

Prescribing low-fat diets: useless for long-term weight loss?

What diet is best for weight loss? This question has been hotly debated for decades, and answering it correctly is becoming increasingly important in view of the rising prevalence of obesity worldwide.¹ Previous recommendations to consume low-fat diets might have been ill advised, especially if dietary fat is replaced by refined carbohydrates. In *The Lancet Diabetes & Endocrinology*, Deirdre Tobias and colleagues² add to this message by presenting results of a systematic review and meta-analysis of randomised controlled trials comparing low-fat diets to other diets in their ability to generate long-term (ie, ≥ 1 year) weight loss. Their main conclusion is that there is no good evidence for recommending low-fat diets: when low-fat weight loss interventions were compared with various other higher-fat weight loss interventions, the weighted mean difference (WMD) in weight loss was just 0.36 kg (95% CI -0.66 to 1.37), and was not statistically significant. In fact, low-carbohydrate, higher-fat weight loss diets led to significantly greater weight loss than did low-fat interventions (WMD 1.15 kg [0.52 to 1.79]).

However, before proclaiming the superiority of low-carbohydrate diets for the treatment of obesity, consider the magnitude of the benefit: participants prescribed low-carbohydrate diets lost only about 1 kg of additional weight after 1 year compared with those advised to consume low-fat diets. Although statistically significant, such a miniscule difference in weight loss is clinically meaningless. Furthermore, irrespective of the diet prescription, the overall average weight loss in trials testing interventions designed to reduce bodyweight was unimpressive (3.75 kg [SD 2.7]).

Why was long-term weight loss so poor, regardless of the type of diet prescribed? One key reason is that adherence to the diets probably lapsed long before the 1 year mark. Outpatient weight-loss studies ubiquitously achieve a maximum weight loss after about 6–8 months, followed by weight regain.³ Energy balance calculations suggest that at the point of maximum weight loss, diet adherence has already substantially waned.^{4–6} Confirming these calculations, one diet study⁷ used expensive biomarker methods to measure energy intake and reported that adherence was poor even when participants were provided with all their food for the first 6 months, and adherence fell further

after food provision was stopped. Tobias and colleagues only included diet studies lasting at least 1 year, so any reported differences in weight loss were probably due to diet differences that had long since dissipated.

Investment in outpatient randomised controlled weight-loss trials comparing diet advice has been enormous, but very little evidence has been amassed about the effects of actually eating the prescribed diets over the long term. A major problem is that accurate assessment of diet adherence in outpatient studies is severely limited,^{8,9} although promising new methods are being developed.⁶ Much more research is needed to determine the factors that affect diet adherence and thereby help maintain weight loss over the long term.¹⁰ What seems to be clear is that long-term diet adherence is abysmal, irrespective of whether low-fat or other diets, such as low-carbohydrate diets, are prescribed.

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