Weight-loss diets—can you keep it off?\(^1\,2\)

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Due et al (1) conducted a careful and informative trial to assess the effectiveness of 3 diets for weight maintenance after a dramatic weight loss of 12 kg, induced by an 8-wk very-low-calorie diet based on beverages and bars. During the 6-mo intervention, participants regained \(\approx 3\) kg, with little difference across diets.

Standard weight-loss diets provide 500–1000 fewer calories than estimated to be necessary for weight maintenance and initially result in a loss of \(\approx 0.5–1\) kg/wk. Although many people can lose some weight (as much as 10% of initial weight in \(\approx 6\) mo) with such diets, at least part of the weight lost is regained without continued support and follow-up (2). In recent years it has become increasingly apparent that short-term weight-loss programs, even those that result in dramatic weight loss, are less relevant to long-term health and weight maintenance than is moderate weight loss over a longer duration. Weight maintenance is the main challenge. For example, participants who initially lost 22 kg in a very-low-calorie-diet program (3) had a net loss of 3.3 kg after 3 y of follow-up; only 12% of the participants maintained 75% of their weight loss after leaving the diet program, and 40% gained back more than they had lost. Typically, maximal weight loss occurs in the first 6 mo of therapy, and weight regain begins shortly thereafter (4). On average, weight loss at 2 y ranges between 3% and 6% for nonpharmacological therapies and between 7% and 8% for pharmacologic therapies (4). A meta-analysis (5) of 46 trials involving diet advice and counseling estimated a decrease of \(\approx 0.1\) unit of body mass index (in kg/m\(^2\)) per month from 3 to 12 mo of active intervention and a regain of \(\approx 0.02\) to 0.03 units of body mass index per month subsequently. However, there is some room for optimism. Approximately 60%, 35%, and 19% of the successful weight losers were able to maintain 10% of the weight reduction for 1, 3, and 5 y, respectively (4). Moreover, if the participants successfully maintained their weight loss for 2–5 y, the chance of longer-term success increased greatly (6).

Metabolic adjustments that occur with weight loss may contribute to a high rate of weight regain, because weight loss is accompanied by a reduction in resting metabolic rate. In animal studies, an enhanced metabolic efficiency (of 60%) and an elevated appetite (of 40%) both contributed to a large potential energy imbalance that, when the aggressive control of energy intake is relieved, becomes actualized and results in an exceptionally high rate of weight regain (7).

In the trial by Due et al (1), the diet with the higher proportion of total monounsaturated fatty acids (MUFA) and less carbohydrates (called the MUFA group by the authors) was superior at improving lipid (LDL/HDL ratio) and glycemic control (insulin and homeostasis model assessment of insulin resistance) profiles compared with low-fat and Western diets. These results highlight the potential role of diets higher in MUFA and polyunsaturated fatty acids and with modest carbohydrate restriction to improve the lipid profile and glycemic control. In contrast, the low-fat diet did not reduce LDL. In the 2-y DIRECT study (8), we found that, apart from the weight loss, low-carbohydrate and Mediterranean diets had some beneficial metabolic effects, which suggests that diets may be individualized according to personal preferences and metabolic needs. Furthermore, we distinguished changes in concentrations of biomarkers that are apparently related to loss of adipose tissue (leptin, adiponectin, and high-sensitivity C-reactive protein) from those that apparently reflect, in part, the effect of the specific diet composition (triglycerides, HDL cholesterol, glucose, and insulin). The increasing improvement in concentrations of some biomarkers over time, up to the 24-mo time point, despite maximum weight loss by 6 mo, suggests that a healthy diet composition has benefits beyond weight loss. Switching to a diet regimen to minimize refined carbohydrates, avoid \(trans\) fats from hydrogenated oils, and consume moderate amounts of unsaturated fats is healthy, even if only moderate weight reduction is achieved. Indeed, according to the recent American Heart Association statement (9), population-level obesity prevention should be approached not as the promotion of widespread “dieting” but rather from the perspective of promoting healthful eating and physical activity patterns and a balance between the 2. Thus, it may be preferable to consider weight-loss diet strategies primarily according to their effects on health outcomes and prevention of weight regain, with less emphasis on the initial weight loss.

In the study by Due et al (1), all foods were provided free of charge from a purpose-built supermarket. In a way, this reflects the current situation in Western countries, ie, highly palatable, calorically dense foods are readily available at low cost and the

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cheaper foods are typically rich in refined carbohydrates. Furthermore, as reflected in their Figure 2 (1), the study participants appear to be at risk of additional weight regain, because no plateau was shown. Thus, short-term weight-loss programs based on very-low-calorie diets tend to be unsuccessful in the long term. Clearly, it takes more than simple changes in the macronutrient composition to maintain weight loss, and change in lifestyle must occur at the same time. The frequency of exercise after the diet program is the strongest predictor of weight loss maintenance, while television viewing is associated with weight gain (3, 6). Current guidelines to prevent weight gain recommend 60 min per day of at least moderate-intensity physical activity (10). Clinicians should emphasize to their patients that there are no magic ways to lose weight. A healthy diet should be a life-long strategy. To prevent weight cycling, long-term diet approaches with gradual weight loss should be considered a one-way ticket to good health.

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REFERENCES