Effectiveness of weight loss and maintenance interventions in women
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CRD summary
The author reviewed clinical trials of interventions for weight loss in which all the participants were women. The pooled data suggested that dieting combined with exercise or medication produces greater weight loss than diet alone. The author did not assess the validity of the included studies, and pooled the results from different studies without assessing the variation between them. Therefore, the conclusions may not be reliable.

Authors' objectives
To assess the effectiveness of interventions designed to achieve and maintain weight loss in women.

Searching
The author searched PubMed for articles published in English after 1 July 1997. Additional publications were located from the reference lists of included articles.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) lasting 12 months or longer were eligible for inclusion.

Specific interventions included in the review
All interventions for weight loss and maintenance were eligible for inclusion. The interventions included in the literature search were diet, physical activity, behaviour modification, anti-obesity medications, meal replacements, bariatric surgery, or combined interventions. Interventions implemented in the included studies were advice alone (controls), diet alone, diet plus exercise, meal replacements, medications and very low calorie diets (VLCDs).

Participants included in the review
Eligible participants were adult women with a body mass index (BMI) of greater than 25. Only studies in which all the participants were women were included in the review. In the included studies, the baseline BMI ranged from 30 to 38 and body weight from 76.4 to 102.1 kg.

Outcomes assessed in the review
The primary outcome of interest was weight loss. Lipids, blood-pressure, fitness, quality of life, medication changes and prevention of disease were specified as secondary outcomes, but were not reported in the review.

How were decisions on the relevance of primary studies made?
The author did not state how the papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality
The author did not state that they assessed validity.

Data extraction
The author did not state how the data were extracted for the review, or how many reviewers performed the data extraction. Weight changes in women completing the trial were extracted for each treatment group at different time points, as measured in each individual trial.

Methods of synthesis
How were the studies combined?
Data on weight change from baseline were pooled from study arms implementing the following interventions: advice only (controls; 6 studies), diet alone (6 studies), diet and exercise (6 studies), meal replacement (2 studies), medication (2 studies) and VLCDs (2 studies). The average weight change at 3, 6 and 12 months was calculated for each group. A brief narrative synthesis of the benefits of modest weight loss was also presented.

The author did not state that publication bias was assessed.

How were differences between studies investigated?
The author did not state that heterogeneity between the studies was investigated. Differences between the studies were discussed in terms of the different components of the interventions (diet, physical activity and advice) and the person delivering the intervention (dieticians compared with other professionals).

Results of the review
Seventeen RCTs with 1,291 participants were included in the review.

Advice only: 80% of women completed the study period, averaging a weight loss of 1.3 kg at 6 months and 0.8 kg at 12 months.

Lower-energy, low-fat diet: the study completion rate was 75%, with an average weight loss of 5.2 kg at 6 months and 6 kg at 12 months.

Diet combined with physical activity: study completers (86%) averaged a weight loss of 8.9 kg at 6 months and 8.8 kg at 12 months. Weight loss was 7.9 kg after 18 months (2 studies) and 14 kg at 2 years (1 study).

Meal replacement: 79% of women completed the study period, with an average weight loss of 5.9 kg after 6 months which remained the same after 12 months.

Medication: 2 studies used orlistat or sibutramine together with lifestyle changes. The study completion rate was 85% and weight loss was 11.6 kg at both 6 and 12 months.

VLCDs: women had lost an average of 12.4 kg after 3 months of a VLCD, but these losses had turned to weight gains at completion of follow-up (12 or 16 months).

Authors' conclusions
Regardless of the intervention used, a weight-loss plateau occurred after about 6 months. Weight loss was maintained at 12 months in most cases. Advice alone did not appear to be effective, while dietary interventions were more effective when combined with physical activity or anti-obesity medication.

CRD commentary
The review question was broad but the inclusion criteria were clearly stated. The author searched a limited range of sources using a narrow search date range, only included English language material and did not attempt to locate unpublished studies, thus it is possible that relevant studies could have been missed. Details of the review methods were not reported, so it is difficult to evaluate the likelihood of bias and errors arising during the review process. Relevant details of the included studies were tabulated, although results for outcomes other than weight loss were not reported. The author apparently did not assess the validity of the included studies, other than by limiting the review to RCTs. It is therefore difficult to be sure about the reliability of the included studies and, hence, any synthesis derived from them.

The main conclusions of the review were derived by pooling the results from different studies that used similar interventions. However, from the tables it would seem that the studies differed considerably in terms of the BMI of the included participants. Heterogeneity between the studies was apparently not assessed or taken into account and, therefore, the author's conclusions may not be reliable.
Implications of the review for practice and research
Practice: The author stated that weight loss programmes for women should focus on healthy eating, increased physical activity and the acceptance of individual differences. Health professionals should encourage women to have realistic expectations about weight loss and should make them aware of the benefits of modest weight loss.

Research: The author did not state any implications for further research.

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Other publications of related interest

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.