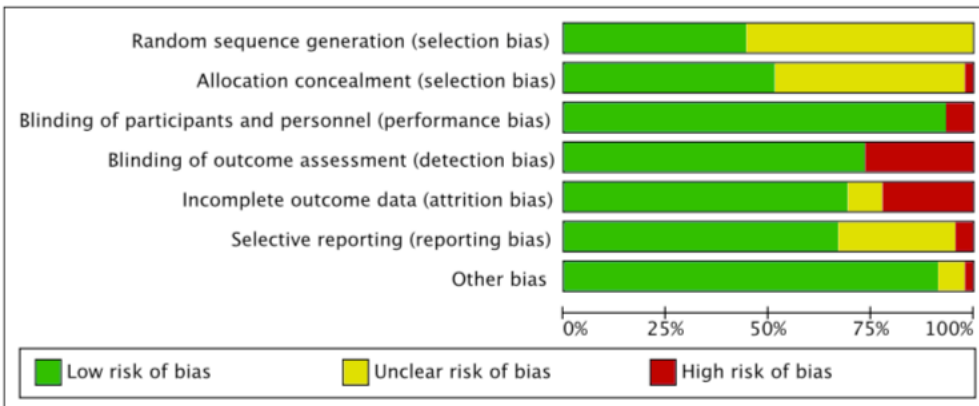Supplementary Figure 1: Risk of Bias Analysis Graph
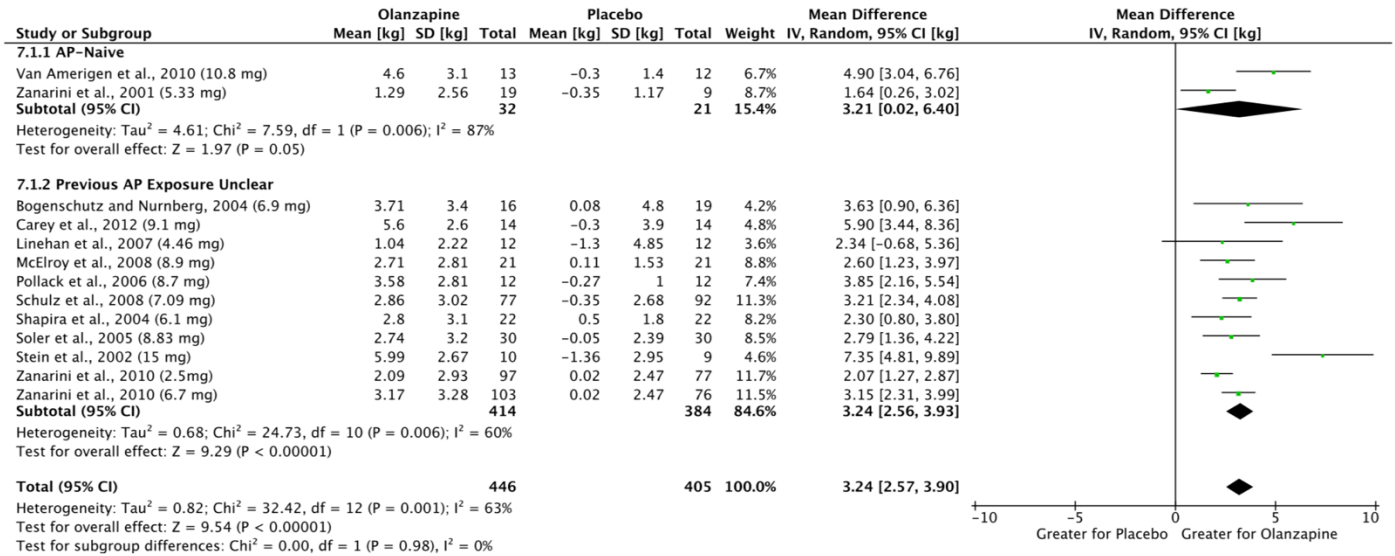

Risk of bias graph: review authors' judgements about each risk of bias item presented as percentages across all included studies.
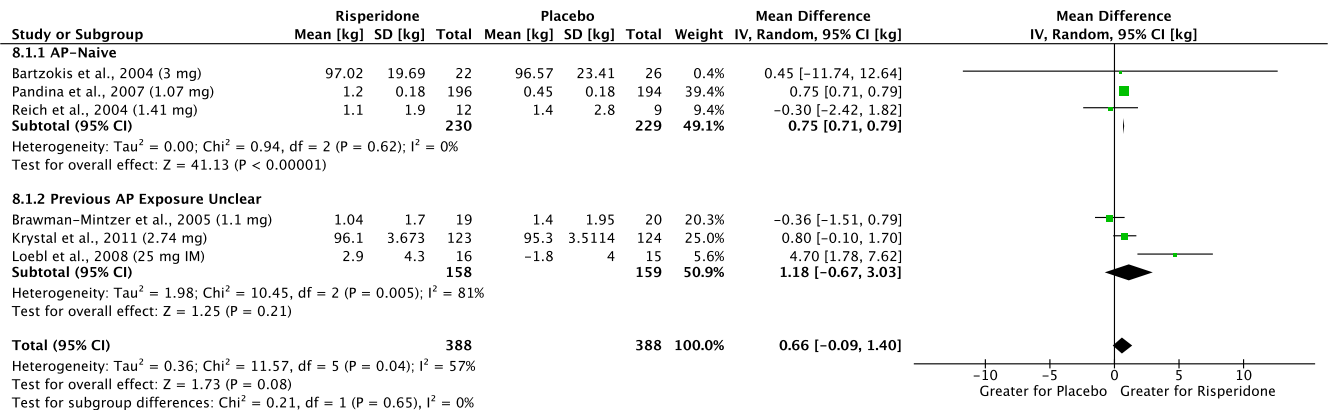
Supplementary Figure 2: Risk of Bias Analysis Summary

	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias
Atmaca et al., 2002 (91.1 mg)	?	?	–	+	+	+	?
Bandelow et al., 2010 (150 mg)	+	+	+	+	?	+	+
Bandelow et al., 2010 (50 mg)	+	+	+	+	?	+	+
Barnett et al., 2002 (9 mg)	?	?	+	+	+	?	+
Bartzokis et al., 2004 (3 mg)	?	?	+	+	+	?	+
Black et al, 2014 (300 mg)	?	+	+	+	–	+	+
Black et al., 2014 (150 mg)	?	+	+	+	–	+	+
Bogenschutz and Nurnberg, 2004 (6.9 mg)	?	?	+	+	–	+	+
Brawman–Mintzer et al., 2005 (1.1 mg)	?	+	+	–	+	+	+
Carey et al., 2012 (9.1 mg)	+	+	+	+	+	?	+
Denys et al., 2004 (175 mg)	?	?	+	+	+	?	+
Goddard et al., 2015 (150 mg – XR)	+	+	+	+	+	+	–
Guardia et al., 2004 (7.54 mg)	+	+	+	+	–	+	+
Hamilton et al., 2009 (6.8 mg)	?	+	+	+	?	?	+
Javdan et al., 2019 (100 mg)	+	+	+	+	+	+	+
Katzman et al., 2011 (162.8 mg – XR)	?	?	+	+	+	+	+
Khan et al., 2011 (150 mg)	+	?	+	–	+	+	+
Khan et al., 2011 (300mg)	+	?	+	–	+	+	+
Khan et al., 2011 (50 mg)	+	?	+	–	+	+	+
Khan et al., 2013 (300 mg – XR)	+	+	–	+	+	+	+
Krystal et al., 2011 (2.74 mg)	+	+	+	+	+	+	+
Linehan et al., 2007 (4.46 mg)	+	+	+	–	+	?	+
Loebl et al., 2008 (25 mg IM)	?	+	+	+	–	+	+
Lohoff et al., 2010 (50.24 mg)	?	+	+	+	+	?	+
Mariani et al., 2021 (200 mg)	+	+	+	+	+	+	+
McElroy et al., 2008 (8.9 mg)	?	+	+	+	+	+	+
Merideth et al., 2012 (150 mg – XR)	+	+	+	–	+	?	+
Merideth et al., 2012 (300 mg– XR)	+	+	+	–	+	?	+
Pandina et al., 2007 (1.07 mg)	+	+	+	+	+	+	+
Pollack et al., 2006 (8.7 mg)	?	?	+	+	+	?	+
Reich et al., 2004 (1.41 mg)	?	?	+	+	+	+	+
Sayyah et al., 2012 (10 mg)	?	+	+	+	+	?	+
Schulz et al., 2008 (7.09 mg)	+	?	+	–	–	+	+
Shapira et al., 2004 (6.1 mg)	?	?	+	+	+	?	?
Simon et al., 2008 (120.5 mg)	?	?	+	+	+	+	+
Soler et al., 2005 (8.83 mg)	?	?	+	–	+	?	+
Stein et al., 2002 (15 mg)	?	–	+	–	+	–	?
Storch et al., 2013 (4.94 mg)	+	+	+	+	+	+	+
Van Amerigen et al., 2010 (10.8 mg)	+	+	+	–	+	+	+
Vatsalya et al., 2016 (327.7 mg– XR)	?	?	+	+	?	+	+
Villarreal et al., 2016 (258 mg/d)	+	?	–	+	–	–	+
Vulink et al., 2009 (300 mg)	?	?	+	+	+	+	+
Zanarini et al., 2001 (5.33 mg)	?	?	+	–	–	+	+
Zanarini et al., 2010 (2.5mg)	?	?	+	+	–	+	+
Zanarini et al., 2010 (5–10 mg)	?	?	+	+	–	+	+

Study or Subgroup	Olanzapine Mean [kg]	SD [kg]	Total	Placebo Mean [kg]	SD [kg]	Total	Weight	Mean Difference IV, Random, 95% CI [kg]
7.1.1 AP-Naive								
Van Amerigen et al., 2010 (10.8 mg)	4.6	3.1	13	-0.3	1.4	12	6.7%	4.90 [3.04, 6.76]
Zanarini et al., 2001 (5.33 mg)	1.29	2.56	19	-0.35	1.17	9	8.7%	1.64 [0.26, 3.02]
Subtotal (95% CI)			32			21	15.4%	3.21 [0.02, 6.40]
Heterogeneity: Tau^2 = 4.61; Chi^2 = 7.59, df = 1 (P = 0.006); I^2 = 87%								
Test for overall effect: Z = 1.97 (P = 0.05)								
7.1.2 Previous AP Exposure Unclear								
Bogenschutz and Nurnberg, 2004 (6.9 mg)	3.71	3.4	16	0.08	4.8	19	4.2%	3.63 [0.90, 6.36]
Carey et al., 2012 (9.1 mg)	5.6	2.6	14	-0.3	3.9	14	4.8%	5.90 [3.44, 8.36]
Linehan et al., 2007 (4.46 mg)	1.04	2.22	12	-1.3	4.85	12	3.6%	2.34 [-0.68, 5.36]
McElroy et al., 2008 (8.9 mg)	2.71	2.81	21	0.11	1.53	21	8.8%	2.60 [1.23, 3.97]
Pollack et al., 2006 (8.7 mg)	3.58	2.81	12	-0.27	1	12	7.4%	3.85 [2.16, 5.54]
Schulz et al., 2008 (7.09 mg)	2.86	3.02	77	-0.35	2.68	92	11.3%	3.21 [2.34, 4.08]
Shapira et al., 2004 (6.1 mg)	2.8	3.1	22	0.5	1.8	22	8.2%	2.30 [0.80, 3.80]
Soler et al., 2005 (8.83 mg)	2.74	3.2	30	-0.05	2.39	30	8.5%	2.79 [1.36, 4.22]
Stein et al., 2002 (15 mg)	5.99	2.67	10	-1.36	2.95	9	4.6%	7.35 [4.81, 9.89]
Zanarini et al., 2010 (2.5mg)	2.09	2.93	97	0.02	2.47	77	11.7%	2.07 [1.27, 2.87]
Zanarini et al., 2010 (6.7 mg)	3.17	3.28	103	0.02	2.47	76	11.5%	3.15 [2.31, 3.99]
Subtotal (95% CI)			414			384	84.6%	3.24 [2.56, 3.93]
Heterogeneity: Tau^2 = 0.68; Chi^2 = 24.73, df = 10 (P = 0.006); I^2 = 60%								
Test for overall effect: Z = 9.29 (P < 0.00001)								
Total (95% CI)			446			405	100.0%	3.24 [2.57, 3.90]
Heterogeneity: Tau^2 = 0.82; Chi^2 = 32.42, df = 12 (P = 0.001); I^2 = 63%								
Test for overall effect: Z = 9.54 (P < 0.00001)								
Test for subgroup differences: Chi^2 = 0.00, df = 1 (P = 0.98), I^2 = 0%								

Mean Difference IV, Random, 95% CI [kg]

-10 -5 0 5 10
Greater for Placebo Greater for Olanzapine

Study or Subgroup	Risperidone Mean [kg]	SD [kg]	Total	Placebo Mean [kg]	SD [kg]	Total	Weight	Mean Difference IV, Random, 95% CI [kg]
8.1.1 AP-Naive								
Bartzokis et al., 2004 (3 mg)	97.02	19.69	22	96.57	23.41	26	0.4%	0.45 [-11.74, 12.64]
Pandina et al., 2007 (1.07 mg)	1.2	0.18	196	0.45	0.18	194	39.4%	0.75 [0.71, 0.79]
Reich et al., 2004 (1.41 mg)	1.1	1.9	12	1.4	2.8	9	9.4%	-0.30 [-2.42, 1.82]
Subtotal (95% CI)			230			229	49.1%	0.75 [0.71, 0.79]
Heterogeneity: Tau^2 = 0.00; Chi^2 = 0.94, df = 2 (P = 0.62); I^2 = 0%								
Test for overall effect: Z = 41.13 (P < 0.00001)								
8.1.2 Previous AP Exposure Unclear								
Brawman-Mintzer et al., 2005 (1.1 mg)	1.04	1.7	19	1.4	1.95	20	20.3%	-0.36 [-1.51, 0.79]
Krystal et al., 2011 (2.74 mg)	96.1	3.673	123	95.3	3.5114	124	25.0%	0.80 [-0.10, 1.70]
Loebl et al., 2008 (25 mg IM)	2.9	4.3	16	-1.8	4	15	5.6%	4.70 [1.78, 7.62]
Subtotal (95% CI)			158			159	50.9%	1.18 [-0.67, 3.03]
Heterogeneity: Tau^2 = 1.98; Chi^2 = 10.45, df = 2 (P = 0.005); I^2 = 81%								
Test for overall effect: Z = 1.25 (P = 0.21)								
Total (95% CI)			388			388	100.0%	0.66 [-0.09, 1.40]
Heterogeneity: Tau^2 = 0.36; Chi^2 = 11.57, df = 5 (P = 0.04); I^2 = 57%								
Test for overall effect: Z = 1.73 (P = 0.08)								
Test for subgroup differences: Chi^2 = 0.21, df = 1 (P = 0.65), I^2 = 0%								

Mean Difference IV, Random, 95% CI [kg]
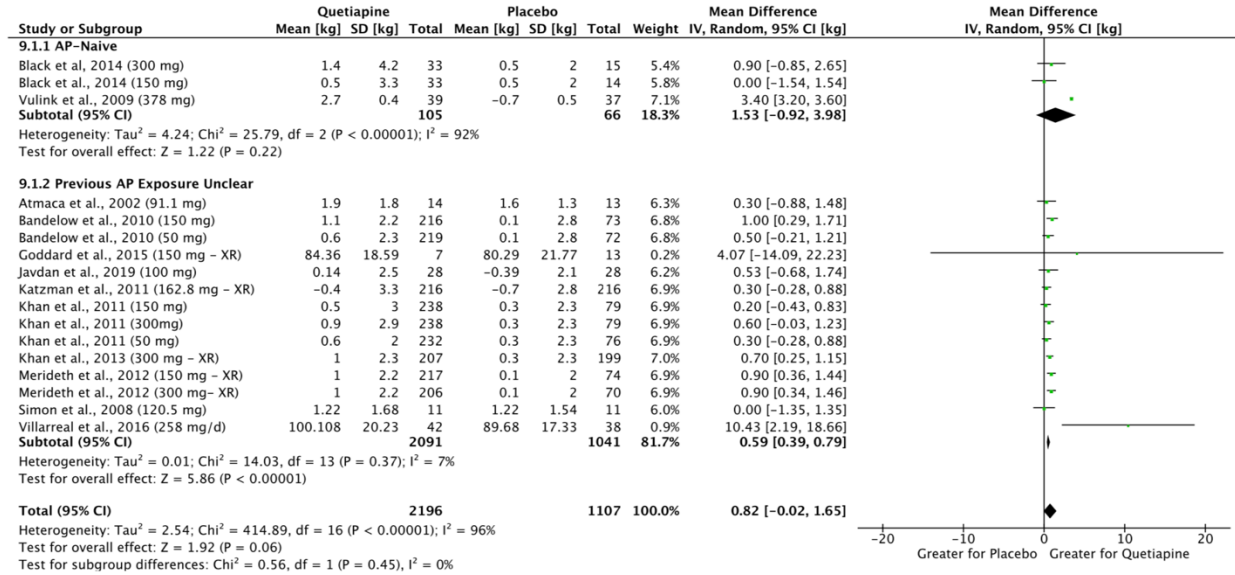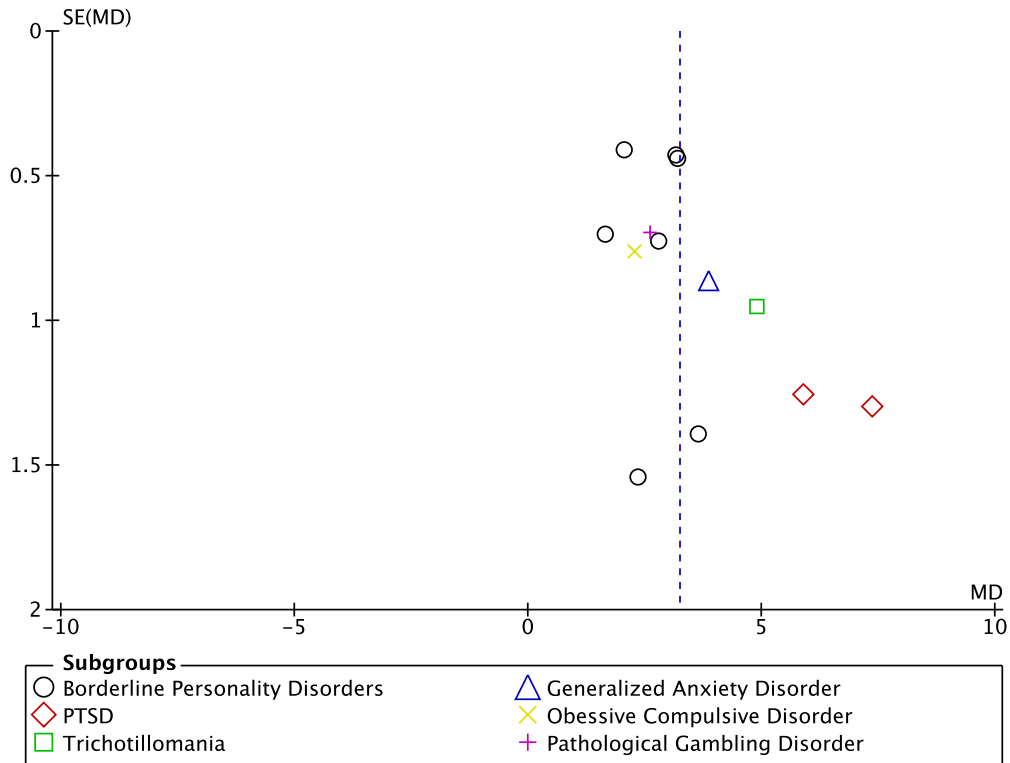
-10 -5 0 5 10
Greater for Placebo Greater for Risperidone

Supplementary Figure 5: Sub-group analysis according to previous AP exposure for change in weight with quetiapine

Supplementary Figure 6: Funnel Plot for Olanzapine Comparison of Body Weight

Supplementary Figure 7: Funnel Plot for Quetiapine Comparison of Body Weight