Behavioral Treatment of the Patient with Obesity

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KEYWORDS

• Obesity • Weight loss • Behavioral treatment • Lifestyle modification • Health

KEY POINTS

- Weight loss of 5% to 10% of initial body weight is produced by a comprehensive 16 to 26 week behavioral intervention, consisting of diet, exercise, and behavior therapy.
- Behavioral treatment can be combined with diets of varying macronutrient composition, all of which are successful if they induce an appropriate energy deficit.
- Physical activity alone is of limited benefit for inducing weight loss but is important for improving health and quality of life and for facilitating long-term weight management.
- Weight regain is common following behavioral treatment but can be prevented by providing patients twice monthly or monthly weight loss maintenance sessions.
- The Diabetes Prevention Program and the Look AHEAD study provide examples of comprehensive behavioral interventions that produced long-term improvements in weight-related comorbid conditions.

INTRODUCTION

Expert panels sponsored by the World Health Organization, the National Institutes of Health, and several professional societies have recommended that obese individuals lose approximately 10% of initial body weight to improve their health and quality of life.[1–3] This goal can be achieved using a comprehensive behavioral program that includes 3 principal components: diet, physical activity, and behavior therapy. This article describes behavioral treatment of obesity (also referred to as behavioral weight control or lifestyle modification), its short-term and long-term results of treatment, and new developments in the field.

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OVERVIEW OF BEHAVIORAL TREATMENT

The Diabetes Prevention Program (DPP) provides an excellent example of a comprehensive behavioral intervention.[4] It randomly assigned more than 3200 overweight or obese subjects with impaired glucose tolerance to placebo, metformin, or an intensive lifestyle intervention (ILI); the latter was designed to induce and maintain a 7 kg reduction in initial weight. The study's primary outcome was the reduction in the incidence of type 2 diabetes. Lifestyle participants attended 16 individual counseling sessions (with a registered dietitian) during the first 24 weeks and then had 1 contact at least every other month for the remainder of the 4-year study. Subjects were instructed to consume a low-fat, reduced-calorie diet (ie, 1200–2000 kcal/d, based on body weight), made up of conventional foods that they selected. The physical activity goal was 150 min/wk (principally of brisk walking). The study was stopped after a mean of 2.8 years, at which time lifestyle participants had achieved a mean loss of 5.6 kg, compared with significantly smaller losses of 2.1 kg for metformin and 0.1 kg for placebo. The lifestyle intervention, compared with the placebo and metformin groups, reduced the risk of developing type 2 diabetes by 58% and 31%, respectively, leading to the study's early termination to provide lifestyle modification to the other 2 groups. A 10-year follow-up assessment found that, compared with placebo, the lifestyle intervention maintained a 34% reduction in the risk of developing type 2 diabetes, even though the latter subjects had regained most of their lost weight.[5] Comparable favorable findings were observed in trials conducted in Finland and China.[6,7]

The following section provides a fuller description of the components of behavioral treatment as provided in the DPP and clinical practice. Detailed accounts are provided by treatment manuals such as the Lifestyle, Exercise, Attitudes, Relationships, Nutrition (LEARN) Program for Weight Control or the protocols developed for the DPP and Action for Health in Diabetes (Look AHEAD) trials.[4,8,9]

PRINCIPAL COMPONENTS OF BEHAVIORAL TREATMENT

Diet

Behavioral weight control typically prescribes a calorie target to induce an energy deficit of 500 to 1000 kcal/d.[8] The target is usually 1200 to 1500 kcal/d for women and 1500 to 1800 kcal/d for men.[10] Alternatively, numerous studies have prescribed calorie goals based on body weight, with 1200 to 1499 kcal/d for individuals less than 250 lb and 1500 to 1800 kcal/d for those greater than this weight.[11] A couple of weeks of calibration may be required for participants to identify the calorie level that produces the desired loss of 0.5 to 1 kg/wk.

Although the DPP prescribed a traditional low-fat, low-calorie diet, a variety of different interventions can be incorporated in behavioral treatment, including low-carbohydrate, low-glycemic, and Mediterranean-type diets. All diets will produce weight loss, regardless of their macronutrient composition, if a consistent caloric deficit is achieved. This was demonstrated by the 2-year Preventing Obesity Using Novel Dietary Strategies (POUNDS) Lost study, in which participants in 4 diets groups were all prescribed a 750 kcal/d deficit but were instructed to consume different percentages of protein (15% or 25%), fat (20% or 40%), and carbohydrate (ranging from 35% to 65% of daily calories).[12] Short-term and long-term weight losses did not differ significantly at any time among the 4 dietary interventions, all of which were combined with a comprehensive program of lifestyle modification. Foster and colleagues[13] similarly found no significant differences in short-term or long-term weight loss in subjects assigned to low-carbohydrate versus low-fat diets, each combined with intensive