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Advice on low-fat diets for obesity.

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BACKGROUND: Overweight and obesity are global health problems contributing to an ever increasing noncommunicable disease burden. Calorie restriction can achieve short-term weight loss but the weight loss has not been shown to be sustainable in the long-term. An alternative approach to calorie restriction is to lower the fat content of the diet. However, the long-term effects of fat-restricted diets on weight loss have not been established. **OBJECTIVES:** To assess the effects of advice on low-fat diets as a means of achieving sustained weight loss, using all available randomised clinical trials. This review focused primarily on participants who were overweight or clinically obese and were dieting for the purpose of weight reduction. Since we were particularly interested in the ability of participants to sustain weight loss over a longer period of time, we focused on studies of 'free living' men and women who were given dietary advice rather than provision of food or money to purchase food. **SEARCH STRATEGY:** We searched the Cochrane Library (issue 2, 2001), MEDLINE (up to February 20002), and EMBASE (up to February 20002). We also searched the Science Citation Index (up to January 2001) and bibliographies of studies identified. Date of latest search: February 2002. **SELECTION CRITERIA:** Trials were included if they fulfilled the following criteria: 1) they were randomised controlled clinical trials of low-fat diets versus other weight-reducing diets, 2) the primary purpose of the study was weight loss, 3) participants were followed for at least six months, 4) the study participants were adults (18 years or older) who were overweight or obese (BMI >25 kg/m²) at baseline. Studies including pregnant women or patients with serious medical conditions were excluded. Two people independently applied the inclusion criteria to the studies identified. Disagreement was resolved by discussion or by intervention of a third party. **DATA COLLECTION AND ANALYSIS:** Data were extracted by three independent reviewers and meta-analysis performed using a random effects model. Weighted mean differences of weight loss were calculated for treatment and control groups at 6, 12 and 18 months. **MAIN RESULTS:** Four studies were included at the six month follow-up, five studies at the 12 month follow-up and three studies at the 18 month follow-up. There was no significant difference in weight loss between the two groups at six months (WMD 1.7 kg, 95% CI -1.4 to 4.8 kg). The weighted sum of weight loss in the low fat group was -5.08 kg (95% CI -5.9 to -4.3 kg) and in the control group was -6.5 kg, (95% CI -7.3 to -5.7 kg). There was no significant difference in weight loss between the two groups at 12 months (WMD 1.1 kg, 95% CI -1.6 to 3.8 kg). The weighted sum of weight loss in the low fat group was -2.3 kg (95% CI -3.2 to -1.4 kg) and in the control group was -3.4 kg (95% CI -4.2 to -2.6 kg). There was no significant difference in weight loss between the two groups at 18 months (WMD 3.7 kg, 95% CI - 1.8 to 9.2). The weighted sum of weight loss in the control group was -2.3 kg (95% CI -3.5 to -1.2 kg) and in the low fat group there was a weight gain of 0.1 kg (95% CI -0.8 to 1 kg). There was significant heterogeneity in the results for weight loss at six months and 12 months. Apart from one study which showed a slight but statistically significant difference in total cholesterol in the low fat group at one year follow-up, there were no significant differences between the dietary groups for other outcome measures such as serum lipids, blood pressure and fasting plasma glucose. Studies measuring other factors such as perceived wellness and quality of life reported conflicting results. **REVIEWER'S CONCLUSIONS:** The review suggests that fat-restricted diets are no better than calorie restricted diets in achieving long term weight loss in overweight or obese people. Overall, participants lost slightly more weight on the control diets but this was not significantly different from the weight loss achieved through dietary fat restriction and was so small as to be clinically insignificant.

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