

**Table DS1** Characteristics of randomised controlled trials of non-pharmacological interventions for antipsychotic-induced weight gain<sup>a</sup>

Study	Participants/setting	Sample size, <i>n</i>	Age of participants, years: mean (s.d.)	Intervention, length and provider	Comparison group	Follow-up	Antipsychotic medication	Medication dose: mean (s.d.)
Álvarez-Jiménez <i>et al</i> <sup>29</sup>	Out-patients with first-episode schizophrenia-spectrum disorders who had not been previously treated with antipsychotic medication	(a) 28 (b) 33	(a) 26.0 (15.5) (b) 27.5 (8.5)	3-month individual early behavioural intervention that incorporated behavioural interventions, nutrition and exercise. Intervention provided by clinical psychologists	Non-structured information on weight gain	12 wk	(1) Olanzapine (2) Risperidone (3) Haloperidol	(1) 13.1(3.3) (2) 4.2 (0.9) (3) 4.9 (0.9)
Brar <i>et al</i> <sup>30</sup>	Out-patients or stable long-term in-patients with schizophrenia ( <i>n</i> =38) or schizoaffective disorder ( <i>n</i> =33) with a BMI >26 kg/m <sup>2</sup>	(a) 34 (b) 37	(a) 40.0 (10.1) (b) 40.5 (10.6)	14-week group-based cognitive-behavioural treatment. Treatment providers not reported	Non-structured information on weight gain	14 wk	Risperidone	(a) 4.7 (1.7) (b) 4.2 (1.8)
Evans <i>et al</i> <sup>35</sup>	Out-patients with schizophrenia ( <i>n</i> =16), schizoaffective ( <i>n</i> =12), schizophreniform ( <i>n</i> =10) or bipolar disorder ( <i>n</i> =8)	(a) 29 (b) 22	(a) 34.6 (9.6) (b) 33.6 (11.6)	6 individual nutritional counselling sessions over a 3-month period carried out by dieticians	Passive nutritional education by using a booklet	24 wk	Olanzapine	(a) 15.5 (6.9) (b) 14.3 (6.9)
Khazaal <i>et al</i> <sup>31</sup>	Out-patients with schizophrenia-spectrum disorders ( <i>n</i> =49), bipolar disorder ( <i>n</i> =5) or other mental disorders ( <i>n</i> =7) with a reported weight gain >2 kg during antipsychotic treatment	(a) 31 (b) 30	(a) 43.0 (9.8) (b) 38.3 (10.4)	12-week group-based treatment sessions that incorporated cognitive-behavioural interventions, moderate physical activity and food intake moderation. Intervention provided by senior psychologists	Informative 2 h group session including nutritional recommendations	24 wk	Atypical and typical antipsychotics	N/R
Kwon <i>et al</i> <sup>32</sup>	Out-patients with schizophrenia or schizoaffective disorder who had experienced weight gains of more than 7% of body weight	(a) 29 (b) 14	(a) 32.0 (9.2) (b) 29.8 (6.1)	12-week individual weight-management programme that included diet and exercise management based on CBT. Intervention provided by a dietician and an exercise coordinator	Non-structured information on weight gain	12 wk	Olanzapine	(a) 10.4 (5.9) (b) 11.3 (4.8)
Littrell <i>et al</i> <sup>36</sup>	Out-patients with schizophrenia ( <i>n</i> =54) or schizoaffective disorder ( <i>n</i> =26)	(a) 35 (b) 35	(a) 33.7 (9.2) (b) 43.5 (10.0)	4-month intervention group that consisted of weekly psychoeducation classes focused on nutrition and exercise. Intervention provided by master's-level trained clinician	No specific intervention	24 wk	Olanzapine	(a) 16.6 (4.2) (b) 16.3 (4.1)
McKibbin <i>et al</i> <sup>33</sup>	Out-patients patients with schizophrenia ( <i>n</i> =48) or schizoaffective disorder ( <i>n</i> =9) and type-2 diabetes mellitus	(a) 28 (b) 29	(a) 54.8 (8.2) (b) 53.1 (10.4)	24-week group-based educational lifestyle intervention that included basic education about diabetes treatment, nutrition, behavioural change strategies and exercise. Treatment providers not reported	Usual care by the participants' physicians and three brochures relevant to diabetes management	24 wk	Atypical and typical antipsychotics	N/R
Scocco <i>et al</i> <sup>37</sup>	Out-patients with schizophrenia ( <i>n</i> =15) or schizoaffective disorder ( <i>n</i> =5)	(a) 9 (b) 8	(a) 57.1 (12.4) (b) 39.2 (9.9)	8-week individual dietary intervention. Intervention provided by a nutritionist	No specific intervention	8 wk	Olanzapine	N/R
Weber & Wyne <sup>34</sup>	Out-patients with schizophrenia or schizoaffective disorder with a BMI ≥25 kg/m <sup>2</sup>	(a) 8 (b) 7	N/R	16-week cognitive-behavioural group intervention including presentations on low-fat diets and plans to increase exercise provided by a psychiatric nurse	No specific intervention	16 wk	Atypical antipsychotics	N/R
Wu <i>et al</i> <sup>38</sup>	In-patients with schizophrenia with a BMI >27 kg/m <sup>2</sup>	(a) 28 (b) 25	(a) 42.2 (7.5) (b) 39.0 (6.7)	6-month diet intervention and regular physical activity implemented by a dietician	No specific intervention	24 wk	Clozapine	

(a), intervention group; (b), control group; BMI, body mass index; N/R, not reported.  
a. Weight change is reported at intervention end-point.

**Table DS2** Risk of bias in trials included in meta-analysis

Study	Randomisation procedure	Allocation concealment	Masking (outcome assessor)	Intention-to-treat analysis	Withdrawals, n (%)	Manual-based treatment
Álvarez-Jiménez <i>et al</i> <sup>29</sup>	'Randomly assigned by computer-generated blocks of four random numbers' p.1254	'Randomisation was performed by a member of the team not involved with either the assessments or the treatments' p.1254	'Research assessors and patients intended to be blind to the intervention status' p.1254	Yes	None	'EBI was conducted according to a manual developed by our group' p.1255
Brar <i>et al</i> <sup>30</sup>	'Randomly assigned' p.206. No other statement	Not stated	'Rater-blinded' p.205	No	(a) 13 (38.2) (b) 9 (24.3)	No statement
Evans <i>et al</i> <sup>35</sup>	'Randomly assigned' p.479. No other statement	Not stated	No statement	No	(a) 6 <sup>a</sup> (20.6) (b) 11 <sup>a</sup> (50)	No statement
Khazaal <i>et al</i> <sup>31</sup>	No statement	Unclear	Open label	No	(a) 6 (19.3) (b) 2 (6.6)	'Handbook for a CBT treatment' p.171
Kwon <i>et al</i> <sup>32</sup>	'Randomised' p.547. No other statement	Not stated	No statement	No	(a) 11 (37.9) (b) 1 (7.1)	No statement
Littrell <i>et al</i> <sup>36</sup>	'Randomly assigned' p.238. No other statement	Not stated	'Open-label' p.238	Yes	None	'Using the "solution of wellness" modules' p.239
McKibbin <i>et al</i> <sup>33</sup>	'Randomly assigned' p.38. No other statement	Not stated	No statement	No	(a) 3 (10.7) (b) 3 (10.3)	'Manualised-intervention' p.37
Scocco <i>et al</i> <sup>37</sup>	'Randomly assigned' p.117. No other statement	Not stated	No statement	No	(a) 0 (0.0) (b) 2 (25)	No statement
Weber & Wyne <sup>34</sup>	'Randomised' p.96. No other statement	Not stated	'Measurements were completed by one research assistant who was "blind"' p.97	No	(a) 0 (0.0) (b) 2 (28.5)	No statement
Wu <i>et al</i> <sup>38</sup>	No statement	Unclear	Unclear	No	(a) 0 (0.0) (b) 3 (12)	No statement

(a), intervention group; (b), control group; CBT, cognitive-behavioural therapy; EBI, early behavioural intervention.  
a. At intervention end-point.