

Table DS1 Characteristics of randomised controlled trials of non-pharmacological interventions for antipsychotic-induced weight gain^a

| 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> ²⁹ | 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> ³⁰ | 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 ² | (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> ³⁵ | 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> ³¹ | 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> ³² | 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> ³⁶ | 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> ³³ | 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> ³⁷ | 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 ³⁴ | Out-patients with schizophrenia or schizoaffective disorder with a BMI ≥25 kg/m ² | (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> ³⁸ | In-patients with schizophrenia with a BMI >27 kg/m ² | (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, <i>n</i> (%) | Manual-based treatment |
|--|--|---|--|-----------------------------|---|---|
| Álvarez-Jiménez <i>et al</i> ²⁹ | '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> ³⁰ | '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> ³⁵ | 'Randomly assigned' p.479. No other statement | Not stated | No statement | No | (a) 6 ^a (20.6) (b) 11 ^a (50) | No statement |
| Khazaal <i>et al</i> ³¹ | 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> ³² | '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> ³⁶ | '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> ³³ | '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> ³⁷ | 'Randomly assigned' p.117. No other statement | Not stated | No statement | No | (a) 0 (0.0) (b) 2 (25) | No statement |
| Weber & Wyne ³⁴ | '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> ³⁸ | 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.