypnotics and sedatives (2), propranolol (2) **GROUP 2** **Drug name:** Aripiprazole (medium) **Dosing variability:** fixed **Target dose (mg/day):** 10 **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** analgesics and antipyretics (12), anxiolytics (1), benztropine (1), hypnotics and sedatives (1) **GROUP 3** **Drug name:** Aripiprazole (high)	**Symptomatology (KQ1):** ABC, CYBOCS, CGI-I, CGI-S **AE (KQ2):** Akathisia, BMI, dermatologic AE, ECG changes, EPS, EPS (AIMS, Barnes, SAS), fatigue, glucose, lipid profile, mortality, prolactin, SAE, sedation, seizure/convulsion, somnolence, total AE, WAE, weight change **Other ST and LT outcomes (KQ3):** medication adherence, response (ABC-I, CGI-I), suicide **Sub-populations (KQ4):** NR	Aripiprazole was efficacious, safe, and well tolerated in children and adolescents with irritability assocated with autistic disorder.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Marcus, 2009 (continued)	seizure in the past yr, (5) history of severe head trauma or stroke, (6) history or current evidence of any unstable medical condition or or an abnormal laboratory test result considered clinically significant, (7) antipsychotic treatment resistant, (8) known allergy or hypersensitivity to aripiprazole	**N:** 52 **Age, mean±SD (range):** 10.2±3.1 **Males %:** 92.3 **Caucasian %:** 67.3 **Treatment naïve (n):** 40 **Inpatients (n):** NR **First episode psychosis (n):** NR	**Dosing variability:** fixed **Target dose (mg/day):** 15 **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** analgesics and antipyretics (12), anxiolytics (1), benzotropine (5), hypnotics and sedatives (1) **GROUP 4** **Drug name:** Placebo **Dosing variability:** fixed **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** analgesics and antipyretics (9), anxiolytics (3), hypnotics and sedatives (2), propranolol (1)		

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
McCracken, 2002{1380} **Country:** USA **Condition category:** PDD **Questions:** KQ1, KQ2, KQ3, KQ4 **Funding:** Industry, Government, Foundation **Risk of bias:** Unclear (subjective), Unclear (objective)	**Recruitment dates:** Jun 1999 to Apr 2001 **Study design:** RCT (parallel) **Setting:** Inpatient and outpatient **Diagnostic criteria:** DSM-IV, ADI-R **Inclusion criteria:** (1) ASD (DSM–IV), (2) 5–17 yr, (3) weight ≥15 kg, (4) score ≥18 on the Irritability subscale of the ABC at baseline, (5) free of serious medical disorders and of other psychiatric disorders requiring medication, (6) medication free for at least 2 wk for all psychotropic medications (4 wk for fluoxetine or depot neuroleptics), (7) anticonvulsants used for the treatment of a seizure disorder were permitted if the dosage had been stable for 4 wk and the patient had been seizure free for ≥6 mo, (8) CGI–S score ≥ 4 at baseline, (9) mental age ≥18 mo as	**Enrolled:** 101 **Analyzed:** 101 **Completed:** 80 **GROUP 1** **N:** 49 **Age, mean±SD (range):** NR **Males %:** 80 **Caucasian %:** NR **Treatment naïve (n):** 45 **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** MR (average/above average IQ (3), borderline IQ (8), mild/ moderate retardation (20), severe retardation (15)) **GROUP 2** **N:** 52 **Age, mean±SD (range):** NR **Males %:** 83 **Caucasian %:** NR **Treatment naïve (n):** 51 **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** MR (average/above average IQ (2), borderline IQ (4), mild/ moderate retardation (23), severe retardation (16))	**Treatment duration:** 8 wk (4 mo extension for risperidone responders; 8 wk extension for placebo nonresponders) **Run–in phase:** Yes **Run–in phase duration:** 1–4 wk **Permitted drugs:** anticonvulsants (constant dose ≥4 wk and seizure–free for ≥6 mo), benztropine **Prohibited drugs:** antihistamines, ceterazine, erythromycin, metoclopromide, pseudoephedrine, and any drug that may impact risperidone concentrations or lead to drug interactions; psychotropics **GROUP 1** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 1.8±0.7 (0.5–3.5) **Concurrent treatments:** anticonvulsants (2) **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 2.4±0.6 (0.5–3.5) **Concurrent treatments:** anticonvulsants (2)	**Symptomatology (KQ1):** ABC, CYBOCS, CGI-I, RFRLRS, VAS **AE (KQ2):** Behavioral issues, blood cells, BMI, constipation, dyskinesia, dermatologic AE, ECG changes, EPS, fatigue, liver function, prolactin, prolactin-related AE, SAE, seizure, tachycardia, WAE, weight change **Other ST and LT outcomes (KQ3):** Cognitive, medication adherence, patient, parent/care provider reported outcomes (diet/intake, sleep), response **Sub-populations (KQ4):** Age, IQ, baseline ABC irritability (relapse, weight); Dose, gender, site, Tanner stage, Child Symptom Inventory, CY-BOCS, heart	Risperidone was effective and well tolerated for the treatment of tantrums, aggression, or self–injurious behavior in children with autistic disorder. Discontinuation, after 6 month of treatment, was associated with rapid return of disruptive and aggressive behavior in most subjects.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
McCracken, 2002 (continued)	measured by the age–appropriate form of the IQ test, (10) inpatients or outpatients **Exclusion criteria:** (1) receiving a psychotropic drug that was deemed effective for the treatment of aggression, tantrums, or self–injurious behavior, (2) positive β–HCG pregnancy test, (3) evidence of a prior adequate trial with risperidone, (4) evidence of hypersensitivity to risperidone, (5) past history of NMS, (6) DSM–IV dx of schizophrenia, another psychotic disorder, or substance abuse, (7) significant medical condition, (8) weight <15 kg			rate, BP, weight, initial leptin change (weight); age, baseline BMI, caloric intake (BMI)	

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Miral, 2008{157} **Country:** Turkey **Condition category:** PDD **Questions:** KQ1, KQ2 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** NR **Diagnostic criteria:** DSM-IV **Inclusion criteria:** (1) 8–18 yr, (2) parental informed consent, (3) agree to follow–up **Exclusion criteria:** (1) epilepsy, (2) concomitant neuropsychiatric illness, (3) psychotic disorder or symptoms, (4) other PDDs	**Enrolled:** 30 **Analyzed:** 28 **Completed:** 28 **GROUP 1** **N:** 15 **Age, mean±SD (range):** 10.9±2.9 (7–17) **Males %:** 86.7 **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (0), psychosis (0) **GROUP 2** **N:** 15 **Age, mean±SD (range):** 10±2.7 (7–17) **Males %:** 73.3 **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (0), psychosis (0)	**Treatment duration:** 2.8 mo (2.8 mo extension) **Run–in phase:** Yes **Run–in phase duration:** 1–2 wk **Permitted drugs:** antianalgesics, antibiotics, anticholinergics, antipyretics, decongestants **Prohibited drugs:** benzodiazepines/other sedatives **GROUP 1** **Drug name:** Haloperidol **Dosing variability:** variable **Target dose (mg/day):** 0.08 mg/kg/day **Daily dose (mg/day), mean±SD (range):** 2.6±1.3 (1–5.7) **Concurrent treatments:** NR **GROUP 2** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** 0.08 mg/kg/day **Daily dose (mg/day), mean±SD (range):** 2.6±0.8 (1.2–4.0) **Concurrent treatments:** NR	**Symptomatology (KQ1):** ABC, CGI, RFRLRS **AE (KQ2):** Blood pressure, constipation, EPS (ESRS), height, parkinsonism/ dystonia/ dyskinesia (ESRS), prolactin-related AE, SAE, weight **Other ST and LT outcomes (KQ3):** NR **Sub-populations (KQ4):** NR	Risperidone was more effective than haloperidol, showing improvements in behavioral symptoms and social skills.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Mozes, 2006{734} **Country:** Israel **Condition category:** Schizophrenia and related **Questions:** KQ1, KQ2, KQ3 **Funding:** No funding **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** Inpatient **Diagnostic criteria:** DSM-IV, K-SADS **Inclusion criteria:** (1) hospitalized childhood–onset schizophrenic children **Exclusion criteria:** (1) MR	**Enrolled:** 25 **Analyzed:** 25 **Completed:** 20 **GROUP 1** **N:** 12 **Age, mean±SD (range):** 11.5±1.6 (8.5–14) **Males %:** 41.7 **Caucasian %:** NR **Diagnostic breakdown (n):** disorganized schizophrenia (3), paranoid schizophrenia (2), schizophreniform disorder (6), unspecified schizoprehenia (1) **Treatment naïve (n):** NR **Inpatients (n):** all **First episode psychosis (n):** NR **Comorbidities:** ADHD (2), familial mediterranean fever (1), MR (0), tic disorder (1) **GROUP 2** **N:** 13 **Age, mean±SD (range):** 10.7±1.4 (8.8–13.3) **Males %:** 38.5 **Caucasian %:** NR **Diagnostic breakdown (n):** disorganized schizophrenia (4), paranoid schizophrenia (4), schizophreniform disorder (4), unspecified schizoprehenia (1) **Treatment naïve (n):** NR **Inpatients (n):** all	**Treatment duration:** 2.8 mo **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** biperiden, prior nonantipsychotics (continued for 2–12 wk) **Prohibited drugs:** NR **GROUP 1** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 8.2±4.4 (2.5–20) **Concurrent treatments:** biperiden (2), carbamazepine (2), citalopram (1), colchicine (1), methylphenidate (2), promethizine (2), valproic acid (1) **GROUP 2** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 1.6±1 (0.3–4.5) **Concurrent treatments:** biperiden (4), citalopram (2), fluoxetine (1), phenytoin (1), promethizine (1), valproic acid (1)	**Symptomatology (KQ1):** BPRS, CGAS, PANSS **AE (KQ2):** Akathisia, prolactin, WAE, weight change **Other ST and LT outcomes (KQ3):** Response **Sub-populations (KQ4):** NR	Risperidone and olanzapine were efficacious and well tolerated in pediatric inpatients with child–onset schizophrenia.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Mozes, 2006 (continued)		**First episode psychosis (n):** NR **Comorbidities:** ADHD (1), epilepsy (2), MR (0), neurofibromatosis (1), OCD (3)			

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Nagaraj, 2006{749} **Country:** India **Condition category:** PDD **Questions:** KQ1, KQ2, KQ3 **Funding:** Industry, Academic **Risk of bias:** Unclear (subjective), Unclear (objective)	**Recruitment dates:** Jan 2002 to Dec 2003 **Study design:** RCT (parallel) **Setting:** Outpatient/community **Diagnostic criteria:** DSM-IV **Inclusion criteria:** (1) ≤12 yr, (2) autism (DSM–IV) **Exclusion criteria:** (1) severe MR, (2) any significant coexisting disease or illness, (3) severe malnutrition	**Enrolled:** 40 **Analyzed:** 39 **Completed:** 39 **GROUP 1** **N:** 19 **Age, mean±SD (range):** 4.8±1.7 **Males %:** 84.2 **Caucasian %:** NR **Treatment naïve (n):** 15 **Inpatients (n):** 0 **First episode psychosis (n):** NR **Comorbidities:** aggression (9), irritability (17), seizures (5), self–injurious behavior (7) **GROUP 2** **N:** 21 **Age, mean±SD (range):** 5.3±1.7 **Males %:** 90 **Caucasian %:** NR **Treatment naïve (n):** 16 **Inpatients (n):** 0 **First episode psychosis (n):** NR **Comorbidities:** aggression (11), irritability (19), seizures (3), self–injurious behavior (5)	**Treatment duration:** 6 mo **Run–in phase:** Yes **Run–in phase duration:** ≥1 mo **Permitted drugs:** antiepileptics **Prohibited drugs:** no other drugs permitted **GROUP 1** **Drug name:** Risperidone **Dosing variability:** fixed **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 1 (0.5–1) **Concurrent treatments:** NR **GROUP 2** **Drug name:** Placebo **Dosing variability:** fixed **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 1 (0.5–1) **Concurrent treatments:** NR	**Symptomatology (KQ1):** CARS, CGAS **AE (KQ2):** Dyskinesia, sedation, weight change **Other ST and LT outcomes (KQ3):** Response (CARS, CGAS, Global Impression of Parents) **Sub-populations (KQ4):** NR	Risperidone improved global functioning and social responsiveness, reduced hyperactivity and aggression, and was well tolerated in children with autism.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
NCT00090324, 2008{20035} **Country:** ND **Condition category:** Schizophrenia and related **Questions:** KQ1, KQ2, KQ3, KQ4 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** Oct 2004 to June 2007 **Study design:** RCT (parallel) **Setting:** Inpatient and outpatient **Diagnostic criteria:** DSM-IV, K-SADS-PL **Inclusion criteria:** (1) inpatients and outpatients, (2) 13–17 yr, (3) schizophrenia (DSM–IV, confirmed by K–SADS–PL), (4) PANSS total score ≥60 and a score ≥4 on delusions, conceptual disorganization, or hallucinations **Exclusion criteria:** NR	**Enrolled:** 222 **Analyzed:** 222 **Completed:** 222 **GROUP 1** **N:** 73 **Age, mean±SD (range):** 15.5±1.3 (13–17) **Males %:** 58.9 **Caucasian %:** 61.6 **Diagnostic breakdown (n):** disorganized (6), paranoid (53), residual (0), undifferentiated (14) **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 2** **N:** 74 **Age, mean±SD (range):** 15.5±1.3 (13–17) **Males %:** 59.5 **Caucasian %:** 59.5 **Diagnostic breakdown (n):** disorganized (5), paranoid (50), residual (1), undifferentiated (18) **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 3** **N:** 75 **Age, mean±SD (range):** 15.3±1.4 (13–17)	**Treatment duration:** 6 wk **Run–in phase:** Yes **Run–in phase duration:** 1 day–4 wk **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Quetiapine (low) **Dosing variability:** variable **Target dose (mg/day):** 400 **Daily dose (mg/day), mean±SD (range):** 400 **Concurrent treatments:** NR **GROUP 2** **Drug name:** Quetiapine (high) **Dosing variability:** variable **Target dose (mg/day):** 800 **Daily dose (mg/day), mean±SD (range):** 800 **Concurrent treatments:** NR **GROUP 3** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** NR	**Symptomatology (KQ1):** CGAS, CGI-I, CGI-S, PANSS **AE (KQ2):** Behavioral issues, ECG changes, EPS , fatigue, lipid profile, mortality, prolactin, pulse, SAE, sedation, somnolence, tachycardia, thyroid function, total AE, WAE, weight change **Other ST and LT outcomes (KQ3):** Care provider reported outcome (Caregiver Strain Questionnaire), response **Sub-populations (KQ4):** Geographical region (AE)	ND

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
NCT00090324, 2008 (continued)		**Males %:** 57.5 **Caucasian %:** 63 **Diagnostic breakdown (n):** disorganized (5), paranoid (52), residual (0), undifferentiated (16) **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR			

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
NCT00257166, 2008{20031} **Country:** Canada, USA **Condition category:** Bipolar **Questions:** KQ1, KQ2, KQ3 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** Jan 2006 to Jul 2007 **Study design:** RCT (parallel) **Setting:** NR **Diagnostic criteria:** DSM-IV, K-SADS **Inclusion criteria:** (1) 10–17 yr, (2) primary dx of bipolar I disorder (DSM–IV, confirmed by K–SADS), (3) current symptoms present for ≥7 day prior to screening, (4) YMRS score >17 at screening and baseline visits, (5) BMI Z–score –1.65–2.00, inclusive **Exclusion criteria:** NR	**Enrolled:** 238 **Analyzed:** 237 **Completed:** NR **GROUP 1** **N:** 149 **Age, mean±SD (range):** 13.6 **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 2** **N:** 88 **Age, mean±SD (range):** 13.7 **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR	**Treatment duration:** 4 wk **Run–in phase:** Yes **Run–in phase duration:** 1–10 day **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Ziprasidone **Dosing variability:** variable **Target dose (mg/day):** 60–80 (<45 kg), 120–160 (>45 kg) **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** NR **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** 60–80 (<45 kg), 120–160 (>45 kg) **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** NR	**Symptomatology (KQ1):** YMRS **AE (KQ2):** Behavioral issues, dystonia, ECG changes, fatigue, liver function, mortality, SAE, sedation, somnolence, total AE, WAE, weight change **Other ST and LT outcomes (KQ3):** Cognetive (Speed of processing score), suicide **Sub-populations (KQ4):** NR	Oral ziprasidone was shown to be effective in the treatment of children and adolescents with bipolar I disorder (manic or mixed) compared to placebo.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
NCT00257192, 2010{20032} **Country:** Canada, Columbia, Costa Rica, Germany, India, Malaysia, Mexico, Peru, Russia, Singapore, Sweden, Ukraine, USA **Condition category:** Schizophrenia and related **Questions:** KQ1, KQ2, KQ3 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** Apr 2006 to Mar 2009 (terminated prematurely) **Study design:** RCT (parallel) **Setting:** NR **Diagnostic criteria:** DSM-IV, KID-SCID **Inclusion criteria:** (1) 13–17 yr, (2) schizophrenia (DSM–IV, confirmed by KID–SCID), (3) current symptoms present for ≥7 days prior to screening, (4) first episode psychosis allowed, (5) BPRS – Anchored score ≥35 and a score ≥4 on ≥1 of the following items: unusual thought content, hallucinations, suspiciousness, or conceptual disorganization at screening and baseline visits, (6) BMI Z–score –1.65–2.00, inclusive **Exclusion criteria:** NR	**Enrolled:** 284 **Analyzed:** 283 **Completed:** NR **GROUP 1** **N:** NR **Age, mean±SD (range):** 15.3 **Males %:** NR **Caucasian %:** NR **Diagnostic breakdown (n):** paranoid type (127) **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 2** **N:** NR **Age, mean±SD (range):** 15.4 **Males %:** NR **Caucasian %:** NR **Diagnostic breakdown (n):** paranoid type (57) **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR	**Treatment duration:** 6 wk **Run–in phase:** Yes **Run–in phase duration:** 1–10 day **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Ziprasidone **Dosing variability:** variable **Target dose (mg/day):** 60–80 (<45 kg), 120–160 (≥45 kg) **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** NR **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** 60–80 (<45 kg), 120–160 (≥45 kg) **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** NR	**Symptomatology (KQ1):** BPRS-A **AE (KQ2):** Akathisia, behavioral issues, dermatologic AE, ECG changes, fatigue, EPS, liver function, mortality, SAE, somnolence, total AE, WAE, weight change **Other ST and LT outcomes (KQ3):** Health related quality of life (Child Health Questionnaire), suicide **Sub-populations (KQ4):** NR	Oral ziprasidone failed to demonstrate superiority over placebo in adolescents with schizophrenia.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Novaes, 2008{41} **Country:** Brazil **Condition category:** PDD **Questions:** KQ3, KQ4 **Funding:** Foundation **Newcastle-Ottawa Scale:** 6 stars	**Recruitment dates:** Jan 2001 to June 2006 **Study design:** Retrospective cohort **Setting:** Outpatient/community **Diagnostic criteria:** DSM-IV **Inclusion criteria:** (1) ASD, (2) behavioral disturbances (psychomotor agression or agitation) **Exclusion criteria:** NR	**Enrolled:** 26 **Analyzed:** 26 **Completed:** 26 **GROUP 1** **N:** 1 **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** 0 **First episode psychosis (n):** NR **Comorbidities:** Aggression/Agitation (26), MR (20) **GROUP 2** **N:** 13 and 5 **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** 0 **First episode psychosis (n):** NR **Comorbidities:** see group 1 **GROUP 3** **N:** 4 **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** see group 1 **GROUP 4** **N:** 3 **Age, mean±SD (range):** NR	**Treatment duration:** 17 mo (mean) **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Typical antipsychotic **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** NR **GROUP 2** **Drug name:** Risperidone/Risperidone + Typical antipsychotic **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** NR **GROUP 3** **Drug name:** Atypical antipsychotic (not risperidone) **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** NR **GROUP 4** **Drug name:** Typical + atypical	**Symptomatology (KQ1):** NR **AE (KQ2):** NR **Other ST and LT outcomes (KQ3):** Response (CGI-I) **Sub-populations (KQ4):** Age, comorbidity (MR), co-treatment (non-pharmacological), duration of treatment, health-care setting (response)	Second–generation antipsychotics appeared to reduce agitation and aggression in patients with ASD.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Novaes, 2008 (continued)		**Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** see group 1	antipsychotic **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** one treatment (12), ≥2 treatments (7)		

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Perry, 1989{2250} **Country:** USA **Condition category:** PDD **Questions:** KQ1, KQ2, KQ3, KQ4 **Funding:** Industry, Government, Foundation **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** Outpatient/community **Diagnostic criteria:** DSM-III-TR **Inclusion criteria:** (1) dx of infantile autism, full syndrome present, (2) only children with good response to haloperidol and requiring further drug treatment were accepted into the study **Exclusion criteria:** (1) identifiable cause for autism, (2) seizure disorder, (3) preexisting movement disorder	**Enrolled:** 70 **Analyzed:** 60 **Completed:** 52 **GROUP 1** **N:** 34 **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 2** **N:** 36 **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR	**Treatment duration:** 6 mo **Run–in phase:** Yes **Run–in phase duration:** 2 wk **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Haloperidol (continuous) **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 1.2 (0.5–4) **Concurrent treatments:** NR **GROUP 2** **Drug name:** Haloperidol (discontinuous) **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 1 (0.5–4.0) **Concurrent treatments:** NR	**Symptomatology (KQ1):** CGI-I **AE (KQ2):** Dyskinesia, parkinsonism, sedation **Other ST and LT outcomes (KQ3):** Response (CGI-I, CGI-S) **Sub-populations (KQ4):** Age, developmental quotient, baseline rating scores (CGI-I)	Haloperidol, administered on a long–term basis, effectively reduced maladaptive symptoms in austic children. Drug efficacy was not deminished by discontinuous drug administration.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Ratzoni, 2002{3985} **Country:** Israel **Condition category:** Schizophrenia and related (DBD, Schizophrenia) **Questions:** KQ1, KQ2, KQ3, KQ4 **Funding:** Government, Foundation **Newcastle-Ottawa Scale:** 3 stars	**Recruitment dates:** Jan 2000 to Aug 2000 **Study design:** Prospective cohort **Setting:** Inpatient **Diagnostic criteria:** DSM-IV, K-SADS-PL (Hebrew version), consensus of 2 child psychiatrists **Inclusion criteria:** (1) adolescent patients who started treatment with olanzapine, risperidone, or haloperidol from Jan to Aug 2000 **Exclusion criteria:** (1) receiving other medications that cause weight gain/loss, (2) alcohol/substance abuse, (3) medical illnesses affecting body weight	**Enrolled:** 50 **Analyzed:** 50 **Completed:** 36 **GROUP 1** **N:** 8 **Age, mean±SD (range):** 17.3±1.3 (15–19) **Males %:** 62.5 **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** all **First episode psychosis (n):** NR **GROUP 2** **N:** 21 **Age, mean±SD (range):** 17±1.6 (14–19) **Males %:** 66.7 **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** all **First episode psychosis (n):** NR **GROUP 3** **N:** 21 **Age, mean±SD (range):** 17.1±2.1 (13–20.5) **Males %:** 57.1 **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** all **First episode psychosis (n):** NR	**Treatment duration:** 2.8 mo **Run–in phase:** Yes **Run–in phase duration:** 5.2 day (mean) **Permitted drugs:** anticholinergics, lorazepam **Prohibited drugs:** antipsychotics, heterocyclic antidepressants, lithium, medications that can cause weight gain/loss, SSRIs, valproic acid **GROUP 1** **Drug name:** Haloperidol **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 7.6±4 (3–15) **Concurrent treatments:** biperiden (6), lorazepam (5), trihexyphenidyl (2) **GROUP 2** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 12.7±3.1 (7.5–20) **Concurrent treatments:** biperiden (6), lorazepam (5), trihexyphenidyl (2) **GROUP 3** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 3.2±1.1 (1–5) **Concurrent treatments:** biperiden (6), lorazepam (5), trihexyphenidyl (2)	**Symptomatology (KQ1):** PANSS **AE (KQ2):** Akathisia, behavioural issues, BMI, constipation, dermatologic AE, dystonia, EPS, fatigue, hypokinesia-akinesia, sedation, seizure, sexual desire, tachycardia, WAE, weight **Other ST and LT outcomes (KQ3):** Medication adherence **Sub-populations (KQ4):** Gender, treatment history, illness duration, dose, baseline weight, parental BMI, concern about weight gain, history of diet (BMI, weight)	Adolsecents experienced greater weight gain when taking olanzapine or risperidone compared to effects reported in adults.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Reyes, 2006{524} **Country:** Belgium, Germany, Great Britain, Israel, Netherlands, Poland, South Africa, Spain **Condition category:** DBD **Questions:** KQ1, KQ2, KQ3, KQ4 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** Aug 2001 to Sep 2003 **Study design:** RCT (parallel) **Setting:** NR **Diagnostic criteria:** DSM-IV, K-SADS-PL **Inclusion criteria:** (1) 5–17 yr, (2) no moderate or severe intellectual impairment (IQ ≥55), (3) CD serious enough to warrant clinical treatment, (4) score ≥24 on the conduct problem subscale of the NCBRF, (5) responsible caregiver **Exclusion criteria:** (1) schizophrenia and bipolar disorder	**Enrolled:** 335 **Analyzed:** 335 **Completed:** 162 **GROUP 1** **N:** 172 **Age, mean±SD (range):** 10.9±2.9 **Males %:** 82 **Caucasian %:** NR **Diagnostic breakdown (n):** CD (62), DBD NOS (3), ODD (107) **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (117) **GROUP 2** **N:** 163 **Age, mean±SD (range):** 10.8±2.9 **Males %:** 91 **Caucasian %:** NR **Diagnostic breakdown (n):** CD (61), DBD NOS (5), ODD (97) **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (110)	**Treatment duration:** 7.4 mo **Run–in phase:** Yes **Run–in phase duration:** 6 wk **Permitted drugs:** medication for EPS (only after dose reduction attempted), psychostimulants **Prohibited drugs:** anticonvulsants, antidepressants, antipsychotics, lithium **GROUP 1** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 0.8±0.3 (<50 kg), 1.2±0.4 (≥50 kg) **Concurrent treatments:** analgesics (26), psychostimulants (36) **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** analgesics (20), psychostimulants (36)	**Symptomatology (KQ1):** CGAS, CGI-I, CGI-S, NCBRF, VAS-MS **AE (KQ2):** Akathisia, BMI, dystonia, EPS, fatigue, parkinsonism, prolactin, prolactin-related AE, SAE, somnolence, tardive dyskinesia, total AE, WAE, weight change **Other ST and LT outcomes (KQ3):** Cognitive (MVLT, CPT), growth (tannar stages), response (relapse, symptom recurrence) **Sub-populations (KQ4):** Gender, age, diagnosis, disease severity (relapse); Age (AE, weight); Gender (prolactin)	Patients who responded to initial treatment with risperidone benefited from continued, long–term treatment. Risperidone was safe and well tolerated during a 1–year extension.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Robb, 2009{20033} **Country:** ND **Condition category:** Schizophrenia and related **Questions:** KQ1, KQ2, KQ3 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** Jul 2007 to Mar 2009 **Study design:** RCT (parallel) **Setting:** NR **Diagnostic criteria:** DSM-IV, K-SADS-PL **Inclusion criteria:** (1) 12–17 yr, (2) body weight ≥29 kg, (3) DSM–IV criteria for schizophrenia ≥1 yr before screening, (4) PANSS total score 60–120, (5) physically healthy based on medical history, physical examination, ECG, and laboratory test results **Exclusion criteria:** (1) dissociative disorder, bipolar disorder, MDD, schizoaffective disorder, schizophreniform disorder, autistic disorder, or primary substance induced psychotic disorder (DSM–IV), (2) mild, moderate, or severe MR, (3) pregnant, (4) known or suspected history of seizure	**Enrolled:** 201 **Analyzed:** NR **Completed:** 139 **GROUP 1** **N:** 54 **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 2** **N:** 48 **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 3** **N:** 48 **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 4** **N:** 51 **Age, mean±SD (range):** NR **Males %:** NR	**Treatment duration:** 6 wk **Run–in phase:** Yes **Run–in phase duration:** ≤3 wk **Permitted drugs:** NR **Prohibited drugs:** alcohol, antidepressants, drugs of abuse, lithium **GROUP 1** **Drug name:** Paliperidone ER (low) **Dosing variability:** fixed **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** NR **GROUP 2** **Drug name:** Paliperidone ER (medium) **Dosing variability:** fixed **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** NR **GROUP 3** **Drug name:** Paliperidone ER (high) **Dosing variability:** fixed **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** NR **GROUP 4** **Drug name:** Placebo **Dosing variability:** fixed **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD**	**Symptomatology (KQ1):** CGAS, CGI-S, PANSS, VAS-sleep **AE (KQ2):** Blood pressure, ECG changes, glucose, insulin resistance, mortality, NMS, SAE, seizure, total AE, WAE, weight change **Other ST and LT outcomes (KQ3):** Suicide **Sub-populations (KQ4):** NR	The medium dose paliperidone ER group was statistically superior to the placebo group according to the primary efficacy analysis by weight–based, fixed–dose treatment group. When analyzed by actual dose group, all three doses of paliperidone showed improvement relative to placebo.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Robb, 2009 (continued)	disorder, NMS, encephalopathic syndrome, tardive dyskinesia, or insulin dependent diabetes mellitus, (5) presence of any significant or unstable systemic disease	**Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR	**(range):** NR **Concurrent treatments:** NR		

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Sallee, 2000{1850} **Country:** USA **Condition category:** Tourette's syndrome **Questions:** KQ1, KQ2, KQ4 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** Outpatient/community **Diagnostic criteria:** DSM-IV **Inclusion criteria:** (1) 7–17 yr, (2) DSM–IV dx of Tourette's syndrome or chronic tic disorder, with symptoms severe enough to warrant medication, (3) not pregnant or breast feeding **Exclusion criteria:** (1) secondary tic disorder, (2) DSM–IV criteria for major depression, PDD, autism, MR, anorexia nervosa/bulimia, substance abuse, or any psychotic disorder	**Enrolled:** 28 **Analyzed:** 27 **Completed:** 24 **GROUP 1** **N:** 16 **Age, mean±SD (range):** 11.3 (7–14) **Males %:** 87.5 **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (9), DBD (4), OCD (10; all groups), learning disability (2; all groups) **GROUP 2** **N:** 12 **Age, mean±SD (range):** 11.8 (8–16) **Males %:** 66.7 **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (6), DBD (1), OCD (10; all groups), learning disability (2; all groups)	**Treatment duration:** 8 wk **Run–in phase:** Yes **Run–in phase duration:** 4–8 wk **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Ziprasidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 28.2±9.6 **Concurrent treatments:** NR **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** NR	**Symptomatology (KQ1):** CGI-TS, CYBOCS, YGTSS **AE (KQ2):** Akathisia, prolactin, prolactin-related AESAE, sedation, somnolence, total AE, WAE, weight change **Other ST and LT outcomes (KQ3):** NR **Sub-populations (KQ4):** Comorbidity (CYBOCS)	Ziprasidone was well tolerated in children and adolscents with Tourette's syndrome, and may also be an effective anti–tic medication.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Sallee, 1997{1530} **Country:** USA **Condition category:** Tourette's syndrome **Questions:** KQ1, KQ2, KQ3, KQ4 **Funding:** Industry, Government **Risk of bias:** Unclear (subjective), Unclear (objective)	**Recruitment dates:** NR **Study design:** RCT (crossover) **Setting:** Outpatient/community **Diagnostic criteria:** DSM-III-TR, K-SADS-P **Inclusion criteria:** (1) principal DSM–III–R dx of Tourette's syndrome; may have multiple Axis I and II dx, (2) 7–16 yr, 11 mo, (3) TSGS score >20, (4) previous exposure to neuroleptics permitted, but treatment must have been withdrawn ≥2 wk before baseline **Exclusion criteria:** (1) chronic motor tic disorder or transient tic disorder, (2) serious medical illness, (3) abnormal ECG, (4) inability to perform required measurements, (5) use of concurrent medication that may alter or interact with haloperidol or pimozide, (6) history of drug or alcohol abuse, (7) autism or childhood schizophrenia	**Enrolled:** 22 **Analyzed:** 22 **Completed:** 22 **GROUP 1** **N:** 22 (crossover) **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (13), OCD (5) **GROUP 2** **N:** 22 (crossover) **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** see G1 **GROUP 3** **N:** 22 (crossover) **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** see G1	**Treatment duration:** 5.5 mo **Run–in phase:** Yes **Run–in phase duration:** >2 wk **Permitted drugs:** diphenhydramine hydrochloride **Prohibited drugs:** adjunctive treatment, anticholinergics, concomitant medications **GROUP 1** **Drug name:** Haloperidol **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 3.5±2.2 (1–8) **Concurrent treatments:** NR **GROUP 2** **Drug name:** Pimozide **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 3.4±1.6 (1–6) **Concurrent treatments:** NR **GROUP 3** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** NR	**Symptomatology (KQ1):** CGAS, CGI-S **AE (KQ2):** Akathisia, akinesia, behavioral issues, electrocardiovascular, EPS (AIMS, ESRS), prolactin, treatment limiting AE, WAE, weight change **Other ST and LT outcomes (KQ3):** Medication adherence, response **Sub-populations (KQ4):** Gender, Tanner score (prolactin)	Pimozide is superior to haloperidol for controlling symptoms of Tourette's syndrome in children and adolescents.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Sallee, 1994{2019} **Country:** USA **Condition category:** Tourette's syndrome **Questions:** KQ1, KQ3, KQ4 **Funding:** Foundation **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** Outpatient/community **Diagnostic criteria:** DSM-III-TR, TSGS **Inclusion criteria:** (1) consecutive outpatient children who met DSM–III–R criteria for Tourette's syndrome and severity criteria using the TSGS **Exclusion criteria:** NR	**Enrolled:** 41 **Analyzed:** 41 **Completed:** NR **GROUP 1** **N:** 17 **Age, mean±SD (range):** 10.4 **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (6) **GROUP 2** **N:** 24 **Age, mean±SD (range):** 10.8 **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (7)	**Treatment duration:** 6 wk (3 wk extension) **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Haloperidol **Dosing variability:** fixed **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 1.5±0.6 **Concurrent treatments:** NR **GROUP 2** **Drug name:** Pimozide **Dosing variability:** fixed **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 3.7±1.4 **Concurrent treatments:** NR	**Symptomatology (KQ1):** CBCL-TRF **AE (KQ2):** NR **Other ST and LT outcomes (KQ3):** Cognitive (CPT, MST) **Sub-populations (KQ4):** Comorbidity (CPT)	The effect of pimozide treatment on cognotion was superior to haloperidol in children with Tourette's syndrome with comorbid ADHD.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Scahill, 2003{1363} **Country:** USA **Condition category:** Tourette's syndrome **Questions:** KQ1, KQ2, KQ3 **Funding:** Industry, Government **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** Outpatient/community **Diagnostic criteria:** DSM-IV, joint parent and child interview **Inclusion criteria:** (1) 7–65 yr, (2) Tourette's syndrome (DSM–IV), (3) Total Tic score ≥22 on the YGTSS **Exclusion criteria:** (1) evidence of current major depression, GAD, separation anxiety disorder, or psychotic symptoms (clinical evaluation or DSM–IV), (2) WISC age–appropriate IQ <70, (3) prior adequate trial of risperidone (dose ≥1.0 mg/day for ≥2 wk), (4) psychotropic medication within 2 wk, (5) significant medical problem, (6) moderate or greater obsessive–compulsive symptoms (YBOCS >15)	**Enrolled:** 26 **Analyzed:** 26 **Completed:** NR **GROUP 1** **N:** 12 **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (11), MR (0), OCD (4) **GROUP 2** **N:** 14 **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** see group 1	**Treatment duration:** 8 wk **Run–in phase:** Yes **Run–in phase duration:** 1–2 wk **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** 3 **Daily dose (mg/day), mean±SD (range):** 2.5±0.9 **Concurrent treatments:** NR **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** 3 **Daily dose (mg/day), mean±SD (range):** 3.3±0.9 **Concurrent treatments:** NR	**Symptomatology (KQ1):** CGI-I, YGTSS **AE (KQ2):** Constipation, EPS, fatigue, prolactin-related AE, sedation, weight change **Other ST and LT outcomes (KQ3):** Response **Sub-populations (KQ4):** NR	For short–term treatment of tics in children, risperidone appeared to be safe and effective.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Schulz, 1996{1708} **Country:** Germany **Condition category:** Schizophrenia and related **Questions:** KQ2 **Funding:** Industry **Risk of bias:** NA (subjective), High (objective)	**Recruitment dates:** May 1991 to Oct 1992 **Study design:** NRCT (parallel) **Setting:** Inpatient and outpatient **Diagnostic criteria:** DSM-III-TR **Inclusion criteria:** (1) adolescents, (2) DSM–III–TR diagnostic criteria for schizophrenia or schizoaffective psychosis **Exclusion criteria:** NR	**Enrolled:** 40 **Analyzed:** 40 **Completed:** 40 **GROUP 1** **N:** 20 **Age, mean±SD (range):** 18.8±2.3 **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** 0 **Inpatients (n):** all **First episode psychosis (n):** NR **Comorbidities:** psychosis (all), SA (0), **GROUP 2** **N:** 20 **Age, mean±SD (range):** 19.5±2.1 **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** 0 **Inpatients (n):** all **First episode psychosis (n):** NR **Comorbidities:** psychosis (all), SA (0),	**Treatment duration:** 18 mo **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Typical antipsychotic **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 465±317 chlorpromazine–equivalents **Concurrent treatments:** β–blockers, biperiden, laxatives, sympathomimetics (15) **GROUP 2** **Drug name:** Clozapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 324±178 chlorpromazine–equivalents (75–600) **Concurrent treatments:** β–blockers or sympathomimetics (4)	**Symptomatology (KQ1):** NR **AE (KQ2):** Prolactin **Other ST and LT outcomes (KQ3):** NR **Sub-populations (KQ4):** NR	Prolactin levels were elevated with typical neuroleptics but not with clozapine in adolescent and young adults with schizophrenia.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Sehgal, 1999{6881} **Country:** USA **Condition category:** Tourette's syndrome **Questions:** KQ2, KQ3 **Funding:** Industry, Government, Foundation **Risk of bias:** High (subjective), NA (objective)	**Recruitment dates:** Oct 1993 to Nov 1995 **Study design:** RCT (parallel) **Setting:** NR **Diagnostic criteria:** DSM-III-TR **Inclusion criteria:** (1) DSM–III–R diagnostic criteria for Tourette's syndrome at participating medical centers **Exclusion criteria:** NR	**Enrolled:** 10 **Analyzed:** 10 **Completed:** 8 **GROUP 1** **N:** 4 **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** all **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 2** **N:** 6 **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** all **Inpatients (n):** NR **First episode psychosis (n):** NR	**Treatment duration:** 8 mo **Run–in phase:** Yes **Run–in phase duration:** 4 mo **Permitted drugs:** NR **Prohibited drugs:** antidepressants, benzodiazepines, clonidine, stimulants (washout ≥2 wk prior to enrolment) **GROUP 1** **Drug name:** Pimozide (short–term) **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 3. 8 (2–6) **Concurrent treatments:** NR **GROUP 2** **Drug name:** Pimozide (long–term) **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 3.5 (1–7) **Concurrent treatments:** NR	**Symptomatology (KQ1):** NR **AE (KQ2):** Tardive dyskinesia **Other ST and LT outcomes (KQ3):** Response **Sub-populations (KQ4):** NR	In children with Tourette's syndrome, longer term treatment with pimozide appears to be more effective on the course of tics than a short–term course of the drug used to suppress an acute exacerbation of tics.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Shaw, 2006{542} **Country:** USA **Condition category:** Schizophrenia and related **Questions:** KQ1, KQ2, KQ3 **Funding:** NR **Risk of bias:** Unclear (subjective), Unclear (objective)	**Recruitment dates:** Jan 1998 to June 2005 **Study design:** RCT (parallel) **Setting:** Inpatient **Diagnostic criteria:** DSM-IV, K-SADS, medical and school record review, interview with child and parents **Inclusion criteria:** (1) schizophrenia with definite onset of symptoms ≤13 yr , (2) IQ >70, (3) no history of progressive neurological or medical disorders, (4) failure to respond to 2 antipsychotic medications (typical or atypical) used at adequate doses (>100–mg chlorpromazine equivalents) and for adequate duration (>4 wk unless terminated owing to intolerable adverse effects) **Exclusion criteria:** (1) nonresponse to an adequate trial of olanzapine or clozapine (8 wk of olanzapine at 20 mg/d or of clozapine at 200 mg/d)	**Enrolled:** 25 **Analyzed:** 25 **Completed:** 24 **GROUP 1** **N:** 12 **Age, mean±SD (range):** 11.7±2.3 **Males %:** 66.7 **Caucasian %:** 58.3 **Treatment naïve (n):** 0 **Inpatients (n):** all **First episode psychosis (n):** 0 **Comorbidities:** ADHD (4), anxiety disorders (6), MR (0) **GROUP 2** **N:** 13 **Age, mean±SD (range):** 12.8±2.4 **Males %:** 53.8 **Caucasian %:** 53.8 **Treatment naïve (n):** 0 **Inpatients (n):** all **First episode psychosis (n):** 0 **Comorbidities:** ADHD (3), anxiety disorders (1), MR (0)	**Treatment duration:** 8 wk (2 yr extension) **Run–in phase:** Yes **Run–in phase duration:** 3 wk **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Clozapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 327±113 (150–500) **Concurrent treatments:** diphenhydramine hydrochloride (4), guanfacine hydrochloride (1), lorazepam (2), sedatives (4), ≤4 hr specialized education, recreational and occupational therapy **GROUP 2** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 18.1±4.3 **Concurrent treatments:** clomipramine hydrochloride (1), diphenhydramine hydrochloride (6), lorazepam (3), sedatives (3), valproate sodium (2), ≤4 hr specialized education, recreational and occupational therapy	**Symptomatology (KQ1):** BPRS-24, CGI-S, SANS, SAPS **AE (KQ2):** Behavioral issues, blood cells, blood pressure, constipation, dermatologic AE, ECG changes, EPS, lipid profile, seizure, sleepness, somnolence, tachycardia, weight change **Other ST and LT outcomes (KQ3):** Response **Sub-populations (KQ4):** NR	Clozapine had a more favorable profile of clinical response and adverse events than olanzapine.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Shea, 2004{1390} **Country:** Canada **Condition category:** PDD **Questions:** KQ1, KQ2, KQ3 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** Outpatient/community **Diagnostic criteria:** DSM-IV **Inclusion criteria:** (1) physically healthy outpatients, (2) 5–12 yr, (3) DSM–IV Axis I dx of PDD, (4) a total score >30 on the CARS with or without MR **Exclusion criteria:** (1) patients with schizophrenia, other psychotic disorders, clinically relevant nonneurologic disease, clinically significant laboratory abnormalities, or a seizure disorder for which they were receiving >1 anticonvulsant or if they had had a seizure in the last 3 mo, (2) history of hypersensitivity to neuroleptics, tardive dyskinesia, NMS, drug or alcohol abuse, or HIV infection, (3) used	**Enrolled:** 80 **Analyzed:** 79 **Completed:** 72 **GROUP 1** **N:** 41 **Age, mean±SD (range):** 7.6±0 (5–12) **Males %:** 72.5 **Caucasian %:** NR **Diagnostic breakdown (n):** Asperger's disorder (5), autistic disorder (27), childhood disintegrative disorder (1), PDD NOS (7), Rett disorder (0) **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** MR (15) **GROUP 2** **N:** 39 **Age, mean±SD (range):** 7.3±0 (5–12) **Males %:** 82.1 **Caucasian %:** NR **Diagnostic breakdown (n):** Asperger's disorder (7), autistic disorder (28), childhood disintegrative disorder (0), PDD NOS (4), Rett disorder (0) **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR	**Treatment duration:** 8 wk **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** anticholinergics, anticonvulsants and/or medications for sleep or anxiety (constant dose ≥30 days before enrolment), medications for preexisting organic disorders **Prohibited drugs:** α–2 antagonists, antidepressants, antipsychotics, cholinesterase inhibitors, clonidine, guanfacine, lithium, naltrexone, psychostimulants **GROUP 1** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 1.2 **Concurrent treatments:** analgesics (15), anti–asthmatics (6), antibiotics (5), anticholinergics (3), cough and cold preparations (10), sedatives/hypnotics (11) **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** analgesics (7), anti–asthmatics (4), antibiotics (5), anticholinergics (1), cough and cold preparations (4), sedatives/hypnotics (9)	**Symptomatology (KQ1):** ABC, NCBRF, VAS-MS **AE (KQ2):** Anorexia, behavioral issues, blood pressure, constipation, EPS, fatigue, hyperkinesias, pulse, SAE, somnolence, tachycardia, tardive dyskinesia, total AE, WAE, weight change **Other ST and LT outcomes (KQ3):** Response (ABC-I, CGI-C) **Sub-populations (KQ4):** NR	In children with PDD, risperidone was well tolerated and efficacious in the treatment of autism associated behavioral symptoms.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Shea, 2004 (continued)	risperidone in the last 3 mo or previously unresponsive or intolerant to risperidone, (4) using a prohibited medication	**Comorbidities:** MR (12)			

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Sikich, 2008{16} **Country:** USA **Condition category:** Schizophrenia and related **Questions:** KQ1, KQ2, KQ3 **Funding:** Government **Risk of bias:** Unclear (subjective), Unclear (objective)	**Recruitment dates:** Feb 2002 to May 2006 **Study design:** RCT (parallel) **Setting:** Inpatient and outpatient **Diagnostic criteria:** DSM-IV, KID-SCID **Inclusion criteria:** (1) 8–19 yr, (2) DSM–IV dx of schizophrenia, schizoaffective disorder, or schizophreniform disorder with current positive psychotic symptoms of at least moderate intensity, (PANSS or BRRS–C), (3) good physical health, (4) able to provide informed consent and guardian's written informed consent **Exclusion criteria:** (1) premorbid dx of MR, (2) current major depressive episode, active substance abuse, (3) history of intolerance or nonresponse to any of the study treatments during a prior episode, (4) history of successful	**Enrolled:** 78 **Analyzed:** 76 **Completed:** 45 **GROUP 1** **N:** 41 **Age, mean±SD (range):** NR **Males %:** 57.5 **Caucasian %:** 70 **Diagnostic breakdown (n):** schizoaffective disorder (14), schizophrenia (26) **Treatment naïve (n):** 16 **Inpatients (n):** 4 **First episode psychosis (n):** 35 **Comorbidities:** ADHD (12), affective disorder (9), anxiety disorder (6), ASD (2), DBD (4), learning disability (7), MR (0), none (14), psychosis (7), SA (4) **GROUP 2** **N:** 36 **Age, mean±SD (range):** NR **Males %:** 71.4 **Caucasian %:** 60 **Diagnostic breakdown (n):** schizoaffective disorder (13), schizophrenia (22) **Treatment naïve (n):** 13 **Inpatients (n):** 2 **First episode psychosis (n):** 33 **Comorbidities:** ADHD (13), affective disorder (7), anxiety disorder (9), ASD (2), DBD	**Treatment duration:** 8 wk (10.1 mo extension) **Run–in phase:** Yes **Run–in phase duration:** 2 wk **Permitted drugs:** antidepressants or non–antipsychotic mood–stabilizers (≥4 wk prior to study entry); anticholinergics, benzodiazepines, propranolol (concomitant); thymoleptics (maintenance phase) **Prohibited drugs:** NR **GROUP 1** **Drug name:** Molindone **Dosing variability:** variable **Target dose (mg/day):** 140 **Daily dose (mg/day), mean±SD (range):** 59. 9±33.5 (10–140) **Concurrent treatments:** antidepressants (4), benzodiazepines (3), mood stabilizers (3), propranolol (13%) **GROUP 2** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** 20 **Daily dose (mg/day), mean±SD (range):** 11.4±5 (2.5–20) **Concurrent treatments:** antidepressants (4), benzodiazepines (3), benztropine (14%), mood stabilizers (2), propranolol (11%) **GROUP 3** **Drug name:** Risperidone	**Symptomatology (KQ1):** BPRS-C, CGI-I, CGI-S, PANSS **AE (KQ2):** Akathisia, behavioral issues, blood pressure, BMI, constipation, dystonia, ECG changes, EPS, glucose, homeostasis, insulin, lipid profile, liver function, prolactin, prolactin-related AE, pulse, SAE, sedation, tardive dyskinesia, total AE, WAE, weight change **Other ST and LT outcomes (KQ3):** Medication adherence, response, suicide **Sub-populations (KQ4):** NR	Rispiridone and olanzapine failed to show superior efficacy over molindone in the treatment of early–onset schizophrenia and schizoaffective disorder.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Sikich, 2008 (continued)	use of the study treatments during the current episode (≥8 wk of treatment, including ≥2 wk at the maximal dose allowed in the current study), (5) imminent risk of harming themselves or others, (6) bipolar disorder, primary PTSD, primary personality disorder, or psychosis NOS (dx by clinician, confirmed by KID–SCID), (7) endocrinological or neurological conditions that confound the dx or are a contraindication to treatment, (8) pregnancy or refusal to practice contraception during the study, (9) use of a depot antipsychotic within the past 6 mo	(6), learning disability (1), MR (0), none (17), psychosis (4), SA (2) **GROUP 3** **N:** 42 **Age, mean±SD (range):** NR **Males %:** 65.9 **Caucasian %:** 61 **Diagnostic breakdown (n):** schizoaffective disorder (13), schizophrenia (28) **Treatment naïve (n):** 9 **Inpatients (n):** 6 **First episode psychosis (n):** 40 **Comorbidities:** ADHD (9), affective disorder (12), anxiety disorder (12), ASD (3), DBD (10), learning disability (2), MR (0), none (15), psychosis (6), SA (2)	**Dosing variability:** variable **Target dose (mg/day):** 6 **Daily dose (mg/day), mean±SD (range):** 2.8±1.4 (0.5–6) **Concurrent treatments:** antidepressants (5), benzodiazepines (6), benztropine (34%), mood stabilizers (4), propranolol (7%)		

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Sikich, 2004{1377} **Country:** USA **Condition category:** Psychosis **Questions:** KQ1, KQ2, KQ3, KQ4 **Funding:** Industry, Government, Foundation **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** Nov 1997 to May 2001 **Study design:** RCT (parallel) **Setting:** Inpatient and outpatient **Diagnostic criteria:** DSM-IV, K-SADS-P **Inclusion criteria:** (1) ≥1 positive psychotic symptom of moderate or greater severity on the BPRS–C, present throughout the past 2 wk, (2) full scale IQ >69, (3) patients with current or recent dx of ADHD, Tourette's syndrome, OCD, or a history of substance abuse or dependence were allowed to participate only if their psychotic symptoms were not better accounted for by the comorbid disorder **Exclusion criteria:** (1) psychotic symptoms resulting from acute substance intoxication or withdrawal, (2) history of serious adverse reactions or nonresponse to an	**Enrolled:** 50 **Analyzed:** 50 **Completed:** 32 **GROUP 1** **N:** 15 **Age, mean±SD (range):** 15.4±2.2 **Males %:** 53 **Caucasian %:** 73 **Diagnostic breakdown (n):** affective disorders (7), schizophrenia spectrum (8) **Treatment naïve (n):** NR **Inpatients (n):** 10 **First episode psychosis (n):** 12 **GROUP 2** **N:** 16 **Age, mean±SD (range):** 14.6±3.1 **Males %:** 56 **Caucasian %:** 63 **Diagnostic breakdown (n):** affective disorders (11), schizophrenia spectrum (5) **Treatment naïve (n):** NR **Inpatients (n):** 12 **First episode psychosis (n):** 12 **GROUP 3** **N:** 19 **Age, mean±SD (range):** 14.6±2.9 **Males %:** 68 **Caucasian %:** 47	**Treatment duration:** 8 wk (2.8 mo extension) **Run–in phase:** Yes **Run–in phase duration:** 1–2 wk **Permitted drugs:** amantadine (200 mg/day), antidepressants and mood stabilizers (if taken ≥4 wk preceding study entry or if clinically significant affective symptoms persisted after 4 wk of study treatment), benztropine (1–3 mg/day), lorazepam (0.5–3 mg/day), propranolol (20–60 mg/day), trihexyphenidyl (4–6 mg/day) **Prohibited drugs:** NR **GROUP 1** **Drug name:** Haloperidol **Dosing variability:** variable **Target dose (mg/day):** 1–5 **Daily dose (mg/day), mean±SD (range):** 5±2 (1–5) **Concurrent treatments:** amantadine (1), benztropine/trihexyphenidyl (7), buproprion (4), citalopram (1), gabapentin (1), lithium (1), lorazepam (3), paroxetine (1), sertraline (3), valproate (2), venlaflaxine (1), inpatient or residential treatment (9) **GROUP 2** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** 2.5–12.5 **Daily dose (mg/day), mean±SD (range):** 12.3±3.5 (2.5–12.5) **Concurrent treatments:**	**Symptomatology (KQ1):** BPRS-C, CPRS, CGI-I, CGI-S **AE (KQ2):** Akathisia, BMI, constipation, dermatolodic AE, dystonia, ECG changes, EPS, glucose, lipid profile, prolactin, prolactin-related AE, sedation, WAE, weight changes, white blood cells **Other ST and LT outcomes (KQ3):** Medication adherence, response **Sub-populations (KQ4):** age, co-treatment, treatment history, diagnosis, baseline symptom severity (response)	Risperidone and olanzapine were effective in acutely reducing symptoms in psychotic youth.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Sikich, 2004 (continued)	adequate trial of any of the study medications during this psychotic episode, (3) prior dx of PDD or a serious medical or neurological disorder, (4) pregnancy or refusal to practice contraception, (5) imminent risk in current setting to harm self or others	**Diagnostic breakdown (n):** affective disorders (6), schizophrenia spectrum (13) **Treatment naïve (n):** NR **Inpatients (n):** 15 **First episode psychosis (n):** 15	benztropine/trihexyphenidyl (5), buproprion (2), carbamazepine (1), fluoxetine (2), fluvoxamine (1), lithium (1), lorazepam (1), paroxetine (1), propranolol (2), sertraline (1), valproate (1), inpatient or residential treatment (10) **GROUP 3** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** 0.5–3 **Daily dose (mg/day), mean±SD (range):** 4±1.2 (0.5–3) **Concurrent treatments:** amantadine(2), benztropine/ trihexyphenidyl (4), citalopram (1), clomipramine (1), gabapentin with lamotrigine (1), lorazepam(2), propranolol (1), sertraline (2), trazadone (1), valproate (3), inpatient or residential treatment (11)		

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Snyder, 2002{1335} **Country:** Canada, South Africa, USA **Condition category:** DBD **Questions:** KQ1, KQ2, KQ3, KQ4 **Funding:** Foundation **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** Inpatient and outpatient **Diagnostic criteria:** DSM-IV, VABS **Inclusion criteria:** (1) CD, ODD, or DBD–NOS (DSM–IV), (2) parent/ caregiver rating ≥24 on the Conduct Problem subscale of the NCBRF, (3) IQ 36–84 inclusive, (4) VABS score ≤84, (5) healthy on the basis of a pretrial physical examination, medical history, and ECG, (6) consent by parent/ caregiver, (7) 5–12 yr **Exclusion criteria:** (1) PDD, schizophrenia, or other psychotic disorders, (2) head injury as a cause of impaired IQ, (3) seizure condition requiring medication, (4) females who were sexually active without a reliable form of birth control, (5) serious or progressive	**Enrolled:** 110 **Analyzed:** 110 **Completed:** 85 **GROUP 1** **N:** 53 **Age, mean±SD (range):** 8.6±0.3 (5–12) **Males %:** 77.4 **Caucasian %:** 78.8 **Diagnostic breakdown (n):** CD (3), CD/ADHD (16), Combined/No ADHD (9), ODD/ DBD (6), ODD/DBD/ADHD (28) **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (44) **GROUP 2** **N:** 57 **Age, mean±SD (range):** 8.8±0.3 (5–12) **Males %:** 73.7 **Caucasian %:** 73.7 **Diagnostic breakdown (n):** CD (7), CD/ADHD (15), Combined/No ADHD (17), ODD/ DBD (10), ODD/DBD/ADHD (25) **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (40)	**Treatment duration:** 6 wk (11 mo extension) **Run–in phase:** Yes **Run–in phase duration:** 1 wk **Permitted drugs:** stable doses (≥30 days prior to study) of anticholinergics, antihistamines, chloral hydrate, medication for preexisting medical conditions, melatonin, psychostimulants (comorbid ADHD) **Prohibited drugs:** no other medication permitted **GROUP 1** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 1±0.1 SE (0.4–3.8) **Concurrent treatments:** NR **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** NR	**Symptomatology (KQ1):** ABC, BPI, CGI-I, CGI-S, NCBRF, VAS **AE (KQ2):** Anorexia, behavioral issues, Bucco-linguo-masticatory score, BMI, ECG changes, EPS, fatigue, parkinsonism, prolactin, prolactin-related AE, pulse, SAE, somnolence, tardive dyskinesia, total AE, WAE, weight change **Other ST and LT outcomes (KQ3):** Medication adherence **Sub-populations (KQ4):** Comorbidity, co-treatment, treatment history, condition (NCBRF, prolactin, sedation, weight)	Risperidone was adequately tolerated and was effective in treating children with subaverage IQs and severe disruptive behaviors.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Snyder, 2002 (continued)	illness or clinically abnormal laboratory values, (6) history of tardive dyskinesia, NMS, or hypersensitivity to any antipsychotic drug, (7) known presence of HIV, (8) previous treatment with risperidone				

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Spencer, 1994{2353} **Country:** USA **Condition category:** Schizophrenia and related **Questions:** KQ1, KQ2, KQ4 **Funding:** Industry, Government **Risk of bias:** Unclear (subjective), Unclear (objective)	**Recruitment dates:** Sep 1989 to May 1991 **Study design:** RCT (crossover) **Setting:** Inpatient **Diagnostic criteria:** DSM-III-TR, DICA-R **Inclusion criteria:** (1) actively psychotic prepubertal patients, (2) 5–11 yr, (3) admitted to the Bellevue Hospital Children's Inpatient Psychiatric Unit, (4) schizophrenia **Exclusion criteria:** (1) intercurrent systemic illness, (2) seizure disorder, (3) MR below borderline, (4) tardive dyskinesia, (5) infantile autism, (6) receipt of psychoactive medication within 4 wk of double–blind treatment	**Enrolled:** 16 **Analyzed:** 16 **Completed:** 16 **GROUP 1** **N:** 16 (crossover) **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 2** **N:** 16 (crossover) **Age, mean±SD (range):** NR **Males %:** NR **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR	**Treatment duration:** 8 wk **Run–in phase:** Yes **Run–in phase duration:** 2 wk **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Haloperidol **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 2 (0.5–3.5) **Concurrent treatments:** NR **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 2.5±0.5 (0.5–3.5) **Concurrent treatments:** NR	**Symptomatology (KQ1):** BPRS-C, CGI-I, CGI-S, CPRS **AE (KQ2):** Drowsiness, dystonia **Other ST and LT outcomes (KQ3):** NR **Sub-populations (KQ4):** Age, illness duration, IQ (Global clinical judgments rating)	Haloperidol improved the target psychotic symptoms in children with schizophrenia.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Swadi, 2010{2397} **Country:** New Zealand **Condition category:** Psychosis **Questions:** KQ1, KQ2, KQ3 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** Inpatient **Diagnostic criteria:** DSM-IV **Inclusion criteria:** (1) <19 yr, (2) first onset psychotic disorder or a mood disorder with psychotic features **Exclusion criteria:** (1) alcohol or substance dependence not in full remission, (2) prior treatment with atypical antipsychotic drugs	**Enrolled:** 22 **Analyzed:** 22 **Completed:** 22 **GROUP 1** **N:** 11 **Age, mean±SD (range):** NR **Males %:** 54.5 **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** all **First episode psychosis (n):** NR **GROUP 2** **N:** 11 **Age, mean±SD (range):** NR **Males %:** 63.6 **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** all **First episode psychosis (n):** NR	**Treatment duration:** 6 wk **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Quetiapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 607 (100–800) **Concurrent treatments:** anticholinergics (1), cognitive behavioral therapy, family work, activity–based interventions allowed **GROUP 2** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 2.9 (1.5–5) **Concurrent treatments:** anticholinergics (5), cognitive behavioral therapy, family work, activity–based interventions allowed	**Symptomatology (KQ1):** BPRS, PANSS **AE (KQ2):** Blood pressure, EPS, glucose, lipid profile, liver function, prolactin, sedation, weight change **Other ST and LT outcomes (KQ3):** Response (BPRS, CGI-S, HAM-D, PANSS, YMRS) **Sub-populations (KQ4):** NR	Risperidone may be more beneficial than quetiapine for adolescent patients with bipolar disorder.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Tohen, 2007{526} **Country:** Puerto Rico, USA **Condition category:** Bipolar **Questions:** KQ1, KQ2, KQ3, KQ4 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** Nov 2002 to May 2005 **Study design:** RCT (parallel) **Setting:** Inpatient and outpatient **Diagnostic criteria:** DSM-IV-TR, K-SADS-PL **Inclusion criteria:** (1) 12–17 yr, (2) manic or mixed bipolar episodes (with or without psychotic features), (3) inpatient or outpatient, (4) total score ≥20 on the Adolescent Structured YMRS **Exclusion criteria:** (1) prior nonreponse to olanzapine, (2) treatment within the previous 30 day with an experimental medication not available for clinical use, (3) suicide risk, (4) clinically significant abnormal laboratory values at baseline, (5) DSM–IV–TR substance dependence (excluding nicotine and caffeine) within the last 30 days, (6) treatment with long–lasting neuroleptic within 14 day prior to randomization	**Enrolled:** 161 **Analyzed:** 161 **Completed:** 120 **GROUP 1** **N:** 107 **Age, mean±SD (range):** 15.1±1.3 **Males %:** 57 **Caucasian %:** 66.4 **Diagnostic breakdown (n):** mixed (61), psychotic features (22), rapid cycling (25) **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (45), DBD (37) **GROUP 2** **N:** 54 **Age, mean±SD (range):** 15.4±1.2 **Males %:** 44.4 **Caucasian %:** 75.9 **Diagnostic breakdown (n):** mixed (25), psychotic features (7), rapid cycling (5) **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** ADHD (13), DBD (12)	**Treatment duration:** 3 wk (6 mo extension) **Run–in phase:** Yes **Run–in phase duration:** 2–14 day **Permitted drugs:** anticholinergics (2–6mg/day), benzodiazepines/hypnotics (≤2 mg/day lorazepam equivalents for ≤3 consecutive days), psychostimulants (constant dose ≥30 day prior to randomization and through study) **Prohibited drugs:** anticholinergics **GROUP 1** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 8.9 (2.5–20) **Concurrent treatments:** anticholinergics (4.7%), benzodiazepines (12.1%) **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** anticholinergic medication (0), benzodiazepines (7.4%)	**Symptomatology (KQ1):** CDRS, CGI-BP, OAS, YMRS **AE (KQ2):** Bipolar exacerbation, blood cells, blood pressure, BMI, ECG changes, EPS (AIMS, Barnes, SAS), glucose, hepatic enzyme, lipid profile, mortality, prolactin, prolactin-related AE, pulse, SAE, weight change **Other ST and LT outcomes (KQ3):** Response, suicide **Sub-populations (KQ4):** Comorbidities, co-treatment, bipolar subtypes, age of onset, gender (CGI-BP, YMRS, prolactin)	Olanzapine was more effective in treating adolescents with bipolar mania and placebo; however, it resulted in significantly greater weight gain.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Tramontina, 2009{296} **Country:** Brazil **Condition category:** Bipolar with ADHD **Questions:** KQ1, KQ2, KQ3, KQ4 **Funding:** Industry, Government, Hospital **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** Jan 2005 to Nov 2007 **Study design:** RCT (parallel) **Setting:** Outpatient/community **Diagnostic criteria:** DSM-IV, K-SADS-E **Inclusion criteria:** (1) 8–17 yr, (2) DSM IV bipolar I or II disorder comorbid with ADHD, (3) clear reports of ADHD symptom onset preceding any mood symptomology, (4) acutely manic or mixed states (YMRS score ≥20 at baseline visit) **Exclusion criteria:** (1) estimated IQ < 70 (WISC–III), (2) use of any medication 4 wk prior to entering the study, (3) dx of PDD, schizophrenia, or substance abuse or dependence, (4) severe suicide/homicide risk, (5) previous use of aripiprazole, (6) other acute or chronic diseases, (7) pregnancy	**Enrolled:** 43 **Analyzed:** 43 **Completed:** 41 **GROUP 1** **N:** 18 **Age, mean±SD (range):** 11.7±2.7 **Males %:** 33 **Caucasian %:** 83 **Treatment naïve (n):** ND **Inpatients (n):** 0 **First episode psychosis (n):** NR **Comorbidities:** ADHD (all), anxiety disorders (8), DBD (15), psychosis (8), SA (0) **GROUP 2** **N:** 25 **Age, mean±SD (range):** 12.2±2.8 **Males %:** 56 **Caucasian %:** 96 **Treatment naïve (n):** ND **Inpatients (n):** 0 **First episode psychosis (n):** NR **Comorbidities:** ADHD (all), anxiety disorders (13), DBD (20), psychosis (8), SA (0)	**Treatment duration:** 6 wk **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Aripiprazole **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 13.6±5.4 (5–20) **Concurrent treatments:** none **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 15±3.2 (10–20) **Concurrent treatments:** none	**Symptomatology (KQ1):** CDRS, CGI-S, CMRS-P, YMRS **AE (KQ2):** Akathisia, behavioural issues, dermatologic AE, dyskinesia, EPS, fatigue, seizure, somnolence, weight change **Other ST and LT outcomes (KQ3):** Medication adherence, response, suicide **Sub-populations (KQ4):** Age (YMRS, SNAP-IV, weight/BMI)	Aripiprazole was effective in decreasing mania symptoms and improving global functioning without resulting in severe advserse events or weight gain.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Troost, 2005{831} **Country:** Netherlands **Condition category:** PDD **Questions:** KQ1, KQ2, KQ3 **Funding:** Industry, Foundation **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** Inpatient and outpatient **Diagnostic criteria:** DSM-IV-TR, ADI-R **Inclusion criteria:** (1) DSM–IV–TR criteria for PDD, (2) demonstrated clinically significant tantrums, aggression, self–injurious behavior, or a combination of these, (3) 5–17 yr, (4) weight ≥15 kg, (5) mental age ≥18 mo **Exclusion criteria:** (1) children on effective psychotropic drug treatment for disruptive behaviour	**Enrolled:** 24 **Analyzed:** 24 **Completed:** NR **GROUP 1** **N:** 12 **Age, mean±SD (range):** 9.4±3.4 **Males %:** 91.6 **Caucasian %:** 100 **Diagnostic breakdown (n):** Asperger's disorder (1), autistic disorder (3), PDD NOS (8) **Treatment naïve (n):** 11 **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** MR (2) **GROUP 2** **N:** 12 **Age, mean±SD (range):** 8.7±1.2 **Males %:** 91.6 **Caucasian %:** 83 **Diagnostic breakdown (n):** Asperger's disorder (1), autistic disorder (3), PDD NOS (8) **Treatment naïve (n):** all **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** MR (0)	**Treatment duration:** 6 mo **Run–in phase:** Yes **Run–in phase duration:** 1–4 wk **Permitted drugs:** anticonvulsants (stable dose for ≥4 wk and patient seizure–free for ≥6 mo), stimulants (comorbid ADHD) **Prohibited drugs:** psychotropics **GROUP 1** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 1.9±0.7 **Concurrent treatments:** stimulants (1), stimulant and anticonvulsant (1) **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 1.7±0.5 **Concurrent treatments:** stimulants (2)	**Symptomatology (KQ1):** ABC **AE (KQ2):** Dyskinesia **Other ST and LT outcomes (KQ3):** Cognitive (focused attention task), response (relapse) **Sub-populations (KQ4):** NR	Risperidone was effective in reducing disruptive behaviour in about half of children with autism spectrum disorders.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Van Bellinghen, 2001{1726} **Country:** Belgium **Condition category:** Behavioral issues (agitation, aggression, hostility, hyperactivity, or irritability) **Questions:** KQ1, KQ2 **Funding:** Industry **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** Inpatient **Diagnostic criteria:** clinical assessment and parent interview **Inclusion criteria:** (1) 6–18 yr, (2) IQ 45–85, (3) demonstrating persistent behavioral disturbances **Exclusion criteria:** (1) presence of a clinically relevant non–neurologic disease, (2) abnormal laboratory tests, (3) epileptic crisis in the previous 3 mo, (4) participation in a drug trial in the previous 4 wk, (5) remoxipride treatment in the previous 4 wk, (6) oral neuroleptics and other psychotropics in the previous wk, (6) previous treatment with remoxipride combined with abnormal hematologic values, (7) a depot neuroleptic injection within one	**Enrolled:** 13 **Analyzed:** 13 **Completed:** 13 **GROUP 1** **N:** 6 **Age, mean±SD (range):** NR (6–14) **Males %:** 33.3 **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** anxiety (0), depression (0), mania (0), MR (all) **GROUP 2** **N:** 7 **Age, mean±SD (range):** NR (7–14) **Males %:** 42.9 **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **Comorbidities:** anxiety (0), depression (0), mania (0), MR (all)	**Treatment duration:** 4 wk **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** antiepileptics **Prohibited drugs:** NR **GROUP 1** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 1.2 **Concurrent treatments:** valproate (1) **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** NR **Concurrent treatments:** NR	**Symptomatology (KQ1):** ABC, CGI-I, PAC, VAS **AE (KQ2):** Parkinsonism, pulse, somnolence, total AE, weight change **Other ST and LT outcomes (KQ3):** NR **Sub-populations (KQ4):** NR	Risperidone was well tolerated, and there was no difference between risperidone– and placebo–treated groups with respect to the occurrence of extrapyramidal side effects.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Van Bellinghen, 2001 (continued)	treatment cycle of the time of selection, (8) female patients of reproductive age if their contraceptive use was considered inadequate, (9) pregnant or lactating				

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Van Bruggen, 2003{1181} **Country:** Netherlands **Condition category:** Schizophrenia and related psychoses **Questions:** KQ1, KQ2, KQ3 **Funding:** Industry, Government **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** Inpatient **Diagnostic criteria:** DSM-IV **Inclusion criteria:** (1) 16–28 yr, (2) first or second psychotic episode according to DSM–IV criteria of schizophrenia, schizofreniform or schizoaffective disorder, (3) actively symptomatic at study entry (PANSS score of moderate or higher on items for delusions, conceptual disorganization, or hallucinations) **Exclusion criteria:** (1) epilepsy, (2) toxic psychosis or infectious disorder, (3) a primary dx of substance abuse (drugs or alcohol), (4) MR, (5) pregnant or lactating female patients, (6) concomitant use of other antipsychotic agents, (7) treatment with an	**Enrolled:** 44 **Analyzed:** 42 **Completed:** NR **GROUP 1** **N:** 18 **Age, mean±SD (range):** 21.0±2.8 **Males %:** 72 **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** 16 **GROUP 2** **N:** 26 **Age, mean±SD (range):** 20.6±3.0 **Males %:** 85 **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** 22	**Treatment duration:** Olanzapine 9.8 wk, Risperidone 6.7 wk **Run–in phase:** No **Run–in phase duration:** NR **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 15.6±4 (5–30) **Concurrent treatments:** anticholinergics (2), antidepressants (0), benzodiazepines (7), mood stabilizers (0) **GROUP 2** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 4.4±1.5 (1–8) **Concurrent treatments:** anticholinergics (7), antidepressants (4), benzodiazepines (8), mood stabilizers (0)	**Symptomatology (KQ1):** PANSS **AE (KQ2):** Akathisia, parkinsonism, prolactin, prolactin-related AE, sedation, seizure, sexual dysfunction, somnolence, tachycardia, tardive dyskinesia, weight change **Other ST and LT outcomes (KQ3):** Medication adherence, response **Sub-populations (KQ4):** NR	Symptom response was similar in the olanzapine and risperidone groups.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Van Bruggen, 2003 (continued)	injectable depot neuroleptic less than one dosing interval before study entry, (8) narrow–angle glaucoma and known hypersensitivity to olanzapine or risperidone, (9) insufficient knowledge of the Dutch language				

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Woods, 2003{1076} **Country:** Canada, USA **Condition category:** Schizophrenia and related **Questions:** KQ1, KQ2, KQ3, KQ4 **Funding:** Industry, Government **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** Jan 1998 to July 2001 **Study design:** RCT (parallel) **Setting:** Outpatient/community **Diagnostic criteria:** DSM-IV, COPS, Presence of Psychosis Scale **Inclusion criteria:** (1) help–seeking persons responding to advertisements or refered by clinicians, (2) 12–45 yr, (3) prodromal syndromes criteria using the Structured Interview for Prodromal Syndromes, (4) ability to understand and communicate with investigator, (5) informed consent/assent **Exclusion criteria:** (1) past or current DSM–IV psychotic disorder, (2) treatable psychiatric disorder that could account for prodromal symptoms, (3) suicidal or homicidal,	**Enrolled:** 60 **Analyzed:** 59 **Completed:** NR **GROUP 1** **N:** 31 **Age, mean±SD (range):** 18.2±5.5 **Males %:** 67.7 **Caucasian %:** 74.2 **Treatment naïve (n):** 28 **Inpatients (n):** NR **First episode psychosis (n):** all **Comorbidities:** SA (18) **GROUP 2** **N:** 29 **Age, mean±SD (range):** 17.2±4 **Males %:** 62.1 **Caucasian %:** 58.6 **Treatment naïve (n):** 26 **Inpatients (n):** NR **First episode psychosis (n):** all **Comorbidities:** SA (9)	**Treatment duration:** 1 yr (1 yr extension) **Run–in phase:** Yes **Run–in phase duration:** 3–14 day **Permitted drugs:** antidepressants, benztropine mesylate or biperiden (≤6 mg/day), chloral hydrate (max 1000 mg/day), diazepam (max 40 mg/day), lorazepam (max 8 mg/day), nizatidine (300–600 mg/day), propranalol hydrochloride **Prohibited drugs:** psychoactive medications **GROUP 1** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 8±3.1 (5–15) **Concurrent treatments:** anticholinergics (1), benzodiazepines (7), nizatidine (1) **GROUP 2** **Drug name:** Placebo **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 9.3±2.8 (5–15) **Concurrent treatments:** anticholinergics (2), benzodiazepines (2)	**Symptomatology (KQ1):** CGI-S, GAF, PANSS, YMRS **AE (KQ2):** Behavioral issues, blood pressure, EPS (AIMS, Barnes, ASA), glucose, fatigue, lipid profile, pulse, somnolence, WAE, weight change **Other ST and LT outcomes (KQ3):** Cognitive (neurocognitive measures), medication adherence, response **Sub-populations (KQ4):** Age, race, IQ, baseline neuropsychological status (psychosis); History of psychosis and duration of prodromal symptoms (Neurocognitive performance)	The conversion–to–psychosis rate was not significantly different between treatment groups; however, olanzapine might reduce the conversion rate and delay onset of psychosis. Compared to placebo, olanzapine was efficacious for positive prodromal symptoms but induced weight gain.

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Woods, 2003 (continued)	(4) prodromal symptoms primarily sequelae of alcohol or drug use, (5) IQ <80, (6) seizure disorder without a clear or resolved etiology, (7) pregant or lactating, (8) took non–protocol psychotropic medications				

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Wudarsky, 1999{4470} **Country:** USA **Condition category:** Schizophrenia and related **Questions:** KQ2, KQ4 **Funding:** NR **Newcastle-Ottawa Scale:** 7 stars	**Recruitment dates:** NR **Study design:** Prospective cohort **Setting:** Outpatient/community **Diagnostic criteria:** DSM-IV, DSM-III-TR, structured interviews **Inclusion criteria:** (1) DSM dx of schizophrenia, (2) resistant to treatment with two different first–generation antipsychotics **Exclusion criteria:** (1) onset of symptoms at ≥13 yr, (2) neurological or medical disease, (3) premorbid IQ <70	**Enrolled:** 47 **Analyzed:** 35 **Completed:** NR **GROUP 1** **N:** 15 **Age, mean±SD (range):** 13.7±1.5 **Males %:** 60 **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 2** **N:** 22 **Age, mean±SD (range):** 14.7±2.3 **Males %:** 72.7 **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 3** **N:** 10 **Age, mean±SD (range):** 14.2±2.9 **Males %:** 70 **Caucasian %:** NR **Treatment naïve (n):** NR **Inpatients (n):** NR **First episode psychosis (n):** NR	**Treatment duration:** 6 wk **Run–in phase:** Yes **Run–in phase duration:** 3 wk **Permitted drugs:** NR **Prohibited drugs:** NR **GROUP 1** **Drug name:** Haloperidol **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 15.3±8.2 **Concurrent treatments:** NR **GROUP 2** **Drug name:** Clozapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 325.4±211 **Concurrent treatments:** NR **GROUP 3** **Drug name:** Olanzapine **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 17±3.5 **Concurrent treatments:** NR	**Symptomatology (KQ1):** NR **AE (KQ2):** Prolactin **Other ST and LT outcomes (KQ3):** NR **Sub-populations (KQ4):** Gender (prolactin)	Mean prolactin levels were significantly elevated after 6 weeks of treatment with haloperidol, clozapine, and olanzapine in patients with childhood–onset schizophrenia

Study	Study Characteristics	Participant Characteristics	Treatment Characteristics	Outcomes Reported	Author Conclusions
Yen, 2004{15456} **Country:** Taiwan **Condition category:** Schizophrenia and related **Questions:** KQ1 **Funding:** Hospital **Risk of bias:** High (subjective), High (objective)	**Recruitment dates:** NR **Study design:** RCT (parallel) **Setting:** NR **Diagnostic criteria:** DSM-III-TR **Inclusion criteria:** (1) 18–65 yr, (2) total score >60 on PANSS **Exclusion criteria:** (1) psychoses other than schizophrenia, (2) early childhood brain damage, (3) unable to comply with the medication, (4) severe illness, (5) pregnant or lactating women	**Enrolled:** 8 **Analyzed:** 8 **Completed:** 8 **GROUP 1** **N:** 2 **Age, mean±SD (range):** 24.0 (24) **Males %:** 0 **Caucasian %:** NR **Treatment naïve (n):** 0 **Inpatients (n):** NR **First episode psychosis (n):** NR **GROUP 2** **N:** 6 **Age, mean±SD (range):** 20.7 (20–22) **Males %:** 66.7 **Caucasian %:** NR **Treatment naïve (n):** 0 **Inpatients (n):** NR **First episode psychosis (n):** NR	**Treatment duration:** 2.8 mo **Run–in phase:** Yes **Run–in phase duration:** 1–4 wk **Permitted drugs:** biperiden or trihexylphenidyl; lorazepam, oxazepam or temazepam **Prohibited drugs:** NR **GROUP 1** **Drug name:** Haloperidol **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 11.2±6.9 (2–25) **Concurrent treatments:** NR **GROUP 2** **Drug name:** Risperidone **Dosing variability:** variable **Target dose (mg/day):** NR **Daily dose (mg/day), mean±SD (range):** 4.4±2.6 (1–8) **Concurrent treatments:** NR	**Symptomatology (KQ1):** PANSS **AE (KQ2):** NR **Other ST and LT outcomes (KQ3):** NR **Sub-populations (KQ4):** NR	Risperidone was superior to haloperidol in improving negative symptoms and better tolerated during the treatment of schizophrenia.

Appendix F. List of Companion Publications

Main publication	Companion studies
Aman MG, De SG, Derivan A, et al. Double-blind, placebo-controlled study of risperidone for the treatment of disruptive behaviors in children with subaverage intelligence. Am J Psychiatry 2002;159(8):1337-46.	Aman M. Risperidone versus placebo for severe conduct disorder in children with mental retardation. Int J Neuropsychopharmacol 2000;(Suppl 1):S144.
	Aman MG, Findling RL, Derivan AT, et al. Effects of risperidone on the behavior of children with subaverage IQ's and conduct disorder or oppositional defiant disorder. Annual Meeting of the American Psychiatric Association; 2001.
	Biederman J, Mick E, Faraone SV, et al. Risperidone for the treatment of affective symptoms in children with disruptive behavior disorder: a post hoc analysis of data from a 6-week, multicenter, randomized, double-blind, parallel-arm study. Clin Ther 2006;28(5):794-800.
	Findling RL, Aman MG, Eerdekens M, et al. Long-term, open-label study of risperidone in children with severe disruptive behaviors and below-average IQ. Am J Psychiatry 2004;161(4):677-84.
	Findling RL. Effects of risperidone on the behavior of children with subaverage IQ's and conduct disorder or oppositional defiant disorder. 155th Annual Meeting of the American Psychiatric Association 2002 .
	Turgay A. Risperidone in children with disruptive behavior disorder and ADHD [abstract]. 154th Annual Meeting of the American Psychiatric Association; 2001.
Arango C, Robles O, Parellada M, et al. Olanzapine compared to quetiapine in adolescents with a first psychotic episode. Eur Child Adolesc Psychiatry 2009;18(7):418-28.	Robles O, Zabala A, Bombin I, et al. Cognitive Efficacy of Quetiapine and Olanzapine in Early-Onset First-Episode Psychosis. Schizophr Bull 2009.
Buitelaar JK, van der Gaag RJ, Cohen-Kettenis P, et al. A randomized controlled trial of risperidone in the treatment of aggression in hospitalized adolescents with subaverage cognitive abilities. J Clin Psychiatry 2001;62(4):239-48.	Buitelaar JK vdGRMC. Risperidone in the treatment of aggressive behaviour disorders in adolescents with mild mental retardation: a prospective, randomised, double-blind, placebo-controlled trial. 11th European College of Neuropsychopharmacology Congress 1998;Paris,France.
Findling RL, Robb A, Nyilas M, et al. A multiple-center, randomized, double-blind, placebo-controlled study of oral aripiprazole for treatment of adolescents with schizophrenia. Am J Psychiatry 2008;165(11):1432-41.	Robb AS, Carson WH, Nyilas M, et al. Changes in positive and negative syndrome scale-derived hostility factor in adolescents with schizophrenia treated with aripiprazole: post hoc analysis of randomized clinical trial data. J Child Adolesc Psychopharmacol 2010;20(1):33-8.
Findling RL, McNamara NK, Branicky LA, et al. A double-blind pilot study of risperidone in the treatment of conduct disorder. J Am Acad Child Adolesc Psychiatry 2000;39(4):509-16.	Findling RL, Branicky LA, Lemon E, et al. Conduct disorder in children treated with risperidone. 152nd Annual Meeting of the American Psychiatric Association; 1999.
	Findling RL, McNamara NK,Branicky LA, et al. Risperidone in children with conduct disorder conference abstract. Schizophrenia Research. Abstracts of The VIIth International Congress on Schizophrenia Research, Santa Fe New Mexico USA 1999;17-21(279).
	Findling RL. Risperidone in children with conduct disorder. Eur Neuropsychopharmacol 1999;(Suppl 5):S358
	Findling R. Conduct disorder in children treated with risperidone. 37th Annual Meeting of the American College of Neuropsychopharmacology; 1998 Dec 14-18; Las Croabas, Puerto Rico.
Fleischhaker C, Heiser P, Hennighausen K, et al. Clinical drug monitoring in child and adolescent psychiatry: side effects of atypical neuroleptics. J Child Adolesc Psychopharmacol 2006 Jun;16(3):308-16.	Fleischhaker C, Heiser P, Hennighausen K, et al. Weight gain in children and adolescents during 45 weeks treatment with clozapine, olanzapine and risperidone. J Neural Transm 2008 Nov;115(11):1599-608.

Main publication	Companion studies
Fleischhaker et al 2006 (continued)	Fleischhaker C, Heiser P, Hennighausen K, et al. Weight gain associated with clozapine, olanzapine and risperidone in children and adolescents. J Neural Transm 2007 Feb;114(2):273-80.
Haas M, Delbello MP, Pandina G, et al. Risperidone for the treatment of acute mania in children and adolescents with bipolar disorder: a randomized, double-blind, placebo-controlled study. Bipolar Disord 2009;11(7):687-700.	NCT00076115 (Delbello M). Research on the effectiveness of risperidone in bipolar disorder in adolescents and children (REACH): a double-blind, randomized, placebo-controlled study of the efficacy and safety of risperidone for the treatment of acute mania in bipolar I disorder. Johnson & Johnson Pharmaceutical Research 2010.
Hellings JA, Zarcone JR, Reese RM, et al. A crossover study of risperidone in children, adolescents and adults with mental retardation. J Autism Dev Disord 2006;36(3):401-11.	Hellings JA, Zarcone JR, Valdovinos MG, et al. Risperidone-induced prolactin elevation in a prospective study of children, adolescents, and adults with mental retardation and pervasive developmental disorders. J Child Adolesc Psychopharmacol 2005;15(6):885-92.
	Hellings JA, Zarcone JR, Crandall K, et al. Weight gain in a controlled study of risperidone in children, adolescents and adults with mental retardation and autism J Child Adolesc Psychopharmacol 2001;11(3):229-38.
	Zarcone JR, Hellings JA, Crandall K, et al. Effects of risperidone on aberrant behavior of persons with developmental disabilities: a double-blind crossover study using multiple measures. Am J Ment Retard 2001;106(6):525-38.
Kumra S, Kranzler H, Gerbino-Rosen G, et al. Clozapine and "high-dose" olanzapine in refractory early-onset schizophrenia: a 12-week randomized and double-blind comparison. Biol Psychiatry 2008;63(5):524-9.	Kumra S, Kranzler H, Gerbino-Rosen G, et al. Clozapine versus "high-dose" olanzapine in refractory early-onset schizophrenia: an open-label extension study. J Child Adolesc Psychopharmacol 2008;18(4):307-16.
Marcus RN, Owen R, Kamen L, et al. A placebo-controlled, fixed-dose study of aripiprazole in children and adolescents with irritability associated with autistic disorder. J Am Acad Child Adolesc Psychiatry 2009 Nov;48(11):1110-9.	Owen R, Sikich L, Marcus RN, et al. Aripiprazole in the treatment of irritability in children and adolescents with autistic disorder. Pediatrics 2009;124(6):1533-40.
Miral S, Gencer O, Inal-Emiroglu FN, et al. Risperidone versus haloperidol in children and adolescents with AD : a randomized, controlled, double-blind trial. Eur Child Adolesc Psychiatry 2008;17(1):1-8.	Gencer O, Emiroglu FN, Miral S, et al. Comparison of long-term efficacy and safety of risperidone and haloperidol in children and adolescents with autistic disorder. An open label maintenance study. Eur Child Adolesc Psychiatry 2008;17(4):217-25.
Ratzoni G, Gothelf D, Brand-Gothelf A, et al. Weight gain associated with olanzapine and risperidone in adolescent patients: a comparative prospective study. Journal of the J Am Acad Child Adolesc Psychiatry 2002 Mar;41(3):337-43.	Gothelf D, Apter A, Reidman J, et al. Olanzapine, risperidone and haloperidol in the treatment of adolescent patients with schizophrenia. J Neural Transm 2003;110(5):545-60.
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	Anderson GM, Scahill L, McCracken JT, et al. Effects of short- and long-term risperidone treatment on prolactin levels in children with autism. Biol Psychiatry 2007;61(4):545-50.
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	Martin A, Scahill L, Anderson GM, et al. Weight and leptin changes among risperidone-treated youths with autism: 6-month prospective data. Am J Psychiatry 2004;161(6):1125-7.
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	Scahill L, McCracken J, McDougle CJ, et al. Methodological issues in designing a multisite trial of risperidone in children and adolescents with autism. J Child Adolesc Psychopharmacol 2001;11(4):377-88.
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Sikich L, Frazier JA, McClellan J, et al. Double-blind comparison of first- and second-generation antipsychotics in early-onset schizophrenia and schizo-affective disorder: findings from the treatment of early-onset schizophrenia spectrum disorders (TEOSS) study. Am J Psychiatry 2008;165(11):1420-31.	Findling RL, Johnson JL, McClellan J, et al. Double-blind maintenance safety and effectiveness findings from the Treatment of Early-Onset Schizophrenia Spectrum (TEOSS) Study. J Am Acad Child Adolesc Psychiatry 2010;49(6):583-94.
	Frazier JA, McClellan J, Findling RL, et al. Treatment of early-onset schizophrenia spectrum disorders (TEOSS): demographic and clinical characteristics. J Am Acad Child Adolesc Psychiatry 2007;46(8):979-88.
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Shea S, Turgay A, Carroll A, et al. Risperidone in the treatment of disruptive behavioral symptoms in children with autistic and other pervasive developmental disorders. Pediatrics 2004;114(5):e634-41.	Pandina GJ, Bossie CA, Youssef E, et al. Risperidone improves behavioral symptoms in children with autism in a randomized, double-blind, placebo-controlled trial. J Autism Dev Disord 2007;37(2):367-73.
Snyder R, Turgay A, Aman M, et al. Effects of risperidone on conduct and disruptive behavior disorders in children with subaverage IQs. J Am Acad Child Adolesc Psychiatry 2002;41(9):1026-36.	Turgay A, Binder C, Snyder R, et al. Long-term safety and efficacy of risperidone for the treatment of disruptive behavior disorders in children with subaverage IQs. Pediatrics 2002;110(3):e34.
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Troost PW, Lahuis BE, Steenhuis MP, et al. Long-term effects of risperidone in children with autism spectrum disorders: a placebo discontinuation study. J Am Acad Child Adolesc Psychiatry 2005;44(11):1137-44.	Troost PW, Althaus M, Lahuis BE, et al. Neuropsychological effects of risperidone in children with pervasive developmental disorders: a blinded discontinuation study. J Child Adolesc Psychopharmacol 2006;16(5):561-73.
Van BJ, Tijssen J, Dingemans P, et al. Symptom response and side-effects of olanzapine and risperidone in young adults with recent onset schizophrenia. Int Clin Psychopharmacol 2003;18(6):341-6.	Lavalaye J, Linszen DH, Booij J, et al. Dopamine D2 receptor occupancy by olanzapine or risperidone in young patients with schizophrenia. Psychiatry Res 1999 Nov;92(1):33-44.
Woods SW, Breier A, Zipursky RB, et al. Randomized trial of olanzapine versus placebo in the symptomatic acute treatment of the schizophrenic prodrome. Biol Psychiatry 2003;54(4):453-64.	Hawkins KA, Keefe RS, Christensen BK, et al. Neuropsychological course in the prodrome and first episode of psychosis: findings from the PRIME North America Double Blind Treatment Study. Schizophr Res 2008;105(1-3):1-9.
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	McGlashan TH, Zipursky RB, Perkins D, et al. The PRIME North America randomized double-blind clinical trial of olanzapine versus placebo in patients at risk of being prodromally symptomatic for psychosis: study rationale and design. Schizophr Res 2003;61(1):7-18.
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Appendix G. List of Excluded Studies and Unobtained Studies

One thousand and four studies were excluded. The reasons for exclusion are as follows: (1) the study population were above 24 years of age (n=748), (2) the study was not primary research (n=89), (3) inappropriate study design (n=70), (4) the study intervention did not meet our criteria (n=41), (5) there were no outcome of interest reported (n=19), (6) the study population did not have the condition/diagnosis of interest (n=18), (7) the article was a duplicate publication (n=9), (8) the study was not published in English (n=7), (9) the study was published before 1987 (n=3). In addition, 38 studies could not be retrieved through the univeristy interlibrary loan service.

Excluded – Age > 24 (N = 748)

The following studies were excluded because the participants were above 24 years of age.

1. How do different atypical antipsychotics impact cognitive function in schizophrenia? Brown Univ Psychopharmacol Update 2005;16(2):1.

2. Abraham G, Paing WW, Kaminski J, et al. Effects of elevated serum prolactin on bone mineral density and bone metabolism in female patients with schizophrenia: a prospective study. Am J Psychiatry 2003;160(9):1618-20.

3. Addington DE, Labelle A, Kulkarni J, et al. A comparison of ziprasidone and risperidone in the long-term treatment of schizophrenia: a 44-week, double-blind, continuation study. Can J Psychiatr Rev Canad Psychiatr 2009;54(1):46-54.

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5. Adler LE, Olincy A, Cawthra EM, et al. Varied effects of atypical neuroleptics on P50 auditory gating in schizophrenia patients. Am J Psychiatry 2004;161(10):1822-8.

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17. Alptekin K, Hafez J, Brook S, et al. Efficacy and tolerability of switching to ziprasidone from olanzapine, risperidone or haloperidol: an international, multicenter study. Int Clin Psychopharmacol 2009;24(5):229-38.

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Excluded – Not primary research (N = 89)

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Excluded – Ineligible study design (N = 70)

The following studies were excluded because the study design did not meet the eligibility criteria.

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Excluded – Not intervention of interest (N = 41)

The following studies were excluded because they did not examine an intervention of interest for this review.

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Excluded – No outcome of interest (N = 19)

The following studies were excluded because they did not report any outcome of interest for this review.

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3. Delbello M. CHQ and CGAS in an open-label study of ziprasidone in pediatric patients with bipolar disorder, schizophrenia, or schizoaffective disorder. 46th Annual NCDEU (New Clinical Drug Evaluation Unit) Meeting; 2006;2006-15.

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Excluded – Not diagnosis of interest (N = 18)

The following studies were excluded because the participants did not have the condition (diagnosis) of interest for this review.

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3. Flanders SC, Findling RL, Youngstrom EA, et al. Observed clinical and health services outcomes in pediatric inpatients treated with atypical antipsychotics: 1999-2003. J Child Adolesc Psychopharmacol 2007 Jun;17(3):312-27.

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Excluded – Duplicates (N = 9)

The following articles were excluded because they were duplicates.

1. Chiu CC, Chen KP, Liu HC, et al. The early effect of olanzapine and risperidone on insulin secretion in atypical-naive schizophrenic patients. J Clin Psychopharmacol 2006;26(5):504-7.

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Excluded – Non-English (N = 7)

The following studies were excluded because they were published in a language other than English.

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Excluded – Published before 1987 (N = 3)

The following studies were excluded because they were published before 1987.

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3. Klein RG. Thioridazine effects on the cognitive performance of children with attention-deficit hyperactivity disorder. J Child Adolesc Psychopharmacol 1990;1(4):263-70.[3]

[1] The primary study was published in 1984.
[2] Data of this study was collected in 1976.
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Unobtained Studies (N = 38)

The following articles could not be obtained through the university interlibrary loan system

1. Assessment of therapeutic efficacy versus sedation with antipsychotic agents. J Clin Psychiatry 1996;57(6):1-12.

2. Allan ER, Sison CE, Alpert M, et al. The relationship between negative symptoms of schizophrenia and extrapyramidal side effects with haloperidol and olanzapine. Psychopharmacol Bull 1998;34(1):71-4.

3. Barzega G, Bogetto F, Maina G, et al. Quetiapine in schizophrenic patients: a high- and low-dose double-blind comparison. Eur J Psychiatr 2000;14(4):221-32.

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25. Rapoport J. The spectrum of extrapyramidal symptoms in children and young adults conference abstract. 150th Annual Meeting of the American Psychiatric Association 1111;San:Diego-22.

26. Reich DB WSH. Risperidone treatment of PTSD related to childhood abuse. 157th Annual Meeting of the American Psychiatric Association; 2004;2004-6.

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29. Sikich L. A double blind comparison of typical versus atypical antipsychotic agents on selected neurocognitive functions in children and adolescents with psychotic disorders [abstract]. Schizophr Res 2001;(1-2 Suppl):245.

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Appendix H. Grading the Strength of Evidence Tables

Table 1. Strength of evidence for pervasive developmental disorders

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
FGA vs. SGA*	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	2; 40	Autistic symptoms	RCTs / HRoB = Moderate	Consistent	Direct	Not pooled	Low
	2; 40	Clinical impressions	RCTs / HRoB = Moderate	Inconsistent	Direct	Not pooled	Insufficient
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	0	Medication adherence	—	—	—	—	Insufficient (no data)
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	0	Suicide	—	—	—	—	Insufficient (no data)
Continuous haloperidol vs. discontinuous haloperidol	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	0	Autistic symptoms	—	—	—	—	Insufficient (no data)
	1; 70	Clinical impressions	RCT / HRoB = Moderate	Unknown	Direct	Imprecise, NR	Insufficient
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	0	Medication adherence	—	—	—	—	Insufficient (no data)
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	0	Suicide	—	—	—	—	Insufficient (no data)

ABC = Aberrant Behavior Checklist; CARS = Childhood Autism Rating Scale; CGI–I = Clinical Global Impressions–Improvement; CYBOCS = Children's Yale Brown Obsessive Compulsive Scale; FGA = first generation antipsychotic; HRoB = high risk of bias on the Cochrane Risk of Bias Tool; HRQL = health-related quality of life; N = number; NR = not reported; NSD = no significant difference between groups; RCT = randomized controlled trial; SGA = second generation antipsychotic; URoB = unclear risk of bias on the Cochrane Risk of Bias Tool

* Comparisons include haloperidol vs. olanzapine and haloperidol versus risperidone

† SGAs include aripiprazole (one study), olanzapine (one study), and risperidone (five studies).

Table 1. Strength of evidence for pervasive developmental disorders (continued)

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
Low-dose vs. medium-dose vs. high-dose aripiprazole	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	1; 218	Autistic symptoms	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	1; 218	Clinical impressions	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	1; 218	Obsessive compulsive	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	1; 218	Medication adherence	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	1; 218	Suicide	RCT / HRoB = Moderate	Unknown	Indirect	Imprecise (NSD)	Insufficient
Risperidone vs. other SGA	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	0	Autistic symptoms	—	—	—	—	Insufficient (no data)
	0	Clinical impressions	—	—	—	—	Insufficient (no data)
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	0	Medication adherence	—	—	—	—	Insufficient (no data)
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	0	Suicide	—	—	—	—	Insufficient (no data)
SGA vs. placebo†	0	Aggression	—	—	—	—	Insufficient (no data)
	1; 80	Anxiety	RCT / HRoB = Moderate	Unknown	Direct	Imprecise, NR	Insufficient
	6; 487	Autistic symptoms	RCTs / HRoB, URoB = Moderate	Consistent	Direct	Precise ABC: -18.3 (-27.1, -9.5); CARS: -4.9 (-8.5, -1.4)	Low

Table 1. Strength of evidence for pervasive developmental disorders (continued)

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
SGA vs. placebo (continued)	3; 330	Clinical impressions	RCTs / HRoB = Moderate	Consistent	Direct	Imprecise CGI-I: -1.2 (-2.5, 0.06)	Low
	3; 330	Obsessive compulsive	RCTs / HRoB, URoB = Moderate	Inconsistent	Direct	Precise CYBOCS: -1.7 (-3.2, -0.3)	Low
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	2; 319	Medication adherence	RCT / HRoB, URoB = Moderate	Consistent	Direct	Imprecise (NSD)	Low
	1; 101	Patient/parent-reported outcomes: sleep, food frequency	RCT / URoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	1; 218	Suicide	RCT / HRoB = Moderate	Unknown	Indirect	Precise 0.04 (0.0, 0.8)	Insufficient

Table 2. Strength of evidence for ADHD and disruptive behavior disorders

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
SGA vs. placebo*	5; 302	Aggression	RCTs / HRoB = Moderate	Consistent	Direct	Imprecise OAS (2 studies): -15.8 (-51.6, 19.9)	Low
	4; 580	Anxiety	RCTs / HRoB = Moderate	Inconsistent	Direct	Not pooled	Low
	7; 669	Behavior symptoms	RCTs / HRoB = Moderate	Consistent	Direct	Precise ABC (4 studies): -20.97 (-31.1, -10.8); BPI (2 studies): -3.8 (-6.2, -1.4); NCBRF (4 studies): -6.9 (-10.4, -3.5)	Moderate
	7; 662	Clinical impressions	RCTs / HRoB = Moderate	Consistent	Direct	Precise CGI-I: -0.95 (-1.7, -0.3); CGI-S: -1.3 (-2.2, -0.5)	Moderate
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	1; 19	HRQL	RCT / HRoB = Moderate	Unknown	Direct	Precise 15.4 (7.1, 23.7)	Insufficient
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	5; 311	Medication adherence	RCTs / HRoB = Moderate	Inconsistent	Direct	Imprecise 1.4 (0.4, 5.8)	Low
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	0	Suicide	—	—	—	—	Insufficient (no data)

ABC = Aberrant Behavior Scale; BPI = Behavior Problem Inventory; CGI-I = Clinical Global Impressions–Improvement; CGI-S = Clinical Global Impressions–Severity; HRoB = high risk of bias on the Cochrane Risk of Bias Tool; HRQL = health-related quality of life; N = number; NCBRF = Nisonger Child Behavior Rating Form; NR = not reported; NSD = no significant difference between groups; OAS = Overt Aggression Scale; RCT = randomized controlled trial; SGA = second generation antipsychotic

* SGAs include quetiapine{Connor, 2008 237 /id} in and risperidone.{Aman, 2009 447 /id} {Aman, 2002 1017 /id} {Armenteros JL, 2007 5152 /id} {Buitelaar, 2001 1776 /id} {Findling, 2000 1849 /id} {Reyes, 2006 524 /id} {Snyder, 2002 1335 /id}

Table 3. Strength of evidence for bipolar disorder

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
Olanzapine vs. risperidone	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Clinical impressions	—	—	—	—	Insufficient (no data)
	1; 31	Depression	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	1; 31	Manic symptoms	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	0	Positive and negative symptoms	—	—	—	—	Insufficient (no data)
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	0	Medication adherence	—	—	—	—	Insufficient (no data)
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	0	Suicide	—	—	—	—	Insufficient (no data)
Low-dose aripiprazole vs. high-dose aripiprazole	0	Aggression	—	—	—	—	Insufficient (no data)
	1; 296	Clinical impressions	RCT / HRoB = Moderate	Unknown	Direct	Imprecise, NR	Insufficient
	1; 296	Depression	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	1; 296	Manic symptoms	RCT / HRoB = Moderate	Unknown	Direct	Imprecise, NR	Insufficient
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	0	Positive and negative symptoms	—	—	—	—	Insufficient (no data)
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	0	Medication adherence	—	—	—	—	Insufficient (no data)
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	1; 296	Suicide	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient

HRoB = high risk of bias on the Cochrane Risk of Bias Tool; HRQL = health-related quality of life; N = number; NR = not reported; NSD = no significant difference between groups; RCT = randomized controlled trial; SGA = second generation antipsychotic

* SGAs include aripiprazole,{Findling, 2009 286 /id}{Tramontina, 2009 296 /id} olanzapine,{Tohen, 2007 526 /id} quetiapine,{Delbello, 2009 67 /id}{Delbello, 2002 1334 /id} risperidone,{Haas, 2009 66 /id} and ziprasidone.{NCT00257166, 2008 20031 /id}

Table 3. Strength of evidence for bipolar disorder (continued)

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
Low-dose risperidone vs. high-dose risperidone	0	Aggression	—	—	—	—	Insufficient (no data)
	1; 169	Clinical impressions	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Depression	—	—	—	—	Insufficient (no data)
	1; 169	Manic symptoms	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	0	Positive and negative symptoms	—	—	—	—	Insufficient (no data)
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	1; 169	Medication adherence	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	1; 169	Suicide	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
Low-dose ziprasidone vs. high-dose ziprasidone	0	Aggression	—	—	—	—	Insufficient (no data)
	1; 46	Clinical impressions	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Depression	—	—	—	—	Insufficient (no data)
	1; 46	Manic symptoms	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	0	Positive and negative symptoms	—	—	—	—	Insufficient (no data)
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	0	Medication adherence	—	—	—	—	Insufficient (no data)
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	1; 63	Suicide	RCT / HRoB = Moderate	Unknown	Indirect	Imprecise (NSD)	Insufficient

Table 3. Strength of evidence for bipolar disorder (continued)

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
SGA* vs. placebo	1; 161	Aggression	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	5; 701	Clinical impressions	RCTs / HRoB = Moderate	Consistent	Direct	Precise -0.7 (-0.9, -0.5)	Moderate
	4; 532	Depression	RCTs / HRoB = Moderate	Inconsistent	Direct	Imprecise -1.2 (-3.0, 0.7)	Low
	7; 968	Manic symptoms	RCTs / HRoB = Moderate	Inconsistent	Direct	Not pooled	Low
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	0	Positive and negative symptoms	—	—	—	—	Insufficient (no data)
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	2; 73	Medication adherence	RCTs / HRoB = Moderate	Consistent	Direct	Imprecise 2.0 (1.0, 4.0)	Low
	1; 161	Patient/parent-reported outcomes: Switch to depression	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	6; 968	Suicide	RCTs / HRoB = Moderate	Consistent	Direct	Imprecise Completed: NR; Attempts: 1.5 (0.3, 6.8); Ideation: 1.6 (0.6, 4.2)	Moderate

Table 4. Strength of evidence for schizophrenia

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
FGA vs. SGA*	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	2; 45	Clinical impressions	RCTs / HRoB = Moderate	Consistent	Direct	Imprecise -0.86 (-1.6, -0.08)	Low
	0	Depression	—	—	—	—	Insufficient (no data)
	0	Manic symptoms	—	—	—	—	Insufficient (no data)
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	4; 103	Positive and negative symptoms	RCTs / HRoB and PCS / Low quality = Moderate	Inconsistent	Direct	Imprecise PANSS: -9.9 (-33.9, 14.1)	Low
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	1; 24	HRQL	RCTs / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	2; 74	Medication adherence	RCT / HRoB and PCS / Low quality = Moderate	Consistent	Direct	Imprecise (NSD)	Low
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	0	Suicide	—	—	—	—	Insufficient (no data)
Clozapine vs. olanzapine	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	2; 65	Clinical impressions	RCTs / HRoB, URoB = Moderate	Consistent	Direct	Imprecise -0.5 (-1.0, 0.08)	Low
	0	Depression	—	—	—	—	Insufficient (no data)
	0	Manic symptoms	—	—	—	—	Insufficient (no data)
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)

FGA = first generation antipsychotics; HRoB = high risk of bias on the Cochrane Risk of Bias Tool; HRQL = health-related quality of life; N = number; NR = not reported; NSD = no significant difference between groups; PANSS = Positive and Negative Syndrome Scale; PCS = prospective cohort studies; RCT = randomized controlled trial; SGA = second generation antipsychotic; URoB = unclear risk of bias on the Cochrane Risk of Bias Tool

* FGA vs. SGA comparisons include: haloperidol with olanzapine{Malone, 2001 1853 /id} and haloperidol with risperidone.{Miral, 2008 157 /id}

† SGAs included aripiprazole,{Findling, 2008 17 /id} olanzapine,{Kryzhanovskaya, 2009 351 /id}{Woods, 2003 1076 /id} paliperidone,{NCT00518323 (Robb), 2009 20033 /id} quetiapine,{NCT00090324, 2008 20035 /id} and ziprasidone.{NCT00257192, 2010 20032 /id}

Table 4. Strength of evidence for schizophrenia (continued)

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
Clozapine vs. olanzapine (continued)	3; 88	Positive and negative symptoms	RCTs / HRoB, URoB and PCS / High quality = Moderate	Consistent	Direct	Imprecise -5.1 (-15.5, 5.4)	Low
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	0	Medication adherence	—	—	—	—	Insufficient (no data)
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	0	Suicide	—	—	—	—	Insufficient (no data)
Olanzapine vs. quetiapine	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	1; 30	Clinical impressions	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Depression	—	—	—	—	Insufficient (no data)
	0	Manic symptoms	—	—	—	—	Insufficient (no data)
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	0	Positive and negative symptoms	—	—	—	—	Insufficient (no data)
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	1; 30	Medication adherence	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	0	Suicide	—	—	—	—	Insufficient (no data)
Olanzapine vs. risperidone	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	2; 108	Clinical impressions	RCTs / HRoB, URoB = Moderate	Consistent	Direct	Not pooled	Low
	0	Depression	—	—	—	—	Insufficient (no data)
	0	Manic symptoms	—	—	—	—	Insufficient (no data)

Table 4. Strength of evidence for schizophrenia (continued)

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
Olanzapine vs. risperidone (continued)	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	4; 197	Positive and negative symptoms	RCTs / HRoB, URoB and PCS / Low quality = Moderate	Consistent	Direct	Imprecise -2.2 (-8.7, 4.2)	Low
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	4; 202	Medication adherence	RCTs / HRoB, URoB and PCS / Low quality = Moderate	Consistent	Direct	Imprecise (NSD)	Low
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	1; 78	Suicide	RCTs / URoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
Low-dose aripiprazole vs. high-dose aripiprazole	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	1; 302	Clinical impressions	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Depression	—	—	—	—	Insufficient (no data)
	0	Manic symptoms	—	—	—	—	Insufficient (no data)
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	1; 302	Positive and negative symptoms	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	1; 302	HRQL	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	0	Medication adherence	—	—	—	—	Insufficient (no data)
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	1; 302	Suicide	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient

Table 4. Strength of evidence for schizophrenia (continued)

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
Low-dose paliperidone vs. high-dose paliperidone	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	1; 201	Clinical impressions	RCT / HRoB = Moderate	Unknown	Direct	Precise, NR	Insufficient
	0	Manic symptoms	—	—	—	—	Insufficient (no data)
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	1; 201	Positive and negative symptoms	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	0	Medication adherence	—	—	—	—	Insufficient (no data)
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	1; 201	Suicide	RCT / HRoB = Moderate	Unknown	Indirect	Imprecise (NSD)	Insufficient
Low-dose quetiapine vs. high-dose quetiapine	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	1; 222	Clinical impressions	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Depression	—	—	—	—	Insufficient (no data)
	0	Manic symptoms	—	—	—	—	Insufficient (no data)
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	1; 222	Positive and negative symptoms	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	0	Medication adherence	—	—	—	—	Insufficient (no data)
	1; 222	Patient/parent-reported outcomes	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Suicide	—	—	—	—	Insufficient (no data)
Low-dose risperidone vs. high-dose risperidone	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	1; 257	Clinical impressions	RCT / HRoB = Moderate	Unknown	Direct	Precise 0.6 (0.3, 0.9)	Low
	0	Depression	—	—	—	—	Insufficient (no data)

Table 4. Strength of evidence for schizophrenia (continued)

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
	0	Manic symptoms	—	—	—	—	Insufficient (no data)
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	1; 257	Positive and negative symptoms	RCT / HRoB = Moderate	Unknown	Direct	Precise 11.1 (5.8, 16.4)	Low
Low-dose risperidone vs. high-dose risperidone (continued)	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	1; 257	Medication adherence	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	1; 257	Suicide	RCT / HRoB = Moderate	Unknown	Indirect	Imprecise (NSD)	Insufficient
Low-dose ziprasidone vs. high-dose ziprasidone	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	1; 17	Clinical impressions	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Depression	—	—	—	—	Insufficient (no data)
	0	Manic symptoms	—	—	—	—	Insufficient (no data)
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	0	Positive and negative symptoms	—	—	—	—	Insufficient (no data)
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	0	Medication adherence	—	—	—	—	Insufficient (no data)
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	1; 17	Suicide	RCT / HRoB = Moderate	Unknown	Indirect	Imprecise (NSD)	Insufficient
Haloperidol vs. placebo	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	1; 32	Clinical impressions	RCT / URoB = Moderate	Unknown	Direct	Imprecise, NR	Insufficient
	0	Depression	—	—	—	—	Insufficient (no data)
	0	Manic symptoms	—	—	—	—	Insufficient (no data)
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)

Table 4. Strength of evidence for schizophrenia (continued)

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
Haloperidol vs. placebo (continued)	1; 32	Positive and negative symptoms	RCT / URoB = Moderate	Unknown	Direct	Imprecise, NR	Insufficient
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	0	Medication adherence	—	—	—	—	Insufficient (no data)
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	0	Suicide	—	—	—	—	Insufficient (no data)
SGA vs. placebo†	1; 107	Aggression	RCT / HRoB = Moderate	Unknown	Direct	Imprecise, NR	Insufficient
	0	Anxiety	—	—	—	—	Insufficient (no data)
	5; 892	Clinical impressions	RCTs / HRoB = Moderate	Consistent	Direct	Precise -0.4 (-0.6, -0.3)	Moderate
	0	Depression	—	—	—	—	Insufficient (no data)
	1; 60	Manic symptoms	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	5; 910	Positive and negative symptoms	RCTs / HRoB = Moderate	Consistent	Direct	Precise -7.0 (-9.7, -4.3)	Moderate
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	1; 302	HRQL	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	2; 167	Medication adherence	RCTs / HRoB = Moderate	Consistent	Direct	Imprecise (NSD)	Low
	1; 222	Patient/parent-reported outcomes: Caregiver strain	RCT / HRoB = Moderate	Unknown	Direct	Precise, NR	Insufficient
	4; 886	Suicide	RCTs / HRoB = Moderate	Consistent	Indirect	Precise, NR	Low

Table 5. Strength of evidence for psychosis

Technique	Number of studies; subjects	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
FGA vs. SGA*	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	1; 50	Clinical impressions	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Depression	—	—	—	—	Insufficient (no data)
	0	Manic symptoms	—	—	—	—	Insufficient (no data)
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	0	Positive and negative symptoms	—	—	—	—	Insufficient (no data)
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	1; 50	Medication adherence	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	0	Suicide	—	—	—	—	Insufficient (no data)
Olanzapine vs. quettiapine	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	1; 50	Clinical impressions	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Depression	—	—	—	—	Insufficient (no data)
	1; 50	Manic symptoms	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	1; 50	Positive and negative symptoms	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	1; 50	Medication adherence	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	0	Suicide	—	—	—	—	Insufficient (no data)

FGA = first generation antipsychotics; HRoB = high risk of bias on the Cochrane Risk of Bias Tool; HRQL = health-related quality of life; N = number; NR = not reported; NSD = no significant difference between groups; RCT = randomized controlled trial; SGA = second generation antipsychotic

* FGA vs. SGA comparison included haloperidol vs. olanzapine and haloperidole vs. risperidone in one study{ Sikich, 2004 1377 /id}

Table 6. Strength of evidence for psychosis

Technique	Number of studies; subjects	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
Olanzapine vs. risperidone	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	1; 50	Clinical impressions	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Depression	—	—	—	—	Insufficient (no data)
	0	Manic symptoms	—	—	—	—	Insufficient (no data)
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	0	Positive and negative symptoms	—	—	—	—	Insufficient (no data)
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	1; 50	Medication adherence	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	0	Suicide	—	—	—	—	Insufficient (no data)
Quetiapine vs. risperidone	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	0	Clinical impressions	—	—	—	—	Insufficient (no data)
	0	Depression	—	—	—	—	Insufficient (no data)
	0	Manic symptoms	—	—	—	—	Insufficient (no data)
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	1; 22	Positive and negative symptoms	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	0	Medication adherence	—	—	—	—	Insufficient (no data)
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	0	Suicide	—	—	—	—	Insufficient (no data)
Low-dose quetiapine vs. high-dose quetiapine	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	1; 141	Clinical impressions	RCT / HRoB = Moderate	Unknown	Direct	Imprecise, NR	Insufficient
	0	Depression	—	—	—	—	Insufficient (no data)

Table 7. Strength of evidence for psychosis

Technique	Number of studies; subjects	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
	1; 141	Manic symptoms	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	1; 141	Positive and negative symptoms	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	1; 141	Social/occupational functioning	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	HRQL	—	—	—	—	Insufficient (no data)
	1; 141	Legal interactions	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	1; 141	Medication adherence	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	1; 141	Suicide	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient

Table 8. Strength of evidence for Tourette syndrome

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
Pimozide vs. rispderidone{1348}	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	1; 19	Clinical impressions	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	1; 19	Tics	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	0	Medication adherence	—	—	—	—	Insufficient (no data)
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	0	Suicide	—	—	—	—	Insufficient (no data)
Haloperidol vs. pimozide{1530}{2019}	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	1; 22	Clinical impressions	RCT / URoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	1; 41	Social/occupational functioning	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Tics	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	1; 22	Medication adherence	RCT / URoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	0	Suicide	—	—	—	—	Insufficient (no data)
Short-term pimozide vs. long-term pimozide{6881}	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	0	Clinical impressions	—	—	—	—	Insufficient (no data)
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)

FGA = first generation antipsychotic; HRoB = high risk of bias on the Cochrane Risk of Bias Tool; HRQL = health-related quality of life; N = number; NR = not reported; NSD = no significant difference between groups; RCT = randomized controlled trial; SGA = second generation antipsychotic; URoB = unclear risk of bias

* FGAs include haloperidol and pimozide

† SGAs include risperidone{Scahill, 2003 1363 /id} and ziprasidone{Sallee, 2000 1850 /id}

Table 8. Strength of evidence for Tourette syndrome (continued)

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
	0	Tics	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	0	Medication adherence	—	—	—	—	Insufficient (no data)
	1; 10	Patient/parent-reported outcomes	RCT / HRoB = Moderate	Unknown	Direct	Imprecise, NR	Insufficient
	0	Suicide	—	—	—	—	Insufficient (no data)
FGA* vs. placebo{1530}	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	1; 22	Clinical impressions	RCT / URoB = Moderate	Unknown	Direct	Precise -1.5 (-2.1, -0.9)	Insufficient
	0	Obsessive compulsive	—	—	—	—	Insufficient (no data)
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	0	Tics	—	—	—	—	Insufficient (no data)
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	1; 22	Medication adherence	RCT / URoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	0	Suicide	—	—	—	—	Insufficient (no data)
SGA† vs. placebo{1850}{1363}	0	Aggression	—	—	—	—	Insufficient (no data)
	0	Anxiety	—	—	—	—	Insufficient (no data)
	2; 54	Clinical impressions	RCTs / HRoB = Moderate	Inconsistent	Direct	Not pooled	Insufficient
	1; 27	Obsessive compulsive	RCT / HRoB = Moderate	Unknown	Direct	Precise -5.8 (-9.0, -2.6)	Insufficient
	0	Social/occupational functioning	—	—	—	—	Insufficient (no data)
	2; 54	Tics	RCTs / HRoB = Moderate	Consistent	Direct	Precise -6.98 (-10.3, -3.6)	Moderate
	0	HRQL	—	—	—	—	Insufficient (no data)
	0	Legal interactions	—	—	—	—	Insufficient (no data)
	0	Medication adherence	—	—	—	—	Insufficient (no data)
	0	Patient/parent-reported outcomes	—	—	—	—	Insufficient (no data)
	0	Suicide	—	—	—	—	Insufficient (no data)

Table 9. Strength of evidence for adverse events

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
FGAs vs. clozapine	0	Dyslipidemia	—	—	—	—	Insufficient (no data)
	0	EPS	—	—	—	—	Insufficient (no data)
	0	Insulin resistance	—	—	—	—	Insufficient (no data)
	1; 40	Prolactin-related / sexual AE	NRCT / HRoB = Moderate	Unknown	Direct	Precise 15.5 (8.0, 23.0)	Insufficient
	0	Sedation	—	—	—	—	Insufficient (no data)
	0	Weight	—	—	—	—	Insufficient (no data)
Haloperidol vs. clozapine	0	Dyslipidemia	—	—	—	—	Insufficient (no data)
	1; 21	EPS	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Insulin resistance	—	—	—	—	Insufficient (no data)
	1; 47	Prolactin-related / sexual AE	PCS / High quality = Moderate	Unknown	Direct	Precise 36.6 (17.5, 55.7)	Insufficient
	1; 21	Sedation	RCT / HRoB = Moderate	Unknown	Indirect	Precise 0.30 (0.1, 0.8)	Insufficient
	1; 21	Weight	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
Haloperidol vs. olanzapine	1; 50	Dyslipidemia	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	3; 62	EPS	RCTs / HRoB = Moderate PCS / Low quality = Low	Inconsistent	Direct	Precise EPS: 3.53 (1.14, 10.93) EPS (SAS): 3.3 (0.29, 6.31)	Low
	1; 50	Insulin resistance	RCT / HRoB = Moderate	Unknown	Direct	Precise -9.7 (-19.3, -0.09)	Insufficient
	2; 97	Prolactin-related / sexual AE	RCT / HRoB and PCS / high quality = Moderate	Inconsistent	Direct	Imprecise (NSD)	Low
	3; 112	Sedation	RCTs / HRoB = Moderate PCS / low quality = Low	Consistent	Direct	Imprecise (NSD)	Low
	4; 132	Weight	RCTs / HRoB = Moderate PCSs / low quality = Low	Inconsistent	Direct	Precise -5.79 (-8.6, -2.98)	Low
Haloperidol vs. risperidone	1; 50	Dyslipidemia	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	3; 130	EPS	RCTs / HRoB = Moderate PCS / low quality = Low	Inconsistent	Direct	Not pooled	Insufficient
	1; 50	Insulin resistance	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient

AE = adverse event; EPS = extrapyramidal symptom; HRoB = high risk of bias; NSD = not significantly different; PCS = prospective cohort study; RCS = retrospective cohort study; RCT = randomized controlled trial; URoB = unclear risk of bias

Table 9. Strength of evidence for adverse events (continued)

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
Haloperidol vs. risperidone (continued)	2; 80	Prolactin-related / sexual AE	RCTs / HRoB = Moderate	Consistent	Direct	Imprecise (NSD)	Low
	2; 100	Sedation	RCT / HRoB = Moderate PCS / low quality = Low	Inconsistent	Direct	Imprecise (NSD)	Low
	3; 130	Weight	RCTs / HRoB = Moderate PCS / low quality = Low	Consistent	Direct	Imprecise (NSD)	Low
Pimozide vs. risperidone	0	Dyslipidemia	—	—	—	—	Insufficient (no data)
	1; 19	EPS	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Insulin resistance	—	—	—	—	Insufficient (no data)
	0	Prolactin-related / sexual AE	—	—	—	—	Insufficient (no data)
	0	Sedation	—	—	—	—	Insufficient (no data)
	1; 19	Weight	RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
Haloperidol vs. pimozide	0	Dyslipidemia	—	—	—	—	Insufficient (no data)
	1; 22	EPS	RCT / URoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Insulin resistance	—	—	—	—	Insufficient (no data)
	1; 22	Prolactin-related / sexual AE	RCT / URoB = Moderate	Unknown	Direct	Precise -8.7 (-17.2, -0.2)	Insufficient (no data)
	0	Sedation	—	—	—	—	Insufficient (no data)
	1; 22	Weight	RCT / URoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
Aripiprazole vs. olanzapine	1; 312	Dyslipidemia	PCS / high quality = Moderate	Unknown	Direct	Precise Total cholesterol -11.9 (-23.4, -0.3)	Low
	0	EPS	—	—	—	—	Insufficient (no data)
	1; 312	Insulin resistance	PCS / high quality = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Prolactin-related / sexual AE	—	—	—	—	Insufficient (no data)
	0	Sedation	—	—	—	—	Insufficient (no data)
	1; 312	Weight	PCS / high quality = Moderate	Unknown	Direct	Precise -4.1 (-5.5, -2.7)	Low
Aripiprazole vs. quetiapine	1; 312	Dyslipidemia	PCS / high quality = Moderate	Unknown	Direct	Precise Triglycerides: -39.4 (-71.3, -7.4)	Low
	0	EPS	—	—	—	—	Insufficient (no data)

Table 9. Strength of evidence for adverse events (continued)

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
Aripiprazole vs. quetiapine (continued)	1; 312	Insulin resistance	PCS / high quality = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Prolactin-related / sexual AE	—	—	—	—	Insufficient (no data)
	0	Sedation	—	—	—	—	Insufficient (no data)
	1; 312	Weight	PCS / high quality = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
Aripiprazole vs. risperidone	1; 312	Dyslipidemia	PCS / high quality = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	EPS	—	—	—	—	Insufficient (no data)
	1; 312	Insulin resistance	PCS / high quality = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Prolactin-related / sexual AE	—	—	—	—	Insufficient (no data)
	0	Sedation	—	—	—	—	Insufficient (no data)
	1; 312	Weight	PCS / high quality = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
Aripiprazole vs. ziprasidone	0	Dyslipidemia	—	—	—	—	Insufficient (no data)
	1; 46	EPS	RCS / high quality = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Insulin resistance	—	—	—	—	Insufficient (no data)
	0	Prolactin-related / sexual AE	—	—	—	—	Insufficient (no data)
	1; 46	Sedation	RCS / high quality = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	1; 46	Weight	RCS / high quality = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
Clozapine vs. olanzapine	2; 65	Dyslipidemia	RCTs / HRoB, URoB = Moderate	Inconsistent	Direct	Imprecise (NSD)	Low
	3; 98	EPS	RCT / HRoB, RCS / high quality = Moderate; PCS / low quality = Low	Inconsistent	Direct	Imprecise (NSD)	Low
	1; 40	Insulin resistance	RCT / HRoB = Moderate	Consistent	Direct	Imprecise (NSD)	Insufficient
	3; 113	Prolactin-related / sexual AE	RCT / HRoB, PCS and RCS / high quality = Moderate	Consistent	Direct	Precise -10.8 (-16.7, -4.8)	Low
	3; 74	Sedation	RCT / HRoB, PCS and RCS / high quality = Moderate	Consistent	Direct	Imprecise (NSD)	Low
	5; 146	Weight	RCTs / HRoB, URoB, PCS / high and low quality, RCS / high quality = Moderate	Inconsistent	Direct	Imprecise (NSD)	Low

Table 9. Strength of evidence for adverse events (continued)

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
Clozapine vs. quetiapine	0	Dyslipidemia	—	—	—	—	Insufficient (no data)
	1; 26	EPS	RCS / high quality = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Insulin resistance	—	—	—	—	Insufficient (no data)
	1; 26	Prolactin-related / sexual AE	RCS / high quality = Moderate	Unknown	DIrect	Imprecise (NSD)	Insufficient
	1; 26	Sedation	RCS / high quality = Moderate	Unknown	DIrect	Imprecise (NSD)	Insufficient
	1; 26	Weight	RCS / high quality = Moderate	Unknown	DIrect	Imprecise (NSD)	Insufficient
Clozapine vs. risperidone	0	Dyslipidemia	—	—	—	—	Insufficient (no data)
	2; 58	EPS	RCS / high quality = Moderate, PCS / low quality = Low	Consistent	Direct	Imprecise (NSD)	Low
	0	Insulin resistance	—	—	—	—	Insufficient (no data)
	1; 26	Prolactin-related / sexual AE	RCS / high quality = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	1; 26	Sedation	RCS / high quality = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	2; 58	Weight	RCS / high quality = Moderate, PCS / low quality = Low	Consistent	Direct	Imprecise (NSD)	Low
Olanzapine vs. quetiapine	2; 366	Dyslipidemia	PCSs / high quality = Moderate	Inconsistent	Direct	Imprecise (NSD)	Low
	3; 96	EPS	RCT / HRoB, RCS / high quality = Moderate	Inconsistent	Direct	Imprecise (NSD)	Low
	2; 366	Insulin resistance	PCSs / high quality = Moderate	Consistent	Direct	Imprecise (NSD)	Low
	2; 73	Prolactin-related / sexual AE	RCT / HRoB, RCS / high quality = Moderate	Inconsistent	Direct	Imprecise (NSD)	Insufficient
	3; 96	Sedation	RCTs / HRoB, RCS / high quality = Moderate	Inconsistent	Direct	Imprecise (NSD)	Low
	4; 221	Weight	RCTs / HRoB, PCS / high quality = Moderate	Consistent	Direct	Precise Weight: 6.8 (1.4, 12.2); BMI: 2.3 (0.5, 4.2)	Moderate
Olanzapine vs. risperidone	5; 418	Dyslipidemia	3 RCTs / HRoB (2), URoB (1), 2 PCS / high quality = Moderate	Consistent	Direct	Precise Cholesterol: 10.2 (3.1, 17.2) Triglyceride: 17.3 (3.5, 31.1)	Moderate

Table 9. Strength of evidence for adverse events (continued)

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
Olanzapine vs. risperidone (continued)							
	11; 533	EPS	5 RCTs / HRoB (4), URoB (1) = Moderate 3 PCS / high quality (1), low quality (2), 3 RCS / high quality (2), low quality (1) = Moderate / Low	Consistent	Direct	Imprecise (NSD)	Low
	5; 418	Insulin resistance	2 RCTs / HRoB (1), URoB (1), 3 PCS / high quality = Moderate	Inconsistent	Direct	Imprecise (NSD)	Low
	9; 472	Prolactin-related / sexual AE	7 RCTs / HRoB, 1 RCS / high quality = Moderate 1 PCS / low quality = Low	Consistent	Direct	Precise -18.7 (-30.2, -7.2)	Moderate
	9; 473	Sedation	5 RCTs / HRoB (4), URoB (1) = Moderate 2 PCS / high quality (1), low quality (1), 2 RCS / low quality = Low / Moderate	Inconsistent	Direct	Imprecise (NSD)	Low
	13; 840	Weight	7 RCTs / HRoB (6), URoB (1), 1 NRCT / HRoB = Moderate 4 PCS / high quality (2) = Moderate, low quality (2), 1 RCS / low quality = Low	Consistent	Direct	Precise Weight: 2.4 (1.3, 3.4), Fat mass: 1.7 (0.8, 2.6), BMI: 0.95 (0.7, 1.2)	Moderate
Olanzapine vs. ziprasidone	0	Dyslipidemia	—	—	—	—	Insufficient (no data)
	1; 100	EPS	1 RCS / low quality = Low	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Insulin resistance	—	—	—	—	Insufficient (no data)
	0	Prolactin-related / sexual AE	—	—	—	—	Insufficient (no data)
	1; 100	Sedation	1 RCS / low quality = Low	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Weight	—	—	—	—	Insufficient (no data)
Quetiapine vs. risperidone	3; 302	Dyslipidemia	1 RCT / HRoB, 2 PCS / high quality = Moderate	Consistent	Direct	Imprecise (NSD)	Low
	3; 87	EPS	3 RCTs / HRoB = Moderate	Consistent	Direct	Imprecise (NSD)	Low
	2; 280	Insulin resistance	2 PCS / high quality = Moderate	Consistent	Direct	Imprecise (NSD)	Low

Table 9. Strength of evidence for adverse events (continued)

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
Quetiapine vs. risperidone (continued)	3; 87	Prolactin-related / sexual AE	3 RCTs / HRoB = Moderate	Inconsistent	Direct	Imprecise (NSD)	Low
	3; 87	Sedation	3 RCTs / HRoB = Moderate	Inconsistent	Direct	Imprecise (NSD)	Low
	5; 369	Weight	3 RCTs / HRoB, 2 PCS / high quality = Moderate	Inconsistent	Direct	Imprecise (NSD)	Low
FGA vs. placebo	0	Dyslipidemia	—	—	—	—	Insufficient (no data)
	2; 38	EPS	2 RCTs / URoB = Moderate	Consistent	Direct	Imprecise (NSD)	Insufficient
	0	Insulin resistance	—	—	—	—	Insufficient (no data)
	1; 22	Prolactin-related / sexual AE	1 RCT / URoB = Moderate	Unknown	Direct	Precise Haloperidol: 6.1 (2.2, 10.0), Pimozide: 14.8 (7.1, 22.5)	Insufficient
	1; 16	Sedation	1 RCT / URoB = Moderate	Unknown	Indirect	Precise 17.0 (1.0, 277.6)	Insufficient
	1; 22	Weight	1 RCT / URoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
Aripiprazole vs. placebo	2; 514	Dyslipidemia	2 RCTs / HRoB = Moderate	Inconsistent	Direct	Precise 2.5 (1.4, 4.4)	Low
	4; 859	EPS	4 RCTs / HRoB = Moderate	Consistent	Direct	Precise 4.6 (2.4, 9.1)	Moderate
	3; 816	Insulin resistance	3 RCTs / HRoB = Moderate	Consistent	Direct	Imprecise (NSD)	Low
	3; 816	Prolactin-related / sexual AE	3 RCTs / HRoB = Moderate	Consistent	Direct	Precise -4.1 (-6.3, -1.8)	Moderate
	4; 859	Sedation	4 RCTs / HRoB = Moderate	Consistent	Direct	Precise Somnolence: 2.7 (1.1, 6.5)	Low
	4; 859	Weight	4 RCTs / HRoB = Moderate	Consistent	Direct	Precise Weight: 0.77 (0.40, 1.15)	Moderate
Olanzapine vs. placebo	2; 268	Dyslipidemia	2 RCTs / HRoB = Moderate	Inconsistent	Direct	Precise Triglyceride: 2.42 (1.2, 4.9)	Low
	3; 232	EPS	3 RCTs / HRoB = Moderate	Inconsistent	Direct	Imprecise (NSD)	Low
	3; 328	Insulin resistance	3 RCTs / HRoB = Moderate	Consistent	Direct	Imprecise (NSD)	Low
	2; 268	Prolactin-related / sexual AE	2 RCTs / HRoB = Moderate	Consistent	Direct	Precise 11.5 (8.8, 14.1)	Moderate

Table 9. Strength of evidence for adverse events (continued)

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
Olanzapine vs. placebo (continued)	3; 178	Sedation	3 RCTs / HRoB = Moderate	Consistent	Direct	Imprecise (NSD)	Low
	4; 339	Weight	4 RCTs / HRoB = Moderate	Consistent	Direct	Precise Weight: 4.6 (3.1, 6.1)	Moderate
Paliperidone vs. placebo	0	Dyslipidemia	—	—	—	—	Insufficient (no data)
	0	EPS	—	—	—	—	Insufficient (no data)
	1; 201	Insulin resistance	1 RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	0	Prolactin-related / sexual AE	—	—	—	—	Insufficient (no data)
	0	Sedation	—	—	—	—	Insufficient (no data)
	1; 201	Weight	1 RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
Quetiapine vs. placebo	2; 254	Dyslipidemia	2 RCTs / HRoB = Moderate	Consistent	Direct	Precise Triglyceride: 29.1 (7.3, 50.9)	Moderate
	3; 271	EPS	3 RCTs / HRoB = Moderate	Inconsistent	Direct	Imprecise (NSD)	Low
	1; 32	Insulin resistance	1 RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	4; 303	Prolactin-related / sexual AE	4 RCTs / HRoB = Moderate	Consistent	Direct	Imprecise (NSD)	Low
	4; 303	Sedation	4 RCTs / HRoB = Moderate	Inconsistent	Direct	Imprecise (NSD)	Low
	4; 303	Weight	4 RCTs / HRoB = Moderate	Consistent	Direct	Precise Weight: 1.8 (1.1, 2.5)	Moderate
Risperidone vs. placebo	1; 170	Dyslipidemia	1 RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	14; 1129	EPS	14 RCTs / HRoB (12), URoB (2) = Moderate	Consistent	Direct	Precise 2.65 (1.44,4.86)	Moderate
	1; 170	Insulin resistance	1 RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	8; 1020	Prolactin-related / sexual AE	8 RCTs / HRoB (7), URoB (1) = Moderate	Consistent	Direct	Precise 21.9 (8.9, 35.0)	Moderate
	12; 1075	Sedation	12 RCTs / HRoB (10), URoB (2) = Moderate	Consistent	Direct	Precise Sedation: 2.9 (1.5, 5.5) Somnolence: 3.03 (1.9, 5.0)	Moderate
	12; 1081	Weight	12 RCTs / HRoB (10), URoB (2) = Moderate	Consistent	Direct	Precise 1.8 (1.5, 2.1)	Moderate

Table 9. Strength of evidence for adverse events (continued)

Technique	N studies; N subjects enrolled	Outcome	Strength of evidence domains				Strength of evidence
			Risk of bias	Consistency	Directness	Precision	
Ziprasidone vs. placebo	0	Dyslipidemia	—	—	—	—	Insufficient (no data)
	3; 550	EPS	3 RCTs / HRoB = Moderate	Consistent	Direct	Precise 10.3 (1.4, 74.9)	Low
	0	Insulin resistance	—	—	—	—	Insufficient (no data)
	1; 28	Prolactin-related / sexual AE	1 RCT / HRoB = Moderate	Unknown	Direct	Imprecise (NSD)	Insufficient
	3; 488	Sedation	3 RCTs / HRoB = Moderate	Consistent	Direct	Precise Somnolence 2.98 (1.7, 5.2)	Moderate
	3; 488	Weight	3 RCTs / HRoB = Moderate	Consistent	Direct	Imprecise (NSD)	Low

Appendix I. Adverse Event Data Tables

First generation antipsychotics versus second generation antipsychotics: Dichotomous outcomes

Adverse Event	No. studies	Events (Drug 1)	N (Drug 1)	Events (Drug 2)	N (Drug 2)	Relative risk	95% CI
Haloperidol (Drug 1) versus Clozapine (Drug 2)							
Tachycardia	1	5	11	7	10	0.65	(0.3, 1.4)
Drowsiness	1	3	11	9	10	**0.30**	**(0.1, 0.8)**
Hepatic enzyme elevation	1	0	11	1	10	0.30	(0.01, 6.7)
Neutrophil count, decrease	1	0	11	4	10	0.10	(0.01, 1.7)
Agranulocytosis	1	0	11	0	10	NC	NC
Seizures	1	0	11	1	10	0.30	(0.01, 6.7)
Neuroleptic malignant syndrome	1	1	11	0	10	2.74	(0.1, 60.2)
Haloperidol (Drug 1) versus Olanzapine (Drug 2)							
WAE	1	7	22	0	35	15.9	(0.99, 256.9)
Weight gain	1	5	6	6	6	0.83	(0.6, 1.2)
Weight–gain ≥7%	1	1	8	19	21	**0.14**	**(0.02, 0.9)**
Weight loss	1	1	6	0	6	3.00	(0.2, 60.9)
Menstrual irregularities	1	2	15	0	16	5.32	(0.3, 102.3)
Galactorrhea	1	0	15	1	16	0.35	(0.02, 8.1)
Gynecomastia	1	2	15	2	16	1.07	(0.2, 6.6)
Akathisia	2	5	22	2	35	3.50	(0.2, 56.0)
Dystonia	2	4	22	0	35	**8.19**	**(1.0, 65.5)**
Hypokinesia-akinesia	1	2	7	1	19	5.43	(0.6, 50.9)
EPS	2	5	13	3	25	**3.53**	**(1.1, 10.9)**
EPS (AIMS: dyskinesias)	1	0	6	0	6	NC	NC
Severe EPS	1	0	15	0	16	NC	NC
Tachycardia	2	1	13	4	25	0.85	(0.08, 8.9)
Fatigue	2	7	13	13	25	0.89	(0.21, 3.8)
Sedation	2	17	22	24	35	0.99	(0.83, 1.2)
Seizure	1	0	7	0	19	NC	NC
Constipation	2	6	22	8	35	1.10	(0.44, 2.7)
Sexual desire	1	1	7	4	19	0.68	(0.09, 5.1)
Depression	1	5	7	5	19	**2.71**	**(1.1, 6.6)**
Rash	2	8	21	4	22	1.96	(0.75, 5.1)
Itching	2	7	22	8	35	1.31	(0.55, 3.1)

AIMS = abnormal involuntary movement scale; CI = confidence interval EPS = extrapyramidal symptom; N = number; SAE = severe adverse event; WAE = withdrawal due to adverse event

First generation antipsychotics versus second generation antipsychotics: Dichotomous outcomes (continued)

Adverse Event	No. studies	Events (Drug 1)	N (Drug 1)	Events (Drug 2)	N (Drug 2)	Relative risk	95% CI
Haloperidol (Drug 1) versus Risperidone (Drug 2) (continued)							
SAE	1	0	15	0	15	NC	NC
WAE	2	7	22	5	36	1.77	(0.70, 4.5)
Weight–gain ≥7%	1	1	8	9	21	0.29	(0.04, 2.0)
Breast enlargement	1	0	15	1	15	0.33	(0.01, 7.6)
Menstrual irregularities	1	2	15	1	19	2.53	(0.3, 25.3)
Galactorrhea	1	0	15	1	19	0.42	(0.02, 9.6)
Gynecomastia	1	2	15	2	19	1.27	(0.2, 8.0)
Akathisia	2	5	22	1	36	**6.93**	**(1.26, 38.1)**
Dystonia	2	4	22	1	36	5.32	(0.89, 31.7)
EPS	1	4	7	4	17	2.43	(0.8, 7.1)
Severe EPS	1	0	15	2	19	0.25	(0.01, 4.9)
Hypokinesia / akinesia	1	2	7	2	17	2.43	(0.4, 14.0)
Sedation	2	17	22	20	36	1.37	(0.49, 3.8)
Fatigue	1	5	7	2	17	**6.07**	**(1.5, 24.2)**
Seizure	1	0	7	0	17	NC	NC
Constipation	3	9	37	10	49	1.07	(0.48, 2.4)
Diminished sexual desire	1	1	7	1	17	2.43	(0.2, 33.6)
Depression	1	5	7	2	17	**6.07**	**(1.5, 24.2)**
Itching	2	7	22	4	36	2.22	(0.80, 6.2)
Rash	1	7	15	3	19	2.96	(0.9, 9.5)

First generation antipsychotics versus second generation antipsychotics: Continuous outcomes

Adverse Event	No. studies	Mean (Drug 1)	SD (Drug 1)	N (Drug 1)	Mean (Drug 2)	SD (Drug 2)	N (Drug 2)	Mean difference	95% CI
FGA (Drug 1) versus SGA (Drug 2)									
Weight (kg)	1	3.4	3.2	85	2.0	3.9	24	1.4	(-0.3, 3.1)
FGA (Drug 1) versus Clozapine (Drug 2)									
Prolactin	1	26.7	16.0	20	11.2	6.1	20	**15.5**	**(8.0, 23.0)**
Haloperidol (Drug 1) versus Clozapine (Drug 2)									
Weight (kg)	1	0.94	2.89	11	0.90	6.47	10	0.04	(-4.40, 4.32)
Prolactin (ng/mL)	1	47.8	30.6	10	11.2	4.0	15	**36.6**	**(17.5, 55.7)**
EPS (SAS)	1	13.9	3.5	11	12.0	1.6	10	1.9	(-4.20, 0.39)
EPS (AIMS)	1	12.2	3.5	11	12.1	4.8	10	0.1	(-3.72, 3.52)
SBP (mmHg)	1	3.27	17.6	11	-1.6	12.9	10	4.87	(-18.0, 8.25)
DBP (mmHg)	1	7.00	13.3	11	-4.4	14.3	10	11.4	(-23.3, 0.45)
Haloperidol (Drug 1) versus Olanzapine (Drug 2)									
Weight (kg)	3	NA	NA	39	NA	NA	53	**-5.79**	**(-8.6, -2.98)**
BMI	3	NA	NA	33	NA	NA	47	-2.58	(-5.5, 0.30)
Abdominal circumference	1	NR	NR	10	92.9	13.3	10	NC	NC
LDL (mg/dL)	1	91.7	32.7	15	86.3	27.7	16	5.4	(-16.0, 26.8)
HDL (mg/dL)	1	44.3	7.9	15	44.5	13.4	16	-0.2	(-7.89, 7.49)
Triglyceride (mg/dL)	1	120	90	15	142	62	16	-22	(-76.7, 32.7)
Glucose (mg/dL)	1	87.5	12.9	15	97.2	14.4	16	**-9.7**	**(-19.3, -0.09)**
Prolactin (ng/mL)	2	NA	NA	25	NA	NA	26	12.4	(-9.0, 33.8)
EPS (SAS)	1	5.2	5.8	15	1.9	1.4	16	**3.3**	**(0.29, 6.31)**
QTc (ms)	1	402	16	15	402	23	16	0	(-13.9, 13.9)
ALT (U/L)	1	25.3	15.0	15	41.1	40.4	16	-15.8	(-37.0, 5.40)
AST (U/L)	1	20.7	8.2	15	32.4	20.8	16	**-11.7**	**(-22.7, -0.7)**
WBC (U/L)	1	6.6	1.7	15	6.3	1.7	16	0.3	(-0.9, 1.5)
Haloperidol (Drug 1) versus Risperidone (Drug 2)									
Weight (kg)	3	NA	NA	38	NA	NA	53	3.98	(-8.8, 16.8)
BMI	2	NA	NA	23	NA	NA	40	-0.16	(-5.5, 5.1)
Height	1	150.1	13.2	15	141.6	10.9	15	8.5	(-0.16, 17.2)
LDL (mg/dL)	1	91.7	32.7	15	98.9	26.5	19	-7.2	(-27.6, 13.2)
HDL (mg/dL)	1	44.3	7.9	15	49.7	15.2	19	-5.4	(-13.3, 2.52)

AIMS = abnormal involuntary movement scale; ALT = alanine transaminase; AST = aspartate aminotransferase; BMI = body mass index; CI = confidence interval; DBP = diastolic blood pressure; ERES = extrapyramidal symptom rating scale; EPS = extrapyramidal symptom; HDL = high density lipoproteins; LDL = low density lipoproteins; N = number; NA = not applicable; NR = not reported; SAS = Simpson Angus Rating Scale; SBP = supine blood pressure; WBC = white blood cell

First generation antipsychotics versus second generation antipsychotics: Continuous outcomes (continued)

Adverse Event	No. studies	Mean (Drug 1)	SD (Drug 1)	N (Drug 1)	Mean (Drug 2)	SD (Drug 2)	N (Drug 2)	Mean difference	95% CI
Haloperidol (Drug 1) versus Risperidone (Drug 2) (continued)									
Triglyceride (mg/dL)	1	120	90	15	114	70	19	6.0	(-49.4, 61.4)
Glucose (mg/dL)	1	87.5	12.9	15	79.0	19.8	19	8.5	(-2.5, 19.5)
Prolactin (ng/mL)	1	32.2	29.0	15	37.2	19.8	19	-5.0	(-22.2, 12.2)
EPS (ESRS)	1	1.27	1.75	15	0.15	0.38	15	**1.12**	**(0.21, 2.03)**
EPS (SAS)	1	5.2	5.8	15	2.1	2.2	19	**3.1**	**(0.003, 6.2)**
Parkinsonism, dystonia, dyskinesia (ESRS)	1	0	0	15	0	0	15	NC	NC
SBP (mmHg)	1	101.1	5.2	15	105.6	7.3	15	-4.5	(-9.04, 0.04)
DBP (mmHg)	1	82.5	10.1	15	86.6	11.5	15	-4.1	(-11.9, 3.7)
Pulse	1	96.5	5.6	15	94.8	5.3	15	1.7	(-2.2, 5.6)
Tachycardia	1	0	0	7	2	0.12	17	NC	NC
QTc	1	402	16	15	402	25	19	NC	NC
ALT (U/L)	1	25.3	15.0	15	32.9	23.8	19	-7.6	(-20.7, 5.52)
AST (U/L)	1	20.7	8.2	15	28.1	10.8	19	**-7.4**	**(-13.8, -1.01)**
WBC (U/L)	1	6.6	1.7	15	6.3	1.5	19	0.3	(-0.79, 1.39)
Pimozide (Drug 1) versus Risperidone (Drug 2)									
Side effect checklist	1	8.2	6.6	7	9.5	6.0	12	-1.3	(-7.25, 4.65)
Weight (kg)	1	56.7	21.5	7	57.4	22.4	12	-0.7	(-21.1, 19.7)
EPS (ESRS)	1	0.2	0.6	7	0.2	0.6	12	0	(-0.56, 0.56)
QTc	1	2.8	14.6	7	8.1	14.6	12	-5.3	(-18.9, 8.31)

First generation antipsychotics versus first generation antipsychotics: Dichotomous outcomes

Adverse Event	No. studies	Events (Drug 1)	N (Drug 1)	Events (Drug 2)	N (Drug 2)	Relative risk	95% CI
Haloperidol (continuous) (Drug 1) versus Haloperidol (discontinuous) (Drug 2)							
Parkinsonism SE	1	0	30	0	22	NC	NC
Dyskinesias	1	3	30	9	22	**0.24**	**(0.07, 0.8)**
Sedation	1	0	30	0	22	NC	NC
Haloperidol (Drug 1) versus Pimozide (Drug 2)							
Treatment-limiting SE	1	9	22	3	22	3.00	(0.9, 9.6)
WAE	1	2	22	0	22	5.00	(0.3, 98.5)
Weight gain	1	0	22	1	22	0.33	(0.01, 7.8)
Akathisia	1	2	22	0	22	5.00	(0.3, 98.5)
Akinesia	1	2	22	0	22	5.00	(0.3, 98.5)
Electrocardiovascular	1	0	22	0	22	NC	NC
Anxiety or depression	1	3	22	1	22	3.00	(0.34, 26.7)
Pimozide (Drug 1) versus Pimozide (Drug 2)							
Tardive dyskinesia	1	0	4	0	6	NC	NC

CI = confidence interval; N = number; NC = not calculated; SE = side effect; WAE = withdrawal due to adverse event

First generation antipsychotics versus first generation antipsychotics: Continuous outcomes

Adverse Event	No. studies	Mean (Drug 1)	SD (Drug 1)	N (Drug 1)	Mean (Drug 2)	SD (Drug 2)	N (Drug 2)	Mean difference	95% CI
Haloperidol (Drug 1) versus Pimozide (Drug 2)									
Prolactin	1	12.9	8.4	19	21.6	19.5	25	**-8.7**	**(-17.2, -0.2)**
EPS (AIMS)	1	0.3	1.1	22	0.4	1.1	22	-0.1	(-0.8, 0.6)
EPS (ESRS)	1	4.1	6.9	26	2.0	3.0	26	2.1	(-0.8, 5.0)

AIMS = abnormal involuntary movement scale; CI = confidence interval; EPS = extrapyramidal symptom; ESRS = extrapyramidal symptom rating scale; N = number

Second generation antipsychotics versus second generation antipsychotics: Dichotomous outcomes

Adverse Event	No. studies	Events (Drug 1)	N (Drug 1)	Events (Drug 2)	N (Drug 2)	Relative risk	95% CI
Aripiprazole (Drug 1) versus Olanzapine (Drug 2)							
WAE	1	5	47	5	52	1.11	(0.3, 3.6)
Weight–gain ≥7%	1	24	41	38	45	**0.69**	**(0.5, 0.9)**
Weight loss	1	2	41	1	45	2.20	(0.2, 23.3)
Transition to overweight or obese category	1	4	41	10	45	0.44	(0.2, 1.3)
BMI>10%	1	9	41	30	45	**0.33**	**(0.2, 0.6)**
Glucose, high	1	2	41	1	45	2.20	(0.2, 23.3)
Insulin, high	1	3	41	8	45	0.41	(0.1, 1.5)
Insulin resistance	1	3	41	8	45	0.41	(0.1, 1.5)
Metabolic syndrome	1	1	41	1	45	1.10	(0.07, 17.0)
Cholesterol, high	1	3	41	12	45	**0.27**	**(0.08, 0.9)**
Triglycerides, high	1	3	41	9	45	0.37	(0.1, 1.3)
Dyslipidemia	1	3	41	13	45	**0.25**	**(0.08, 0.8)**
Aripiprazole (Drug 1) versus Quetiapine (Drug 2)							
WAE	1	5	47	6	45	0.80	(0.3, 2.4)
Weight–gain ≥7%	1	24	41	20	36	1.05	(0.7, 1.6)
Weight loss	1	2	41	1	36	1.76	(0.2, 18.6)
Transition to overweight or obese category	1	4	41	13	36	**0.27**	**(0.1, 0.8)**
BMI>10%	1	9	41	14	36	0.56	(0.3, 1.2)
Glucose, high	1	2	41	2	36	0.88	(0.1, 5.9)
Insulin, high	1	3	41	1	36	2.63	(0.3, 24.2)
Insulin resistance	1	3	41	1	36	2.63	(0.3, 24.2)
Metabolic syndrome	1	1	41	2	36	0.44	(0.04, 4.6)
Cholesterol, high	1	3	41	5	36	0.53	(0.1, 2.1)
Triglycerides, high	1	3	41	6	36	0.44	(0.1, 1.6)
Dyslipidemia	1	3	41	3	36	0.88	(0.2, 4.1)
Aripiprazole (Drug 1) versus Risperidone (Drug 2)							
WAE	1	5	47	23	168	0.78	(0.3, 1.9)
Weight–gain ≥7%	1	24	41	87	135	0.91	(0.7, 1.2)
Weight loss	1	2	41	6	135	1.10	(0.2, 5.2)
Transition to overweight or obese category	1	4	41	19	135	0.69	(0.3, 1.9)
BMI>10%	1	9	41	48	135	0.62	(0.3, 1.2)

AE = adverse event; AIMS = abnormal involuntary movement scale; ALT = alanine transaminase; AST = aspartate aminotransferase; BMI = body mass index; CI = confidence interval; CV= cardiovascular; DBP = diastolic blood pressure; ECG = electrocardiogram; ERES = extrapyramidal symptom rating scale; EPS = extrapyramidal symptom; GGT = gamma-glutamyl transpeptidase; HDL = high density lipoprotein; N = number; SAE = severe adverse event; SAS = Simpson Angus Rating Scale; SBP = supine blood pressure; WBC = white blood cell; WAE = withdrawal due to adverse event

Second generation antipsychotics versus second generation antipsychotics: Dichotomous outcomes (continued)

Adverse Event	No. studies	Events (Drug 1)	N (Drug 1)	Events (Drug 2)	N (Drug 2)	Relative risk	95% CI
Aripiprazole (Drug 1) versus Risperidone (Drug 2) (continued)							
Glucose, high	1	2	41	4	135	1.65	(0.3, 8.7)
Insulin, high	1	3	41	9	135	1.10	(0.3, 3.9)
Insulin resistance	1	3	41	11	135	0.90	(0.3, 3.1)
Metabolic syndrome	1	1	41	0	135	9.71	(0.4, 234.0)
Cholesterol, high	1	3	41	23	135	0.43	(0.1, 1.4)
Triglycerides, high	1	3	41	16	135	0.62	(0.2, 2.0)
Dyslipidemia	1	3	41	26	135	0.38	(0.1, 1.2)
Aripiprazole (Drug 1) versus Ziprasidone (Drug 2)							
WAE	1	2	20	6	14	**0.23**	**(0.05, 0.99)**
Weight gain	1	2	20	0	14	3.57	(0.2, 69.1)
EPS	1	2	20	0	14	3.57	(0.2, 69.1)
Sedation	1	10	20	8	14	0.88	(0.5, 1.6)
Agitation	1	0	20	2	14	0.14	(0.01, 2.8)
Clozapine (Drug 1) versus Olanzapine (Drug 2)							
Total AE	1	1	2	15	24	0.80	(0.2, 3.3)
SAE	1	4	18	1	21	4.67	(0.6, 38.1)
WAE	1	2	19	1	21	2.21	(0.2, 22.5)
Weight gain	2	9	18	14	40	0.83	(0.5, 1.4)
Weight–gain ≥7%	1	3	13	7	18	0.59	(0.2, 1.9)
Weight loss	1	1	16	1	16	1.00	(0.07, 14.6)
Overweight	1	5	14	4	19	1.70	(0.6, 5.2)
Obese	1	6	14	10	19	0.81	(0.4, 1.7)
Cholesterol, high	2	3	25	4	30	0.89	(0.2, 3.6)
Triglycerides	2	11	26	8	31	1.65	(0.9, 3.0)
Diabetes, drug-induced	1	1	18	0	21	3.47	(0.2, 80.4)
Impaired glucose tolerance	1	1	18	0	21	3.47	(0.2, 80.4)
Glucose, high	1	4	14	1	18	5.14	(0.6, 41.0)
Amenorrhea	1	0	2	0	24	NC	NC
Galactorrhea	1	0	2	0	24	NC	NC
Prolactin, high	2	4	16	10	43	0.75	(0.3, 1.9)
Akathesia	1	1	16	1	16	1.00	(0.07, 14.6)
Bradykinesia or dyskinesia	1	0	2	0	0	NC	NC
Dystonia	2	1	18	2	40	1.58	(0.2, 11.6)
EPS	1	0	18	3	21	0.17	(0.01, 3.0)
Tardive dyskinesia	1	1	16	0	16	3.00	(0.1, 68.6)

Second generation antipsychotics versus second generation antipsychotics: Dichotomous outcomes (continued)

Adverse Event	No. studies	Events (Drug 1)	N (Drug 1)	Events (Drug 2)	N (Drug 2)	Relative risk	95% CI
Clozapine (Drug 1) versus Olanzapine (Drug 2) (continued)							
Bradycardia	1	0	16	0	16	NC	NC
ECG anomalies	2	3	28	2	28	1.50	(0.3, 8.3)
Tachycardia	3	11	41	9	36	1.1	(0.08, 16.1)
Hypotension	1	1	16	1	16	1.00	(0.07, 14.6)
Hypertension	2	9	27	1	27	**6.34**	**(1.3, 31.8)**
Sedation	1	0	2	0	24	NC	NC
Sleepiness	2	0	2	0	24	NC	NC
Somnolence	2	4	27	9	21	0.30	(0.01, 13.5)
Transaminase, increase	2	1	17	8	32	0.31	(0.0, 27.6)
Hepatic volume, increase	1	0	2	1	24	2.78	(0.1, 54.0)
ALT, elevated	1	5	16	1	16	5.00	(0.7, 38.2)
AST, elevated	1	5	16	2	16	2.50	(0.6, 11.1)
GGT, elevated	1	1	16	1	16	1.00	(0.07, 14.6)
Leukopenia	1	1	16	1	16	1.00	(0.07, 14.6)
Neutropenia	3	3	45	2	42	1.31	(0.3, 6.4)
Seizures	2	3	23	0	18	3.19	(0.4, 26.6)
Constipation	4	19	61	25	58	0.84	(0.3, 2.1)
Agitation	2	2	31	7	24	0.32	(0.01, 15.4)
Depression	2	7	28	7	29	1.03	(0.4, 2.6)
Irritability	1	0	2	0	24	NC	NC
Skin rash	2	2	14	3	37	2.38	(0.3, 17.5)
Dermatological changes	1	0	16	1	16	0.33	(0.01, 7.6)
Clozapine (Drug 1) versus Quetiapine (Drug 2)							
Total AE	1	1	2	1	2	1.00	(0.1, 7.1)
Weight gain	1	0	2	0	2	NC	NC
AE related to prolactin elevation	1	0	2	0	2	NC	NC
Dyskinesia	1	0	2	1	2	0.33	(0.02, 5.3)
Bradykinesia or dystonia	1	0	2	0	2	NC	NC
Sleepiness or sedation	1	0	2	0	2	NC	NC
Transaminaes, increase	1	0	2	0	2	NC	NC
Hepatic volume, increase	1	0	2	0	2	NC	NC
Irritability	1	0	2	0	2	NC	NC
Skin rash	1	0	2	0	2	NC	NC

Second generation antipsychotics versus second generation antipsychotics: Dichotomous outcomes (continued)

Adverse Event	No. studies	Events (Drug 1)	N (Drug 1)	Events (Drug 2)	N (Drug 2)	Relative risk	95% CI
Clozapine (Drug 1) versus Risperidone (Drug 2)							
Total AE	1	1	2	33	45	0.68	(0.2, 2.8)
Weight gain	2	9	18	17	64	1.45	(0.72, 2.9)
Weight loss	1	1	16	1	19	1.19	(0.08, 17.5)
Amenorrhea	1	0	2	3	45	2.19	(0.1, 33.4)
Galactorrhea	1	0	2	2	45	3.07	(0.2, 50.6)
Prolactin, high	1	0	2	2	45	3.07	(0.2, 50.6)
Akathisia	1	1	16	0	19	3.53	(0.2, 81.1)
Bradykinesia	1	0	2	1	45	5.11	(0.3, 100.6)
Dyskinesia	1	0	2	0	45	NC	NC
Dystonia	2	1	18	3	64	1.43	(0.2, 12.2)
Tardive dyskinesia	1	1	16	0	19	3.53	(0.2, 81.1)
Bradycardia	1	0	16	0	19	NC	NC
ECG alterations	1	1	16	0	19	3.53	(0.2, 81.1)
Hypertension	1	2	16	1	19	2.38	(0.2, 23.8)
Hypotension	1	1	16	0	19	3.53	(0.2, 81.1)
Tachycardia	1	4	16	1	19	4.75	(0.6, 38.3)
Sleepiness	1	0	2	9	45	0.81	(0.06, 10.8)
Sedation	1	0	2	3	45	2.19	(0.1, 33.4)
Transaminases, increase	1	0	2	0	45	NC	NC
Hepatic volume, increase	1	0	2	0	45	NC	NC
ALT, elevated	1	5	16	3	19	1.98	(0.6, 7.0)
AST, elevated	1	5	16	2	19	2.97	(0.7, 13.3)
GGT, elevated	1	1	16	0	19	3.53	(0.2, 81.1)
Leukopenia	1	1	16	0	19	3.53	(0.2, 81.1)
Constipation	1	5	16	1	19	5.94	(0.8, 45.7)
Agitation	1	2	16	1	19	2.38	(0.2, 23.8)
Depression	1	4	16	3	19	1.58	(0.4, 6.1)
Irritability	1	0	2	5	45	1.39	(0.1, 19.7)
Skin rash	1	0	2	1	45	5.11	(0.3, 100.6)
Dermatological changes	1	0	16	0	19	NC	NC
Olanzapine (Drug 1) versus Quetiapine (Drug 2)							
Total AE	2	18	50	7	26	0.72	(0.3, 2.0)
SAE	1	0	26	1	24	0.31	(0.01, 7.2)
WAE	4	15	112	6	81	0.98	(0.4, 2.6)
Weight gain	2	23	50	13	26	1.40	(0.9, 2.1)

Second generation antipsychotics versus second generation antipsychotics: Dichotomous outcomes (continued)

Adverse Event	No. studies	Events (Drug 1)	N (Drug 1)	Events (Drug 2)	N (Drug 2)	Relative risk	95% CI
Olanzapine (Drug 1) versus Quetiapine (Drug 2) (continued)							
Weight loss	1	1	45	1	36	0.80	(0.05, 12.4)
Weight–gain ≥7%	2	44	55	25	46	**1.47**	**(1.1, 2.0)**
Weight–transition to overweight or obese category	1	10	45	13	36	0.62	(0.3, 1.2)
BMI>10% increase	1	30	45	14	36	**1.71**	**(1.1, 2.7)**
BMI≥85th percentile	1	12	20	5	24	**2.88**	**(1.2, 6.8)**
Cholesterol, high	1	12	45	5	36	1.92	(0.7, 5.0)
Triglycerides, high	1	9	45	6	36	1.20	(0.5, 3.1)
Dyslipidemia	1	13	45	3	36	**3.47**	**(1.1, 11.2)**
Metabolic syndrome	1	1	45	2	36	0.40	(0.04, 4.2)
Glucose, high	1	1	45	2	36	0.40	(0.04, 4.2)
Insulin, high	1	8	45	1	36	6.40	(0.8, 48.8)
Insulin resistance	1	8	45	1	36	6.40	(0.8, 48.8)
Prolactin, high	1	2	24	0	2	0.60	(0.04, 9.8)
Amenorrhea	1	4	26	1	24	3.69	(0.4, 30.8)
Galactorrhea	1	0	24	0	2	NC	NC
Dystonia	1	1	24	0	2	0.36	(0.02, 7.0)
Bradykinesia	1	0	24	0	2	NC	NC
Dyskinesia	1	0	24	1	2	**0.04**	**(0.0, 0.8)**
Akathisia	2	10	36	7	34	1.32	(0.6, 3.1)
Hypokinesia	1	14	26	11	24	1.17	(0.7, 2.1)
Orthostatic dizziness	1	5	26	3	24	1.54	(0.4, 5.8)
Tachycardia	1	8	26	11	24	0.67	(0.3, 1.4)
Sedation	2	34	60	20	36	1.16	(0.5, 2.5)
Sleepiness	1	0	24	0	2	NC	NC
Transaminases, increase	1	1	24	0	2	0.36	(0.02, 7.0)
Hepatic volume, increase	1	1	24	0	2	0.36	(0.02, 7.0)
Constipation	1	7	26	10	24	0.65	(0.3, 1.4)
Aggression	1	0	26	1	24	0.31	(0.01, 7.2)
Agitation	1	3	10	1	10	3.00	(0.4, 24.2)
Depression	1	11	26	9	24	1.13	(0.6, 2.2)
Irritability	1	0	24	0	2	NC	NC
Skin rash	1	3	24	0	2	0.84	(0.06, 12.6)
Olanzapine (Drug 1) versus Risperidone (Drug 2)							
Total AE	3	50	73	97	126	**0.87**	**(0.7, 1.0)**
SAE	1	2	35	4	41	0.59	(0.1, 3.0)

Second generation antipsychotics versus second generation antipsychotics: Dichotomous outcomes (continued)

Adverse Event	No. studies	Events (Drug 1)	N (Drug 1)	Events (Drug 2)	N (Drug 2)	Relative risk	95% CI
Olanzapine (Drug 1) versus Risperidone (Drug 2) (continued)							
WAE	6	21	149	47	296	1.03	(0.6, 1.7)
Weight gain	4	36	89	29	145	**1.86**	**(1.0, 3.4)**
Weight loss	2	2	61	7	154	0.69	(0.1, 3.6)
Weight–gain ≥7%	4	70	91	110	182	1.30	(0.9, 1.9)
BMI>10% increase	1	30	45	48	135	**1.88**	**(1.4, 2.6)**
BMI≥85 percentile	1	12	20	9	22	1.47	(0.8, 2.7)
Withdrawal due to weight gain	1	2	13	5	21	0.65	(0.2, 2.9)
Transition to overweight/obese	1	10	45	19	135	1.58	(0.8, 3.1)
Cholesterol, high	1	12	45	23	135	1.57	(0.9, 2.9)
Triglycerides, high	1	9	45	16	135	1.69	(0.8, 3.6)
Dyslipidemia	1	13	45	26	135	1.50	(0.8, 2.7)
Metabolic syndrome	1	1	45	0	135	8.87	(0.4, 214.0)
Glucose, high	1	1	45	4	135	0.75	(0.09, 6.5)
Insulin, high	1	8	45	9	135	**2.67**	**(1.1, 6.5)**
Insulin resistance	1	8	45	11	135	2.18	(0.9, 5.1)
Amenorrhea	1	0	24	3	45	0.26	(0.01, 4.9)
Ejaculatory dysfunction	1	1	18	1	24	1.33	(0.09, 19.9)
Galactorrhea	3	1	54	4	104	0.76	(0.1, 4.1)
Gynecomastia	2	2	29	3	40	0.96	(0.02, 4.7)
Prolactin, high	3	5	51	24	70	**0.26**	**(0.1, 0.6)**
Menstrual irregularities	3	4	38	3	52	1.39	(0.2, 9.6)
Mastitis	1	0	10	1	10	0.33	(0.02, 7.3)
Akathisia	8	17	134	17	178	1.17	(0.6, 2.2)
Bradykinesia	1	0	24	1	45	0.61	(0.03, 14.5)
Dyskinesia	2	0	38	2	85	0.58	(0.07, 5.1)
Dystonia	6	10	124	12	181	1.29	(0.6, 2.9)
EPS	4	13	47	19	87	0.94	(0.6, 1.6)
EPS, severe	1	0	16	2	19	0.24	(0.01, 4.8)

Second generation antipsychotics versus second generation antipsychotics: Dichotomous outcomes (continued)

Adverse Event	No. studies	Events (Drug 1)	N (Drug 1)	Events (Drug 2)	N (Drug 2)	Relative risk	95% CI
Olanzapine (Drug 1) versus Risperidone (Drug 2) (continued)							
Hypokinesia	1	1	19	2	17	0.45	(0.04, 4.5)
Neurological side effects	1	1	15	0	16	3.19	(0.1, 72.7)
Tardive dyskinesia	1	1	71	1	101	1.42	(0.09, 22.4)
Bradycardia	1	0	16	0	19	NC	NC
CV side effects	1	0	15	1	16	0.35	(0.02, 8.1)
ECG alterations	1	1	16	0	19	3.53	(0.2, 81.1)
Hypertension	1	0	16	1	19	0.39	(0.02, 9.0)
Hypotension	2	1	18	1	36	2.61	(0.3, 22.5)
Tachycardia	3	7	47	6	55	1.36	(0.5, 3.9)
Sedation	8	45	135	49	205	1.08	(0.9, 1.3)
Fatigue	2	8	43	11	62	0.7	(0.02, 32.4)
Somnolence	1	3	12	13	19	**0.37**	**(0.1, 1.0)**
Transaminase, increase	1	1	26	0	62	7.00	(0.3, 166.4)
Hepatic volume	1	1	24	0	45	5.52	(0.2, 130.6)
ALT, elevated	1	2	16	3	19	0.79	(0.2, 4.2)
AST, elevated	1	1	16	2	19	0.59	(0.06, 6.0)
GGT, elevated	1	1	16	0	19	3.53	(0.2, 81.1)
Leukopenia	1	1	16	0	19	3.53	(0.2, 81.1)
Seizures	1	0	18	1	24	0.44	(0.02, 10.1)
Constipation	4	10	86	15	96	0.86	(0.3, 2.3)
Diminished sexual desire	1	4	19	1	17	3.58	(0.4, 29.0)
Agitation	4	11	76	9	86	1.38	(0.6, 3.2)
Anxiety	2	3	50	4	57	0.93	(0.2, 3.7)
Depression	3	17	70	9	77	1.84	(0.84, 4.0)
Irritability	2	9	59	13	86	0.71	(0.1, 5.5)
Psychosis, worsening	1	0	35	1	41	0.37	(0.02, 8.8)
Skin rash/ disturbance	4	8	74	5	96	1.86	(0.7, 5.2)
Itching	2	8	35	4	36	1.80	(0.6, 5.2)
Olanzapine (Drug 1) versus Ziprasidone (Drug 2)							
Pseudoparkinsonism	1	1	50	0	50	3.00	(0.1, 71.9)
Sedation	1	33	50	40	50	0.83	(0.7, 1.1)
Generalized itching	1	1	50	1	50	1.00	(0.1, 15.6)

Second generation antipsychotics versus second generation antipsychotics: Dichotomous outcomes (continued)

Adverse Event	No. studies	Events (Drug 1)	N (Drug 1)	Events (Drug 2)	N (Drug 2)	Relative risk	95% CI
Quetiapine (Drug 1) versus Risperidone (Drug 2)							
Total AE	1	1	2	33	45	0.68	(0.2, 2.8)
WAE	2	6	47	36	213	0.92	(0.4, 2.1)
Weight gain	2	8	13	17	56	1.12	(0.6, 2.0)
Weight loss	1	1	36	6	135	0.63	(0.08, 5.0)
Weight–gain ≥7%	2	25	46	95	145	0.82	(0.6, 1.2)
Transition to overweight or obese	1	13	36	19	135	**2.57**	**(1.4, 4.7)**
BMI>10% increase	1	14	36	48	135	1.09	(0.7, 1.8)
BMI≥85th percentile	1	5	24	9	22	0.51	(0.2, 1.3)
Cholesterol, high	1	5	36	23	135	0.82	(0.3, 2.0)
Triglycerides, high	1	6	36	16	135	1.41	(0.6, 3.3)
Dyslipidemia	1	3	36	26	135	0.43	(0.1, 1.4)
Metabolic syndrome	1	2	36	0	135	18.4	(0.9, 374.5)
Abnormal lipid profile	1	1	11	2	11	**5.50**	**(1.6, 19.3)**
Glucose, high/ abnormal	1	2	36	4	135	1.88	(0.4, 9.8)
Insulin, high	1	1	36	9	135	0.42	(0.05, 3.2)
Insulin resistance	1	1	36	11	135	0.34	(0.05, 2.6)
Amenorrhea	1	0	2	3	45	2.19	(0.1, 33.4)
Galactorrhea	1	0	2	2	45	3.07	(0.2, 50.6)
Prolactin, high	2	1	13	21	56	0.21	(0.03, 1.3)
Mastitis	1	0	10	1	10	0.33	(0.02, 7.3)
Akathisia	1	1	10	4	10	0.25	(0.03, 1.9)
Bradykinesia	1	0	2	1	45	5.11	(0.3, 100.6)
Dyskinesia	1	1	2	0	45	**46.0**	**(2.4, 905.6)**
Dystonia	1	0	2	1	45	5.11	(0.3, 100.6)
EPS (abnormal Barnes)	1	5	11	5	11	1.00	(0.4, 2.5)
EPS (abnormal SAS)	1	3	11	6	11	0.50	(0.2, 1.5)
Postural hypotension	1	5	11	4	11	1.25	(0.5, 3.5)
Sedation	3	8	23	12	66	0.99	(0.6, 1.8)
Sleepiness	1	0	2	9	45	0.81	(0.06, 10.8)
Transaminase, high	1	0	2	0	45	NC	NC
Hepatic volume, increased	1	0	2	0	45	NC	NC
Abnormal liver enzymes	1	1	11	1	11	1.00	(0.07, 14.1)
Agitation	1	1	10	1	10	1.00	(0.07, 13.9)
Irritability	1	0	2	5	45	1.39	(0.1, 19.7)
Skin rash	1	0	2	1	45	5.11	(0.3, 100.6)

Dose comparisons: Second generation antipsychotics: Dichotomous outcomes

Adverse Event	No. studies	Events (Drug 1)	N (Drug 1)	Events (Drug 2)	N (Drug 2)	Relative risk	95% CI
Aripiprazole low dose (Drug 1) versus Aripiprazole high dose (Drug 2)							
Total AE	3	126	158	127	159	1.00	(0.9, 1.1)
SAE	4	11	258	6	261	1.85	(0.7, 4.9)
WAE	3	16	250	15	255	1.09	(0.6, 2.2)
Mortality	4	0	258	0	261	NC	NC
Weight gain	2	28	151	25	151	1.09	(0.7, 1.7)
Standardized weight>95th percentile	1	21	75	24	73	0.85	(0.5, 1.4)
Cholesterol, elevated	2	27	117	28	119	0.98	(0.6, 1.6)
Triglycerides, elevated	2	28	117	28	119	1.02	(0.6, 1.6)
HDL, decrease	2	11	117	11	119	1.02	(0.5, 2.3)
Glucose, elevated	3	3	203	3	197	0.97	(0.2, 4.8)
Prolactin, elevated	2	55	185	59	181	0.91	(0.7, 1.2)
EPS	3	27	250	55	255	**0.50**	**(0.3, 0.8)**
Akathisia	3	15	250	24	255	0.64	(0.3, 1.2)
Dystonia	3	5	206	9	207	0.56	(0.2, 1.6)
Dyskinesia	2	3	198	2	201	1.52	(0.3, 9.0)
Parkinsonism	2	29	198	60	201	**0.49**	**(0.3, 0.7)**
EPS residual event	2	1	198	2	201	0.51	(0.05, 5.6)
Abnormal QTc	1	4	98	2	99	2.02	(0.4, 10.8)
Abnormal ECG	1	0	52	0	54	NC	NC
Somnolence	4	35	258	54	261	**0.66**	**(0.4, 1.0)**
Fatigue	3	15	158	19	159	0.79	(0.4, 1.5)
Sedation	2	9	60	15	60	0.60	(0.3, 1.3)
Seizure	1	0	52	0	54	NC	NC
Agitation	1	4	100	2	102	2.04	(0.4, 10.9)
Rash	1	0	52	1	54	0.35	(0.01, 8.3)
Paliperidone low dose (Drug 1) versus Paliperidone high dose (Drug 2)							
Total AE	1	56	102	36	48	**0.73**	**(0.6, 0.9)**
WAE	1	2	102	1	48	0.94	(0.09, 10.1)
Mortality	1	0	102	0	48	NC	NC
Weight–gain ≥7%	1	9	102	6	48	0.71	(0.3, 1.9)
Insulin resistance, worsening	1	0	102	0	48	NC	NC
Glucose abnormalities	1	0	102	0	48	NC	NC
Cardiac arrhythmias or proarrhythmic potential	1	0	102	0	48	NC	NC

AE = adverse event; CI = confidence interval; ECG = electrocardiogram; EPS = extrapyramidal symptom; HDL = high density lipoprotein; N = number; NC = not calculated; SAE = serious adverse event; SE = side effect; T4 = thyroxine; TSH = thyroid stimulating hormone; WAE = withdrawal due to adverse event

Dose comparisons: Second generation antipsychotics: Dichotomous outcomes (continued)

Adverse Event	No. studies	Events (Drug 1)	N (Drug 1)	Events (Drug 2)	N (Drug 2)	Relative risk	95% CI
Paliperidone low dose (Drug 1) versus Paliperidone high dose (Drug 2) (continued)							
Orthostatic hypotension	1	0	102	1	48	0.16	(0.01, 3.8)
QTcLD change 30<x <60 msec	1	3	102	1	48	1.41	(0.2, 13.2)
Seizures	1	0	102	0	48	NC	NC
Neuroleptic malignant syndrome	1	0	102	0	48	NC	NC
Quetiapine low dose (Drug 1) versus Quetiapine high dose (Drug 2)							
Total AE	1	58	73	55	74	1.07	(0.9, 1.3)
SAE	1	4	73	5	74	0.81	(0.2, 2.9)
WAE	2	6	142	10	146	0.31	(0.09, 1.1)
Mortality	1	0	73	0	74	NC	NC
Weight–gain ≥7%	1	17	73	13	74	1.33	(0.7, 2.5)
Triglyceride, high	1	5	73	1	74	5.07	(0.6, 42.3)
Sexual SE	1	9	62	12	64	0.77	(0.4, 1.7)
Prolactin, high	1	1	73	3	74	0.34	(0.04, 3.2)
EPS	1	9	73	10	74	0.91	(0.4, 2.1)
Severe EPS	1	0	73	1	74	0.34	(0.01, 8.2)
Hypotension	1	37	62	45	64	0.85	(0.7, 1.1)
Tachycardia	1	4	73	6	74	0.68	(0.2, 2.3)
Sedation	2	35	135	47	138	0.76	(0.5, 1.1)
Somnolence/ increased sleep	2	58	121	53	111	1.00	(0.8, 1.3)
Fatigue	1	4	73	4	74	1.01	(0.3, 3.9)
TSH, high	1	3	73	0	74	7.09	(0.4, 135.0)
Hypothyroidism	1	0	73	0	74	NC	NC
Free T4, low	1	0	73	2	74	0.20	(0.01, 4.2)
Total T4, low	1	2	73	3	74	0.68	(0.1, 3.9)
Agitation	1	6	73	6	74	1.01	(0.3, 3.0)
Anxiety	1	4	73	3	74	1.35	(0.3, 5.8)
Irritability	1	2	73	4	74	0.51	(0.1, 2.7)
Risperidone low dose (Drug 1) versus Risperidone high dose (Drug 2)							
Total AE	2	45	50	58	61	0.95	(0.9, 1.1)
SAE	2	7	182	10	186	0.72	(0.3, 1.8)
WAE	2	9	182	15	186	0.61	(0.3, 1.4)
Mortality	2	0	182	0	186	NC	NC
Weight gain	2	8	182	24	186	**0.34**	**(0.2, 0.7)**
Glucose-related AE	2	0	182	0	186	NC	NC
Amenorrhea	2	0	182	1	186	0.34	(0.01, 8.3)
Breast enlargement	1	0	50	0	61	NC	NC

Dose comparisons: Second generation antipsychotics: Dichotomous outcomes (continued)

Adverse Event	No. studies	Events (Drug 1)	N (Drug 1)	Events (Drug 2)	N (Drug 2)	Relative risk	95% CI
Risperidone low dose (Drug 1) versus Risperidone high dose (Drug 2) (continued)							
Breast pain	2	0	182	1	186	0.34	(0.01, 8.3)
Ejaculation disorder	1	1	50	0	61	3.65	(0.2, 87.6)
Galactorrhea	1	2	182	6	186	0.34	(0.07, 1.7)
Gynaecomastia	1	1	132	0	125	2.84	(0.1, 69.1)
Prolactin-related AE	1	2	50	3	61	0.81	(0.1, 4.7)
Prolactin, elevated	1	55	132	70	125	**0.74**	**(0.6, 1.0)**
EPS-related AE	2	17	182	56	186	**0.31**	**(0.2, 0.5)**
Dyskinesia	1	2	132	7	125	0.27	(0.06, 1.3)
Dystonia	1	8	132	23	125	**0.33**	**(0.2, 0.7)**
Hyperkinesia / akathisia	1	2	132	11	125	**0.17**	**(0.04, 0.8)**
Tardive dyskinesia	1	0	50	0	61	NC	NC
Tachycardia	1	4	132	7	125	0.54	(0.2, 1.8)
QTc prolongation	1	0	132	1	125	0.32	(0.01, 7.7)
Somnolence	2	32	182	67	186	**0.49**	**(0.3, 0.7)**
Sedation	1	10	50	14	61	0.87	(0.4, 1.8)
Fatigue	1	9	50	18	61	0.61	(0.3, 1.2)
Agitation	1	13	182	12	186	1.11	(0.5, 2.4)
Rash	1	0	50	4	61	0.14	(0.01, 2.5)
Ziprasidone low dose (Drug 1) versus Ziprasidone high dose (Drug 2)							
SAE	1	0	23	2	40	0.34	(0.02, 6.8)
WAE	1	4	23	19	40	**0.37**	**(0.1, 1.0)**
Weight–gain ≥7%	1	10	22	10	34	1.55	(0.8, 3.1)
Glucose, elevated	1	0	23	0	40	NC	NC
Prolactin, elevated	1	2	23	2	40	1.74	(0.3, 11.5)
Akathisia	1	0	22	2	34	0.30	(0.02, 6.3)
Dystonia	1	1	22	2	34	0.77	(0.07, 8.0)
EPS	1	0	22	1	34	0.51	(0.02, 11.9)
QTc elevated	1	0	23	0	40	NC	NC
Sedation	1	5	22	12	34	0.64	(0.3, 1.6)
Somnolence	1	8	22	9	34	1.37	(0.6, 3.0)
Fatigue	1	4	22	4	34	1.55	(0.4, 5.6)
Mania exacerbation	1	0	23	1	40	0.57	(0.02, 13.4)

Second generation antipsychotics versus second generation antipsychotics: Continuous outcomes

Adverse Event	No. studies	Mean (Drug 1)	SD (Drug 1)	N (Drug 1)	Mean (Drug 2)	SD (Drug 2)	N (Drug 2)	Mean difference	95% CI
Aripiprazole (Drug 1) versus Olanzapine (Drug 2)									
Weight (kg)	1	4.44	2.57	47	8.54	4.25	52	**-4.1**	**(-5.5, -2.7)**
Weight, % change from baseline	1	8.14	4.41	47	15.2	7.21	52	**-7.06**	**(-9.4, -4.7)**
Fat mass (kg)	1	2.43	2.15	47	4.12	3.05	52	**-1.69**	**(-2.7, -0.67)**
BMI	1	1.67	1.08	47	3.01	1.51	52	**-1.34**	**(-1.9, -0.8)**
Waist circumference (cm)	1	5.40	8.85	47	8.55	4.12	52	**-3.15**	**(-5.9, -0.4)**
Total cholesterol (mg/dL)	1	3.75	26.6	47	15.6	32.0	52	**-11.9**	**(-23.4, -0.3)**
LDL (mg/dL)	1	7.38	23.1	47	11.5	27	9.52	-4.1	(-14.2, 6.0)
HDL (mg/dL)	1	0.29	9.13	47	-1.27	9.31	52	1.56	(-2.1, 5.2)
Triglycerides (mg/dL)	1	-2.40	60.6	47	24.34	53.49	52	**-26.74**	**(-49.4, -4.1)**
Ratio of triglyderides to HDL (mg/dL)	1	-0.19	1.64	47	0.59	1.29	52	**-0.78**	**(-1.4, -0.2)**
Glucose (mg/dL)	1	0.54	11.9	47	3.14	9.01	52	-2.6	(-6.8, 1.6)
Insulin (µIU/mL)	1	2.61	16.4	47	2.71	8.42	52	-0.1	(-5.3, 5.1)
HOMA-IR	1	0.55	3.64	47	0.62	2.02	52	-0.07	(-1.3, 1.1)
Aripiprazole (Drug 1) versus Quetiapine (Drug 2)									
Weight (kg)	1	4.44	2.57	47	6.06	3.95	45	**-1.62**	**(-3.0, -0.3)**
Weight, % change from baseline	1	8.14	4.41	47	10.4	6.43	45	-2.28	(-4.5, 0.003)
Fat mass (kg)	1	2.43	2.15	47	2.82	2.77	45	-0.39	(-1.4, 0.6)
BMI	1	1.67	1.08	47	2.12	1.40	45	-0.45	(-1.0, 0.06)
Waist circumference (cm)	1	5.40	8.85	47	5.27	4.11	45	0.13	(-2.7, 2.9)
Total cholesterol (mg/dL)	1	3.75	26.6	47	9.05	29.6	45	-5.3	(-16.8, 6.2)
LDL (mg/dL)	1	7.38	23.1	47	3.88	24.8	45	3.5	(-6.3, 13.3)
HDL (mg/dL)	1	0.29	9.13	47	-1.47	12.3	45	1.76	(-2.7, 6.2)
Triglycerides (mg/dL)	1	-2.40	60.6	47	36.96	91.8	45	**-39.4**	**(-71.3, -7.4)**
Ratio of triglyderides to HDL (mg/dL)	1	-0.19	1.64	47	1.22	2.67	45	**-1.41**	**(-2.3, -0.5)**
Glucose (mg/dL)	1	0.54	11.9	47	2.64	11.3	45	-2.1	(-6.8, 2.6)
Insulin (µIU/mL)	1	2.61	16.4	47	1.08	13.3	45	1.53	(-4.6, 7.6)
HOMA-IR	1	0.55	3.64	47	0.35	3.15	45	0.2	(-1.2, 1.6)
Aripiprazole (Drug 1) versus Risperidone (Drug 2)									
Weight (kg)	1	4.44	2.57	47	5.34	3.50	168	-0.9	(-1.8, 0.01)

AIMS = abnormal involuntary movement scale; ALT = alanine transaminase; AST = aspartate aminotransferase; BMI = body mass index; CI = confidence interval; DBP = diastolic blood pressure; ERES = extrapyramidal symptom rating scale; EPS = extrapyramidal symptom; FT4 = free thyroxine; HbA1c = haemoglobin A1c; HDL = high density lipoproteins; HOMA-IR = homeostasis model assessment of insulin resistance; LDL = low density lipoproteins; N = number; NA = not applicable; SAS = Simpson Angus Rating Scale; SBP = supine blood pressure; TSH = thyroid stimulating hormone; WBC = white blood cell

Second generation antipsychotics versus second generation antipsychotics: Continuous outcomes (continued)

Adverse Event	No. studies	Mean (Drug 1)	SD (Drug 1)	N (Drug 1)	Mean (Drug 2)	SD (Drug 2)	N (Drug 2)	Mean difference	95% CI
Aripiprazole (Drug 1) versus Risperidone (Drug 2) (continued)									
Weight, % change from baseline	1	8.14	4.41	47	10.4	6.35	168	**-2.26**	**(-3.9, -0.7)**
Fat mass (kg)	1	2.43	2.15	47	2.45	2.54	168	-0.02	(-0.8, 0.7)
BMI	1	1.67	1.08	47	1.92	1.32	168	-0.25	(-0.6, 0.1)
Waist circumference (cm)	1	5.40	8.84	47	5.10	4.03	168	0.30	(-2.3, 2.9)
Total cholesterol (mg/dL)	1	3.75	26.6	47	3.46	32.4	168	0.29	(-8.8, 9.3)
LDL (mg/dL)	1	7.38	23.1	47	0.21	28.8	168	7.17	(-0.7, 15.1)
HDL (mg/dL)	1	0.29	9.13	47	0.33	10.5	168	-0.04	(-3.1, 3.1)
Triglycerides (mg/dL)	1	-2.40	06.6	47	9.74	61.4	168	-12.1	(-31.8, 7.5)
Ratio of triglyderides to HDL (mg/dL)	1	-0.19	1.64	47	0.20	1.32	168	-0.39	(-0.9, 0.1)
Glucose (mg/dL)	1	0.54	11.9	47	1.14	13.1	168	-0.6	(-4.5, 3.3)
Insulin (µIU/mL)	1	2.61	16.4	47	0.69	10.3	168	1.92	(-3.0, 6.7)
HOMA-IR	1	0.55	3.64	47	0.20	2.31	168	0.35	(-0.8, 1.5)
Clozapine (Drug 1) versus Olanzapine (Drug 2)									
Weight (kg)	4	NA	NA	55	NA	NA	47	-2.06	(-6.6, 2.5)
BMI	3	NA	NA	40	NA	NA	40	-0.74	(-2.3, 0.84)
Cholesterol	1	141.9	55.5	13	170.8	38.2	17	28.9	(-6.3, 64.1)
Triglycerides	1	154.9	65.9	14	14.5	72.0	18	14.4	(-33.5, 62.4)
Glucose	1	94.2	10.9	14	93.3	15.1	18	0.9	(-8.1, 9.9)
Prolactin (ng/mL)	2	NA	NA	29	NA	NA	25	**-10.8**	**(-16.7, -4.8)**
Clozapine (Drug 1) versus Risperidone (Drug 2)									
Weight (kg)	1	9.5	10.4	15	7.2	5.3	10	2.3	(-3.9, 8.5)
BMI	1	2.9	3.5	15	1.9	1.3	10	1.0	(-1.0, 3.0)
Olanzapine ODT (Drug 1) versus Olanzapine SOT (Drug 2)									
Weight (kg)	1	3.0	2.1	16	8.9	5.1	10	**-5.9**	**(-9.2, -2.6)**
BMI	1	1.1	0.8	16	1.9	0.6	10	**-0.8**	**(-1.3, -0.3)**
Olanzapine (Drug 1) versus Quetiapine (Drug 2)									
Weight (kg)	3	NA	NA	98	NA	NA	93	**6.79**	**(1.4, 12.2)**
BMI	3	NA	NA	98	NA	NA	93	**2.32**	**(0.5, 4.2)**
Fat mass (kg)	1	4.12	3.05	52	2.82	2.77	45	**1.3**	**(0.1, 2.5)**

Second generation antipsychotics versus second generation antipsychotics: Continuous outcomes (continued)

Adverse Event	No. studies	Mean (Drug 1)	SD (Drug 1)	N (Drug 1)	Mean (Drug 2)	SD (Drug 2)	N (Drug 2)	Mean difference	95% CI
Olanzapine (Drug 1) versus Quetiapine (Drug 2) (continued)									
Waist circumference (cm)	1	8.55	4.12	52	5.27	4.11	45	**3.28**	**(1.6, 4.9)**
Ratio of triglycerides to HDL (mg/dL)	1	0.59	1.29	52	1.22	2.67	45	-0.63	(-1.5, 0.2)
Total cholesterol (mg/dL)	2	NA	NA	72	NA	NA	69	3.11	(-7.1, 13.3)
LDL (mg/dL)	2	NA	NA	72	NA	NA	69	5.31	(-2.9, 13.6)
HDL (mg/dL)	2	NA	NA	72	NA	NA	69	-0.25	(-4.1, 3.6)
Triglycerides (mg/dL)	2	NA	NA	72	NA	NA	69	-8.04	(-34.7, 18.6)
Glucose (mg/dL)	2	NA	NA	72	NA	NA	69	0.93	(-4.5, 4.3)
Insulin (µIU/mL)	1	2.71	8.43	52	1.08	13.26	45	1.51	(-2.3, 5.3)
HOMA-IR	1	0.62	2.02	52	0.35	3.15	45	0.27	(-0.8, 1.3)
HbA1c	1	0.2	0.8	20	0.9	1.6	24	-0.7	(-1.4, 0.03)
EPS (AIMS)	1	0.6	1.1	10	0	0	10	0.6	(-0.08, 1.3)
EPS (SAS)	1	0.2	0.41	10	0.5	0.85	10	-0.3	(-0.9, 0.3)
SBP (mmHg)	1	7.4	11.0	20	5.6	31.6	24	1.8	(-11.7, 15.3)
DBP (mmHg)	1	2.0	8.3	20	0.4	12.1	24	1.6	(-4.5, 7.7)
TSH (mIU/L)	1	0.6	2.0	20	0.9	1.2	24	-0.3	(-1.3, 0.7)
FT4 (ng/dL)	1	-0.10	0.34	20	-0.21	0.36	24	0.11	(-0.1, 0.3)
Olanzapine (Drug 1) versus Risperidone (Drug 2)									
Weight (kg)	10	NA	NA	226	NA	NA	353	**2.35**	**(1.3, 3.4)**
Weight–% change	3	NA	NA	93	NA	NA	210	**5.02**	**(3.5, 6.6)**
Fat mass	1	4.12	3.05	52	2.45	2.55	168	**1.67**	**(0.8, 2.6)**
BMI	7	NA	NA	175	NA	NA	312	**0.95**	**(0.7, 1.2)**
BMI percentile change	2	NA	NA	87	NA	NA	209	**5.93**	**(1.9, 9.9)**
Waist circumference (cm)	1	8.55	4.12	52	5.10	4.03	168	**3.45**	**(2.2, 4.7)**
Total cholesterol (mg/dL)	4	NA	NA	100	NA	NA	227	**10.2**	**(3.1, 17.2)**
LDL (mg/dL)	5	NA	NA	116	NA	NA	246	5.92	(-1.6, 13.4)
HDL (mg/dL)	5	NA	NA	116	NA	NA	246	-2.5	(-6.3, 1.3)
Triglycerides (mg/dL)	5	NA	NA	116	NA	NA	246	**17.3**	**(3.5, 31.1)**
Ratio of triglycerides to HDL (mg/dL)	1	0.59	1.29	52	0.20	1.32	168	0.39	(-0.01, 0.8)

Second generation antipsychotics versus second generation antipsychotics: Continuous outcomes (continued)

Adverse Event	No. studies	Mean (Drug 1)	SD (Drug 1)	N (Drug 1)	Mean (Drug 2)	SD (Drug 2)	N (Drug 2)	Mean difference	95% CI
Olanzapine (Drug 1) versus Risperidone (Drug 2) (continued)									
Glucose (mg/dL)	5	NA	NA	116	NA	NA	246	3.8	(-0.94, 8.6)
Insulin (mU/L)	2	NA	NA	72	NA	NA	197	7.46	(-7.5, 22.4)
HOMA-IR	2	NA	NA	62	NA	NA	186	0.56	(-0.04, 1.2)
HbA1c	2	NA	NA	33	NA	NA	43	-0.02	(-0.23, 0.19)
Prolactin (ng/dL)	3	NA	NA	66	NA	NA	76	**-18.7**	**(-30.2, -7.2)**
EPS (AIMS)	1	0.6	1.1	10	0	0	10	0.6	(-0.08, 1.3)
EPS (SAS)	3	NA	NA	61	NA	NA	70	-0.40	(-1.1, 0.3)
EPS (Barnes), change	1	0.2	2.1	35	0.4	2.4	41	-0.2	(-1.2, 0.8)
Parkinsonism	1	2.9	3.6	11	2.9	4.1	11	0	(-3.2, 3.2)
DBP (mmHg)	3	NA	NA	48	NA	NA	59	0.28	(-3.9, 4.4)
SBP (mmHg)	3	NA	NA	48	NA	NA	59	1.3	(-4.2, 6.8)
QTc (ms)	2	NA	NA	51	NA	NA	60	7.1	(-2.9, 17.0)
Pulse	2	NA	NA	28	NA	NA	37	1.01	(-5.7, 7.7)
ALT (U/L)	2	NA	NA	51	NA	NA	60	**12.4**	**(3.2, 21.5)**
AST (U/L)	2	NA	NA	51	NA	NA	60	**7.17**	**(3.5, 10.8)**
WBC (U/L)	1	6.3	1.7	16	6.3	1.5	19	0	(-1.1, 1.1)
FT4 (ng/dL)	1	-0.10	0.34	20	-0.11	0.22	22	0.01	(-0.2, 0.2)
TSH (mIU/L)	1	0.6	2.0	20	0.0	1.3	22	0.6	(-0.4, 1.6)
Quetiapine (Drug 1) versus Risperidone (Drug 2)									
Weight (kg)	2	NA	NA	69	NA	NA	190	-0.49	(-3.6, 2.6)
Weight–% change from baseline	1	10.42	6.43	45	10.37	6.35	168	0.05	(-2.1, 2.2)
Fat mass (kg)	1	2.82	2.77	45	2.45	2.55	168	0.37	(-0.5, 1.3)
BMI	2	NA	NA	69	NA	NA	190	0.13	(-0.3, 0.55)
Waist circumference	1	5.27	4.11	45	5.10	4.03	168	0.17	(-1.2, 1.5)
Total cholesterol (mg/dL)	2	NA	NA	69	NA	NA	190	9.14	(-0.7, 19.0)
LDL (mg/dL)	2	NA	NA	69	NA	NA	190	5.01	(-1.9, 11.9)
HDL (mg/dL)	2	NA	NA	69	NA	NA	190	2.34	(-6.5, 11.1)
Triglycerides (mg/dL)	2	NA	NA	69	NA	NA	190	16.7	(-9.4, 42.8)
Ratio of triglycerides to HDL (mg/dL)	1	1.22	2.67	45	0.20	1.32	168	**1.02**	**(0.2, 1.8)**
Glucose (mg/dL)	2	NA	NA	69	NA	NA	190	1.24	(-2.0, 4.5)
Insulin (µIU/mL)	1	1.08	13.26	45	0.69	10.25	168	0.39	(-3.8, 4.6)
HOMA-IR	1	0.35	3.15	45	0.20	2.31	168	0.15	(-0.8, 1.1)
HbA1c	1	0.9	1.6	24	0.3	0.8	22	0.6	(-0.1, 1.3)
AIMS, endpoint	1	0	0	10	0	0	10	NC	NC
SAS, endpoint	1	0.5	0.85	10	1	1.89	10	-0.5	(-1.8, 0.8)

Second generation antipsychotics versus second generation antipsychotics: Continuous outcomes (continued)

Adverse Event	No. studies	Mean (Drug 1)	SD (Drug 1)	N (Drug 1)	Mean (Drug 2)	SD (Drug 2)	N (Drug 2)	Mean difference	95% CI
Quetiapine (Drug 1) versus Risperidone (Drug 2) (continued)									
SBP (mmHg)	1	5.6	31.6	24	1.3	25.0	22	4.3	(-12.1, 20.7)
DBP (mmHg)	1	0.4	12.1	24	5.5	12.7	22	-5.1	(-12.3, 2.1)
TSH (mIU/L)	1	0.9	1.2	24	0.0	1.3	22	**0.9**	**(0.2, 1.6)**
FT4 (ng/dL)	1	-0.21	0.36	24	-0.11	0.22	22	-0.1	(-0.3, 0.07)

Dosing comparisons: Second generation antipsychotics: Continuous outcomes

Adverse Event	No. studies	Mean (Drug 1)	SD (Drug 1)	N (Drug 1)	Mean (Drug 2)	SD (Drug 2)	N (Drug 2)	Mean difference	95% CI
Aripiprazole low dose (Drug 1) versus Aripiprazole high dose (Drug 2)									
Weight (kg)	4	NP	NP		NP	NP		NP	NP
BMI	3	NP	NP		NP	NP		NP	NP
Total cholesterol (mg/dL)	1	-7.43	27.99	98	-5.01	23.28	95	-2.42	(-9.7, 4.8)
Triglycerides (mg/dL)	1	-4.53	6.99	47	-0.73	51.85	40	-3.8	(-25.1, 17.5)
HDL (mg/dL)	1	0.13	6.99	47	0.05	7.92	40	0.08	(-3.1, 3.3)
Glucose (mg/dL)	1	2.10	12.65	62	-0.98	10.57	55	3.08	(-1.1, 7.3)
Prolactin (ng/mL)	3	NP	NP		NP	NP		NP	NP
EPS (AIMS)	1	-0.2	NR	52	-0.2	NR	54	0	NC
EPS (Barnes)	1	0.0	NR	52	0.0	NR	54	0	NC
EPS (SAS)	2	NP	NP		NP	NP		NP	NP
QTc (msec)	2	NP	NP		NP	NP		NP	NP
Quetiapine low dose (Drug 1) versus Quetiapine high dose (Drug 2)									
UKU total AE, endpoint	1	7.8	5.3	46	9.0	7.1	45	-1.20	(-3.8, 1.4)
Weight	2	NP	NP		NP	NP		NP	NP
Total cholesterol (mg/dL)	1	7.82	NR	73	7.42	NR	74	0.4	NC
LDL (mg/dL)	1	8.66	NR	73	4.82	NR	74	3.84	NC
Triglyceride (mg/dL)	1	9.66	NR	73	15.58	NR	74	4.84	NC
UKU neurologic total, endpoint	1	0.2	0.6	46	0.6	1.4	45	-0.4	(-0.8, 0.04)
Pulse, supine	1	6.0	NR	73	3.9	NR	74	NC	NC
ECG heart rate	1	3.78	NR	73	11.16	NR	74	-7.38	NC
Free T4	1	-0.15	NR	73	-0.28	NR	74	0.13	NC
Total T4	1	-1.44	NR	73	-2.51	NR	74	1.07	NC
UKU psychic total, endpoint	1	5.8	4.3	46	5.8	4.2	45	0	(-1.8, 1.8)
Risperidone low dose (Drug 1) versus Risperidone high dose (Drug 2)									
Weight (kg)	2	NP	NP		NP	NP		NP	NP
BMI (kg/m^2)	1	0.7	0.9	50	0.5	0.9	60	0.2	(-0.1, 0.5)
Cholesterol (mmol/L)	1	0.1	0.7	50	0.0	0.6	61	**0.1**	**(-0.2, 0.4)**
Triglycerides (mmol/L)	1	0.3	0.8	50	-0.1	0.5	61	**0.4**	**(0.2, 0.7)**
Glucose (mmol/L)	1	0.3	0.5	50	0.2	0.9	61	**0.1**	**(-0.2, 0.4)**
Prolactin (ug/L)- males	1	32.0	22.5	24	49.6	23.0	20	**-17.6**	**(-31.1, -4.1)**
Prolactin (ug/L)- females	1	50.0	45.6	21	68.3	49.1	33	-18.3	(-44.0, 7.4)
EPS (AIMS)	1	-0.02	0.43	49	-0.08	0.59	60	**0.06**	**(-0.1, 0.3)**
EPS (Barnes)	1	1.10	2.49	49	0.4	0.64	60	0.70	(-0.02, 1.4)
EPS (SAS)	1	0.03	0.11	49	0.10	0.32	59	**-0.07**	**(-0.2, 0.02)**

AE = adverse event; AIMS = abnormal involuntary movement scale; BMI = body mass index; CI = confidence interval; EPS = extrapyramidal symptom; T4 = free thyroxine; HDL = high density lipoprotein; LDL = low density lipoproteins; N = number; NP = not pooled; SAS = Simpson Angus Rating Scale

Dosing comparisons: Second generation antipsychotics: Continuous outcomes (continued)

Adverse Event	No. studies	Mean (Drug 1)	SD (Drug 1)	N (Drug 1)	Mean (Drug 2)	SD (Drug 2)	N (Drug 2)	Mean difference	95% CI
Ziprasidone low dose (Drug 1) versus Ziprasidone high dose (Drug 2)									
Total cholesterol (mg/dL)	1	-3.5	21.0	22	-5.8	28.2	36	2.3	(-10.4, 15.0)
LDL (mg/dL)	1	-1.4	15.0	21	-0.5	23.9	36	-0.9	(-11.0, 9.2)
HDL (mg/dL)	1	0.5	9.9	22	-0.9	9.4	36	1.4	(-3.8, 6.6)
Triglycerides (mg/dL)	1	-9.4	60.6	22	-21.7	61.4	36	12.3	(-20.0, 44.6)
Glucose (mg/dL)	1	0.1	10.9	22	3.7	11.9	35	-3.6	(-13.2, 6.0)
QTc (msec)	1	1.3	24.9	11	11.2	16.8	15	-9.9	(-26.9, 7.1)

First generation antipsychotics versus placebo: Dichotomous outcomes

Adverse Event	No. studies	Events (Drug 1)	N (Drug 1)	Events (Drug 2)	N (Drug 2)	Relative risk	95% CI
Haloperidol (Drug 1) versus Placebo (Drug 2)							
Treatment-limiting SE	1	9	22	0	22	**19.00**	**(1.2, 307.6)**
WAE	1	2	22	0	22	5.00	(0.3, 98.5)
Weight gain	1	0	22	0	22	NC	NC
Akathisia or akinesia	1	2	22	0	22	5.00	(0.3, 98.5)
Dystonia	1	2	12	0	12	5.00	(0.3, 98.5)
Electrocardiovascular	1	0	22	0	22	NC	NC
Drowsiness	1	8	12	0	12	**17.00**	**(1.0, 277.6)**
Anxiety or depression	1	3	22	0	22	7.00	(0.4, 128.0)
Pimozide (Drug 1) versus Placebo (Drug 2)							
Treatment-limiting SE	1	3	22	0	22	7.00	(0.4, 128.0)
WAE	1	0	22	0	22	NC	NC
Weight gain	1	1	22	0	22	3.00	(0.1, 69.9)
Akathisia	1	0	22	0	22	NC	NC
Akinesia	1	0	22	0	22	NC	NC
Electrocardiovascular	1	0	22	0	22	NC	NC
Anxiety or depression	1	1	22	0	22	3.00	(0.1, 69.9)

CI = confidence interval; N = number; NC = not calculated; SE = side effect; WAE = withdrawal due to adverse event

First generation antipsychotics versus placebo: Continuous outcomes

Adverse Event	No. studies	Mean (Drug 1)	SD (Drug 1)	N (Drug 1)	Mean (Drug 2)	SD (Drug 2)	N (Drug 2)	Mean difference	95% CI
Haloperidol (Drug 1) versus Placebo (Drug 2)									
Prolactin	1	12.9	8.4	19	6.8	2.5	25	**6.1**	**(2.2, 10.0)**
EPS (AIMS)	1	0.3	1.1	22	0.2	0.7	22	0.1	(-0.5, 0.7)
EPS (ESRS)	1	4.1	6.9	26	1.4	3.0	26	2.7	(-0.2, 5.6)
Pimozide (Drug 1) versus Placebo (Drug 2)									
Prolactin	1	21.6	19.5	25	6.8	2.5	25	**14.8**	**(7.09, 22.5)**
EPS (AIMS)	1	0.4	1.1	22	0.2	0.7	22	0.2	(-0.4, 0.8)
EPS (ESRS)	1	2.0	3.0	26	1.4	3.0	26	0.6	(-1.0, 2.2)

AIMS = abnormal involuntary movement scale; CI = confidence interval ERES = extrapyramidal symptom rating scale; EPS = extrapyramidal symptom; N = number

Second generation antipsychotics versus placebo: Dichotomous outcomes

Adverse Event	No. studies	Events (Drug 1)	N (Drug 1)	Events (Drug 2)	N (Drug 2)	Relative risk	95% CI
Aripiprazole (Drug 1) versus Placebo (Drug 2)							
Total AE	2	292	362	94	148	**1.24**	**(1.1, 1.4)**
SAE	3	17	564	8	248	0.95	(0.22, 2.1)
WAE	3	39	564	8	248	1.88	(0.90, 4.0)
Mortality	3	0	564	0	248	NC	NC
Weight gain	2	62	361	6	149	**3.81**	**(1.2, 12.4)**
Standardized weight>95th percentile	1	45	148	13	65	1.52	(0.9, 2.6)
Weight loss	1	12	196	11	98	0.55	(0.3, 1.2)
Total cholesterol, elevated	1	55	130	11	65	**2.50**	**(1.4, 4.4)**
Triglycerides, elevated	2	58	295	17	116	1.53	(0.95, 2.5)
HDL, decrease	2	22	295	12	116	0.83	(0.44, 1.6)
Glucose, elevated	3	7	459	3	192	0.88	(0.23, 3.3)
Prolactin, low	2	72	366	59	181	1.31	(0.01, 281.6)
EPS	4	111	582	12	273	**4.16**	**(2.4, 7.2)**
Akathesia	4	43	582	14	273	1.27	(0.45, 3.6)
Dystonia	2	13	399	2	197	2.33	(0.59, 9.1)
Dyskinesia	2	5	417	0	222	2.95	(0.36, 24.4)
Parkinsonism	2	89	399	11	197	**3.89**	**(2.1, 7.1)**
EPS residual event	2	3	399	0	197	**3.98**	**(2.2, 7.1)**
Abnormal QTc	1	6	197	7	97	0.42	(0.2, 1.2)
Abnormal ECG	1	0	165	0	51	NC	NC
Somnolence	4	107	582	25	273	**2.67**	**(1.1, 6.5)**
Fatigue	3	62	380	18	173	2.64	(0.75, 9.3)
Sedation	1	39	165	3	51	**4.02**	**(1.3, 12.5)**
Seizures/ convulsions	1	0	165	1	51	0.10	(0.0, 2.5)
Constipation	1	2	18	10	25	0.28	(0.1, 1.1)
Agitation	1	4	202	5	100	0.40	(0.1, 1.4)
Anxiety	1	11	18	15	25	1.02	(0.6, 1.7)
Depression	1	9	18	14	25	0.89	(0.5, 1.6)
Skin rash	2	4	183	2	76	0.83	(0.2, 4.4)
Itching	1	6	18	7	25	1.19	(0.5, 3.0)
Dry skin	1	3	18	4	25	1.04	(0.3, 4.1)

AE = adverse event; AIMS = abnormal involuntary movement scale; ALT = alanine transaminase; AST = aspartate aminotransferase; BMI = body mass index; CI = confidence interval; DBP = diastolic blood pressure; ECG = electrocardiogram; ERES = extrapyramidal symptom rating scale; EPS = extrapyramidal symptom; HDL = high density lipoprotein; LDL = low density lipoproteins; N = number; NA = not applicable; NC = not calculated; SAE = severe adverse event; SAS = Simpson Angus Rating Scale; SBP = supine blood pressure; SE = side effect; WBC = white blood cell; WAE = withdrawal due to adverse event

Second generation antipsychotics versus placebo: Dichotomous outcomes (continued)

Adverse Event	No. studies	Events (Drug 1)	N (Drug 1)	Events (Drug 2)	N (Drug 2)	Relative risk	95% CI
Olanzapine (Drug 1) versus Placebo (Drug 2)							
SAE	1	3	107	0	54	3.56	(0.2, 67.8)
WAE	2	6	103	1	64	2.15	(0.61, 4.0)
Mortality	2	0	179	0	89	NC	NC
Weight gain	3	46	109	9	69	**3.63**	**(1.9, 6.8)**
Weight–gain ≥7%	4	99	215	8	122	**6.57**	**(2.1, 20.5)**
Triglycerides, abnormal/high (endpoint)	2	73	179	14	89	**2.42**	**(1.2, 4.9)**
Triglycerides, increase	1	15	65	0	30	14.56	(0.9, 235.6)
Cholesterol, abnormal	1	20	107	1	54	**10.1**	**(1.4, 73.2)**
Cholesterol, increase	1	16	75	1	34	**7.25**	**(1.0, 52.5)**
LDL, increase	1	16	74	6	34	1.23	(0.5, 2.9)
HDL, abnormal/ high	1	12	107	0	54	12.73	(0.8, 211.0)
HDL, decrease	1	6	51	5	32	0.75	(0.3, 2.3)
Glucose, abnormal	1	0	31	0	29	NC	NC
Glucose, increase	1	1	81	0	39	1.46	(0.06, 35.1)
Prolactin, high	2	108	179	7	89	**8.88**	**(1.5, 52.5)**
EPS	1	0	6	0	5	NC	NC
Sedation	2	15	78	3	40	2.91	(0.9, 9.1)
Somnolence	2	29	103	6	64	3.32	(0.9, 11.9)
Fatigue	1	9	31	1	29	**8.42**	**(1.1, 62.4)**
ALT high	1	36	107	1	54	**18.17**	**(2.6, 129.0)**
AST high	1	24	107	1	54	**12.11**	**(1.7, 87.2)**
WBC, decrease	1	1	107	0	54	1.53	(0.06, 36.9)
Constipation	1	3	6	0	5	6.00	(0.4, 94.4)
Abnormal thoughts	1	3	31	2	29	1.40	(0.3, 7.8)
Anxiety	1	5	31	1	29	4.68	(0.6, 37.7)
Bipolar exacerbation	1	2	107	0	54	2.55	(0.1, 52.1)
Schizophrenia	1	4	72	7	35	**0.28**	**(0.09, 0.9)**

Second generation antipsychotics versus placebo: Dichotomous outcomes (continued)

Adverse Event	No. studies	Events (Drug 1)	N (Drug 1)	Events (Drug 2)	N (Drug 2)	Relative risk	95% CI
Paliperidone (Drug 1) versus Placebo (Drug 2)							
Total AE	1	92	150	30	51	1.04	(0.8, 1.4)
SAE	1	4	150	1	51	1.36	(0.2, 11.9)
WAE	1	3	150	0	51	2.41	(0.1, 45.9)
Mortality	1	0	150	0	51	NC	NC
Weight–gain ≥7%	1	15	150	1	51	5.10	(0.7, 37.7)
Insulin resistance, worsening	1	0	150	0	51	NC	NC
Glucose abnormalities	1	0	150	0	51	NC	NC
Cardiac arrhythmias or proarrhythmic potential	1	0	150	0	51	NC	NC
Orthostatic hypotension	1	1	150	0	51	1.03	(0.04, 25.0)
QTcLD change 30<x <60 msec	1	4	150	2	51	0.68	(0.1, 3.6)
Seizures	1	0	150	0	51	NC	NC
Neuroleptic malignant syndrome	1	0	150	0	51	NC	NC
Quetiapine (Drug 1) versus Placebo (Drug 2)							
Total AE	1	113	147	45	75	**1.28**	**(1.0, 1.6)**
SAE	2	10	164	4	90	1.27	(0.4, 2.1)
WAE	4	15	188	3	115	2.49	(0.8, 7.6)
Mortality	1	0	147	0	75	NC	NC
Weight gain	1	3	9	1	10	3.33	(0.4, 26.6)
Weight–gain ≥7%	1	30	147	5	75	**3.06**	**(1.2, 7.6)**
Cholesterol, high	1	2	17	0	15	4.44	(0.2, 85.8)
LDL, high	1	2	17	0	15	4.44	(0.2, 85.8)
HDL, high	1	3	17	2	15	1.32	(0.3, 6.9)
Triglyceride, high	2	10	164	1	90	4.30	(0.7, 23.3)
Glucose, high	1	0	17	1	15	0.30	(0.01, 6.8)
Development of diabetes	1	0	17	0	15	NC	NC
Prolactin elevation	3	12	179	11	105	0.85	(0.5, 1.6)
Akathisia	1	1	9	0	10	3.30	(0.2, 72.1)
EPS	1	19	147	4	75	2.42	(0.9, 6.9)
Severe EPS	1	1	147	1	75	0.51	(0.03, 8.0)

Second generation antipsychotics versus placebo: Dichotomous outcomes (continued)

Adverse Event	No. studies	Events (Drug 1)	N (Drug 1)	Events (Drug 2)	N (Drug 2)	Relative risk	95% CI
Quetiapine (Drug 1) versus Placebo (Drug 2) (continued)							
Tachycardia	2	13	164	0	90	**8.24**	**(1.1, 62.0)**
Hypertension	1	2	17	0	15	4.44	(0.2, 85.8)
Orthostatic hypotension	1	8	32	7	30	1.01	(0.5, 2.1)
Sedation	4	36	188	22	115	1.38	(0.7, 4.0)
Somnolence	1	42	147	5	75	**4.29**	**(1.8, 10.4)**
Fatigue	1	8	147	3	75	1.36	(0.4, 5.0)
Liver function test, abnormal	1	0	17	0	15	NC	NC
TSH, high	1	3	147	0	75	3.59	(0.2, 68.7)
Hypothyroidism	1	0	147	0	75	NC	NC
Free T4, low	1	2	147	0	75	2.57	(0.1, 52.8)
Total T4, low	1	5	147	0	75	5.65	(0.3, 100.8)
Agitation	2	18	156	19	85	0.70	(0.5, 1.1)
Anxiety	2	13	156	12	85	0.89	(0.5, 1.5)
Irritability	2	13	156	8	85	1.99	(0.1, 30.0)
Treatment-emergent mania	1	0	17	0	15	NC	NC
Risperidone (Drug 1) versus Placebo (Drug 2)							
Total AE	9	352	463	244	411	**1.25**	**(1.0, 1.5)**
SAE	8	21	495	11	443	1.48	(0.7, 3.1)
WAE	8	22	486	12	436	1.29	(0.6, 2.6)
Mortality	2	0	122	0	70	NC	NC
Weight gain	6	38	435	26	379	1.49	(0.8, 3.0)
Weight–gain ≥7%	2	15	117	3	65	2.61	(0.9, 8.0)
Glucose-related AE	1	0	11	0	58	NC	NC
Amenorrhea	1	1	172	0	163	2.84	(0.1, 69.3)
Breast enlargement, pain, discharge	2	1	283	2	221	0.52	(0.02, 13.3)
Galactorrhea	2	0	104	0	115	NC	NC
Gynecomastia	1	3	172	0	163	6.64	(0.4, 127.5)

Second generation antipsychotics versus placebo: Dichotomous outcomes (continued)

Adverse Event	No. studies	Events (Drug 1)	N (Drug 1)	Events (Drug 2)	N (Drug 2)	Relative risk	95% CI
Risperidone (Drug 1) versus Placebo (Drug 2) (continued)							
Ejaculation disorder	1	1	111	0	58	1.58	(0.07, 38.2)
Prolactin-related AE	2	5	130	1	75	2.61	(0.3, 21.8)
Prolactin, elevated	2	12	93	11	102	1.76	(0.1, 28.7)
Akathisia	2	3	191	5	180	0.18	(0.01, 3.5)
Dyskinesia	5	9	114	6	115	1.27	(0.3, 5.2)
Dystonia	3	2	202	1	192	1.90	(0.2, 20.7)
EPS	8	42	431	12	380	**2.65**	**(1.4, 4.9)**
Hyperkinesia	1	1	40	0	39	2.93	(0.1, 69.7)
Oculogyric crisis	1	0	19	0	17	NC	NC
Parkinsonism	1	1	172	0	163	2.84	(0.1, 69.3)
Tardive dyskinesia	5	0	402	2	343	0.34	(0.04, 3.2)
QTc abnormality	2	0	108	0	120	NC	NC
QTc increase	1	3	53	2	57	1.61	(0.3, 9.3)
Change in cardiac conduction	1	0	49	1	52	0.35	(0.01, 8.5)
Tachycardia	2	11	89	1	90	**7.53**	**(1.4, 40.5)**
Sedation	5	64	206	16	163	**2.90**	**(1.5, 5.5)**
Somnolence	7	107	398	42	336	2.04	(0.8, 5.5)
Fatigue/Tiredness	6	80	444	24	385	**4.58**	**(1.5, 14.0)**
Transaminase, elevated	1	0	10	0	10	NC	NC
ALT, elevated	1	0	49	1	52	0.35	(0.01, 8.5)
AST, elevated	1	1	49	1	52	1.06	(0.07, 16.5)
Seizure	1	0	49	1	52	0.35	(0.01, 8.5)
Neuroleptic malignant syndrome	1	0	26	0	26	NC	NC
Constipation	3	20	100	7	102	**2.72**	**(1.3, 5.9)**
Agitation	3	17	161	12	110	1.02	(0.5, 2.0)
Aggression	2	8	78	6	78	1.30	(0.5, 3.4)
Anorexia	2	8	93	3	96	2.69	(0.7, 10.0)
Anxiety	1	12	49	10	51	1.25	(0.6, 2.6)
Emotional lability	1	9	38	5	39	1.85	(0.7, 5.0)
Personality disorder	1	3	53	4	57	0.81	(0.2, 3.4)
Rash	2	5	121	1	68	2.35	(0.4, 13.9)
Skin irritation	1	11	49	7	51	1.64	(0.7, 3.9)

Second generation antipsychotics versus placebo: Dichotomous outcomes (continued)

Adverse Event	No. studies	Events (Drug 1)	N (Drug 1)	Events (Drug 2)	N (Drug 2)	Relative risk	95% CI
Ziprasidone (Drug 1) versus Placebo (Drug 2)							
Total AE	3	295	358	113	190	**1.40**	**(1.2, 1.6)**
SAE	3	17	358	8	190	1.48	(0.3, 7.7)
WAE	3	42	358	23	190	0.95	(0.6, 1.5)
Mortality	2	0	342	0	178	NC	NC
Weight gain	2	4	342	1	178	1.31	(0.2, 9.9)
Weight loss	1	5	193	1	90	2.33	(0.3, 19.7)
Gynecomastia	1	1	16	0	12	2.29	(0.1, 51.9)
Prolactin, increase	1	5	16	0	12	8.41	(0.5, 138.8)
Akathisia	2	14	209	3	102	2.06	(0.7, 6.5)
Dystonia	1	1	149	0	88	1.78	(0.07, 43.2)
EPS	1	22	193	1	90	**10.26**	**(1.4, 74.9)**
QTc prolonged	2	3	342	0	178	2.06	(0.2, 18.5)
Sedation	2	60	165	9	99	3.22	(0.5, 19.4)
Somnolence	3	75	358	13	190	**2.98**	**(1.7, 5.2)**
Fatigue	2	37	342	10	178	**1.97**	**(1.0, 3.9)**
Liver function test abnormal	1	1	149	0	88	1.78	(0.1, 43.2)
ALT increase	1	1	193	1	90	0.47	(0.03, 7.4)
Aggression	2	1	342	3	178	0.24	(0.03, 1.6)
Anxiety	1	1	193	0	90	1.41	(0.06, 34.2)
Depression	1	2	193	0	90	2.35	(0.1, 48.4)
Irritability	1	1	193	0	90	1.41	(0.06, 34.2)
Dermatitis	1	0	193	1	90	0.16	(0.01, 3.8)

Second generation antipsychotics versus placebo: Continuous outcomes

Adverse Event	No. studies	Mean (Drug 1)	SD (Drug 1)	N (Drug 1)	Mean (Drug 2)	SD (Drug 2)	N (Drug 2)	Mean difference	95% CI
Aripiprazole (Drug 1) versus Placebo (Drug 2)									
Weight (kg)	4	NA	NA	527	NA	NA	271	**0.77**	**(0.40, 1.15)**
BMI	3	NA	NA	508	NA	NA	214	**0.23**	**(0.07, 0.4)**
Total cholesterol (mg/dL)	1	-7.63	NR	193	-10.38	24.08	96	4.17	NC
Triglycerides (mg/dL)	1	-2.78	NR	87	-6.51	53.82	45	3.9	NC
HDL (mg/dL)	1	0.09	NR	87	-6.09	20.23	45	6.18	NC
Glucose (mg/dL)	1	0.65	NR	117	-3.15	14.43	65	4.68	NC
Prolactin (ng/mL)	3	NA	NA	423	NA	NA	184	**-4.1**	**(-6.3, -1.8)**
EPS (AIMS)	1	-0.16	NR	165	0.2	NR	51	-0.36	NC
EPS (Barnes)	1	0.0	NR	165	0.2	NR	51	-0.2	NC
EPS (SAS)	2		NR	367		NR	151		NC
QTc (msec)	2	NA	NA	202	NA	NA	151	1.85	(-4.9, 8.6)
Olanzapine (Drug 1) versus Placebo (Drug 2)									
Weight (kg)	4	NA	NA	215	NA	NA	122	**4.60**	**(3.07, 6.13)**
BMI	2	NA	NA	179	NA	NA	88	**1.28**	**(0.96, 1.59)**
Triglycerides (mg/dL)	1	41.6	75.3	55	4.4	51.4	25	**37.2**	**(8.9, 65.5)**
Total cholesterol (mg/dL), change	2	NA	NA	162	NA	NA	79	2.93	(-4.5, 10.4)
LDL (mg/dL)	1	5.8	20.1	55	0.8	19.2	25	5	(-4.2, 14.2)
HDL (mg/dL)	1	-3.1	8.1	55	0.8	11.6	25	-3.9	(-8.9, 1.1)
Glucose (mg/dL)	2	NA	NA	162	NA	NA	79	1.73	(-2.1, 5.6)
Prolactin (ng/ml), change	2	NA	NA	162	NA	NA	79	**11.5**	**(8.8, 14.1)**
EPS (AIMS)	2	NA	NA	137	NA	NA	83	-0.07	(-0.29, 0.14)
EPS (Barnes)	2	NA	NA	137	NA	NA	83	-0.09	(-0.26, 0.09)
EPS (SAS)	2	NA	NA	137	NA	NA	83	0.05	(-0.12, 0.22)
QTc (msec)	2	NA	NA	170	NA	NA	83	-2.4	(-9.2, 4.4)
SBP, sitting	1	1.8	11.4	30	0.8	9.2	29	1.0	(-4.3, 6.3)
SBP, standing	1	2.9	13.1	30	4.7	11.9	29	-1.8	(-8.2, 4.6)
SBP, supine	1	3.61	10.4	107	-2.28	11.26	54	**5.89**	**(2.3, 9.5)**

AE= adverse event; AIMS = abnormal involuntary movement scale; ALT = alanine transaminase; AST = aspartate aminotransferase; BMI = body mass index; CI = confidence interval; DBP = diastolic blood pressure; ERES = extrapyramidal symptom rating scale; EPS = extrapyramidal symptom; GGT = gamma-glutamyl transpeptidase; HDL = high density lipoprotein; LDL = low density lipoproteins; N = number; NA = not applicable; NC = not calculated; SAS = Simpson Angus Rating Scale; SBP = supine blood pressure; WBC = white blood cell

Second generation antipsychotics versus placebo: Continuous outcomes (continued)

Adverse Event	No. studies	Mean (Drug 1)	SD (Drug 1)	N (Drug 1)	Mean (Drug 2)	SD (Drug 2)	N (Drug 2)	Mean difference	95% CI
Olanzapine (Drug 1) versus Placebo (Drug 2) (continued)									
DBP, sitting	1	-0.3	9.1	30	2.0	10.9	29	-2.3	(-7.4, 2.8)
DBP, standing	1	3.0	10.1	30	4.8	10.1	29	-1.8	(-7.0, 3.4)
Pulse, sitting	1	9.03	15.25	29	-0.24	14.98	29	**9.27**	**(1.5, 17.1)**
Pulse, standing	2	NA	NA	135	NA	NA	83	**9.52**	**(5.1, 14.0)**
Pulse, supine	1	9.51	14.53	107	-0.67	12.52	54	**10.18**	**(5.9, 14.5)**
ALT (U/L)	2	NA	NA	177	NA	NA	88	**22.5**	**(14.3, 30.7)**
AST (U/L)	2	NA	NA	177	NA	NA	88	**8.98**	**(5.2, 12.8)**
GGT (U/L)	1	7.0	22.9	70	-1.6	7.0	34	**8.6**	**(2.7, 14.5)**
Quetiapine (Drug 1) versus Placebo (Drug 2)									
Mean # AE/pt	1	6.1	NR	9	8.9	NR	10	-2.8	NC
Mean severity of AE	1	4.6	NR	9	3.4	NR	10	1.2	NC
Weight (kg)	4	NA	NA	188	NA	NA	115	**1.78**	**(1.10, 2.47)**
BMI	1	0.9	0.3	17	0.3	0.3	15	**0.6**	**(0.4, 0.8)**
Total cholesterol (mg/dL)	1	7.62	NR	147	-8.06	NR	75	15.68	NC
LDL (mg/dL)	1	6.74	NR	147	-3.89	NR	75	10.63	NC
Triglyceride (mg/dL)	2	NA	NA	164	NA	NA	90	**29.1**	**(7.27, 50.9)**
Prolactin (ng/mL)	3	NA	NA	42	NA	NA	40	1.30	(-1.4, 4.0)
EPS (Barnes)	1	0.1	0.3	15	-0.1	0.3	15	0.2	(-0.02, 0.4)
EPS (SAS)	1	-0.1	1.1	15	0	0.8	15	-0.1	(-0.8, 0.6)
SBP, standing	1	5	18	17	-8	16	15	**13**	**(1.2, 24.8)**
SBP, supine	1	6	9	17	-6	9	15	**12**	**(5.8, 18.3)**
DBP	1	9	11	17	-2	12	15	**11**	**(3.0, 19.0)**
Pulse, supine	1	4.95	NR	147	-1.4	NR	75	6.35	NC
Pulse, change	1	11	13	17	-3	11	15	**14**	**(5.68, 22.3)**
ECG heart rate	1	7.47	NR	147	-3.32	NR	75	10.79	NC
QTc interval (msec)	2	NA	NA	24	NA	NA	25	5.82	(-7.7, 19.4)
WBC (10^3/μL)	1	-2.1	0.7	15	-0.6	0.6	15	**-1.5**	**(-2.0, -1.0)**
Platelets (10^3/μL)	1	-63.4	4.2	15	-58.4	27.2	15	-5.0	(-18.9, 8.9)
TSH (mIU/L)	1	0.6	1.8	15	0.3	1.7	15	0.3	(-1.0, 1.6)
Free T4	1	-0.22	NR	147	0.01	NR	75	0.23	NC
Total T4	1	-1.98	NR	147	0.11	NR	75	2.09	NC
Risperidone (Drug 1) versus Placebo (Drug 2)									
Weight (kg)	12	NA	NA	556	NA	NA	501	**1.79**	**(1.48, 2.10)**

Second generation antipsychotics versus placebo: Continuous outcomes (continued)

Adverse Event	No. studies	Mean (Drug 1)	SD (Drug 1)	N (Drug 1)	Mean (Drug 2)	SD (Drug 2)	N (Drug 2)	Mean difference	95% CI
Risperidone (Drug 1) versus Placebo (Drug 2) (continued)									
BMI	5	NA	NA	397	NA	NA	343	**0.57**	**(0.38, 0.75)**
Total cholesterol (mmol/L)	1	0.05	NR	111	-0.2	0.4	58	0.25	NC
Triglycerides (mmol/L)	1	0.08	NR	111	-0.1	0.7	58	0.18	NC
Glucose (mmol/L)	1	0.25	NR	111	-0.1	0.5	58	0.35	NC
Prolactin (ng/mL)	7	NA	NA	405	NA	NA	412	**21.94**	**(8.91, 35.0)**
Bucco-linguo-masticatory score	1	0.0	NR	53	0.0	NR	57	NC	NC
EPS (AIMS)	2	NA	NA	158	NA	NA	109	-0.08	(-0.3, 0.14)
EPS (Barnes)	1	0.33	0.62	109	0.11	0.31	57	**0.22**	**(0.08, 0.4)**
EPS (ESRS)	2	NA	NA	108	NA	NA	120	-0.36	(-1.07, 0.35)
EPS (SAS)	2	NA	NA	157	NA	NA	109	**0.22**	**(0.11, 0.33)**
Parkinsonism	3	NA	NA	78	NA	NA	81	0.61	(-0.34, 1.55)
SBP	2	NA	NA	55	NA	NA	53	3.93	(-0.05, 7.9)
DBP	2	NA	NA	55	NA	NA	53	0.88	(-2.5, 4.3)
Pulse	4	NA	NA	114	NA	NA	117	**6.42**	**(3.5, 9.35)**
QTc, rate-corrected	1	0.40	0.18	19	0.39	0.23	17	0.01	(-0.1, 0.2)
ALT	1	5.2	NR	46	0.9	NR	43	4.3	NC
AST	1	-10.6	NR	-0.40	46	NR	43	-10.2	NC
WBC	1	-0.7	NR	46	-0.5	NR	43	-0.2	NC
Platelets	1	2.7	NR	46	4.1	NR	43	1.4	NC
Ziprasidone (Drug 1) versus Placebo (Drug 2)									
Weight (kg)	2	NA	NA	165	NA	NA	100	-0.10	(-0.61, 0.41)
Prolactin, endpoint	1	5.7	2.8	16	5.7	1.6	12	0	(-1.6, 1.6)