

A review and evaluation of current weight control loss interventions



There is much debate regarding the most effective method of treating obesity. Most of the research has been done on adults; however, research is increasingly being done on children and adolescents as the prevalence of obesity in this population increases.

Treatment of obesity includes many different methods, including various dietary, exercise, and behavioral interventions, medication, and surgery. A study by Barlow, Trowbridge, Klish, and Dietz (2002) looked at various interventions recommended to overweight children and adolescents by different healthcare providers.

The most common interventions recommended by health care providers included changes in eating patterns and limiting specific foods. Less frequently recommended interventions were low-fat diets and modest calorie restrictions.

Very infrequently recommended interventions were very low-calorie diets and commercial diets. Several health care providers also listed "fruit and vegetables," "portion control," "increase water," "fiber," and "learn to determine hunger and fullness levels" as other interventions that they recommended. In the adolescent population, the most frequently recommended dietary intervention by all types of health care providers questioned was "limiting specific foods."

All types of health care providers were also highly likely to recommend increasing physical activity and limiting sedentary behaviors as physical activity interventions. Very few health care providers recommended medication, appetite suppressants, herbal remedies, or weight loss surgery.

The current consensus is that the most effective weight loss and maintenance treatment includes a combination of caloric restriction, increased physical activity, and behavioral therapy, with extended treatment contact, weight loss satisfaction, and social support contributing to positive long-term outcomes in both obese adults and children (Williamson & Stewart, 2005).

Diets and Problems Associated with Dieting

The increased pressure to alleviate the obesity epidemic led to a boom in the dieting industry. Twenty-five percent of men and 45% of women are currently trying to lose weight, equating to about 71 million Americans (Newstarget. com, 2005). In 1996, consumers spent \$70 billion annually in health care costs, and an additional \$33 billion per year, trying to lose weight or prevent the return of weight gain (Chatzky, 2002).

In 2004, those values rose to \$100 billion spent annually on health-care cost, and the US weight loss market value rose to \$46. 3 billion annually (Newstarget. com, 2005). Dieting products and services range from \$1. 29 for Slim-Fast bars up to \$25, 000 for gastric bypass (Chatzky, 2002) with the number of bariatric surgeries totaling about 140, 000 procedures in 2003 (Newstarget. com, 2005).

Sales of over-the-counter diet and herbal supplements totaled \$16. 8 billion in 2000 (Kane, 2001) and are expected to grow 11. 5% to approximated \$703 million by 2008 (NewsTarget. com, 2008).

Diet drugs have been around for over 35 years but became generally accepted in the medical community by the early 1990's. The FDA has

approved several treatments as clinically safe (i. e. sibutramine and orlistat) for those individuals with a BMI > 30 or BMI 27-29 with one or more obesity related co-morbidity (ADA, 1997). There are amphetamine-like derivatives available for short-term use but weight gain often occurs once discontinued.

The risks associated with obesity drugs are neurotoxicity, primary pulmonary hypertension, and becoming reliant on the medication as opposed to making desired healthy lifestyle changes (ADA, 2002). Many of the overthecounter products have no proven efficacy or short- or long-term weight loss (ADA, 2002).

Many Americans have turned to various dieting methods as weight control measures, leading to the 'yo-yo' dieting affect, ultimately contributing to the ever-increasing obesity rates.

Commercial structured programs, such as Weight Watchers, Jenny Craig and LA Weight Loss, are common approaches followed due to their convenience and support system. It is estimated that 7. 1 million American frequent these commercial weight loss centers and their revenues are expected to grow 11% to \$2 billion annually by 2008 (Newstarget. com, 2008).

Miller (1999) performed a study to examine the history and effectiveness of diet and exercise in obesity therapy and to determine the best approach for future interventions.

He summarized the dieting trends throughout the years with the initial strategy of the late 1950s to early 1960s focused on total fasting, which brought about quick weight loss but also increased risk of death due to serious loss of lean muscle mass and electrolytes. By the late 1960s to early

1970s, the emergence of the high protein/low carbohydrate diets became popular.

These involved a diet with 5-10% of energy calories from carbohydrate and a resultant high fat content (50-70% of calories) which relied on the high protein foods to minimize muscle catabolism and the low carbohydrate level to maintain a state of ketosis to theoretically increase fat burning (Miller 1999).

The side effects ranged from nausea, hyperuricemia, fatigue and refeeding edema. In the mid 1970s, the trend shifted towards very low calorie liquid diets (VLCD) with ~300-400 kcal/day, which caused obvious weight loss through muscle catabolism and water release.

The FDA terminated the use of this diet since ventricular arrhythmias resulted in 58 deaths. In the 1980s, the VLCD made a revival but at the level of 450-500 kcal/day, with fat content of ~2-18% of total calories, and up to 800 kcal/day for those individuals who were more active. Gallbladder disease and cardiac problems surfaced as side effects of this diet (Miller 1999).

The low calorie commercial franchised programs such as Jenny Craig and Nutri/Systems arose in the 1980s as well. Meals were pre-packaged with ~1100-1200 kcal/day with the breakdown of energy approximately at 20% from protein, 20% from fat and 60% from carbohydrate.

These programs found improved compliance compared to the VLCD, however a similar health risk was found to negatively impact the heart. Since the 1980s, numerous dieting books have hit the stores with many best sellers (i. e. Pritkins and Fit for Life).

Despite the increased dieting trends, Miller (1999) noted that the NHANES determined the percentage of fat from kilocalories has dropped in the American diet but total energy has increased, particularly from refined or added sugars in the diet; in addition, obese individuals tend to consume less dietary fiber.

Most people have attempted more than one diet method in their weight loss attempts with the average attempting a new method twice a year (FTC, 1997). Miller (1999) found that over the past 40 years, most dieting techniques cycle in and out of popularity and that many are actually hazardous to the health.

Miller summarized that the scientific community data indicated that a 15-week diet or diet plus exercise program led to a weight loss of about 11 kg in which 60-80% of the weight lost was kept off after one year, although most studies had limited long-term follow-up data and those available suggest that relapse to pre-diet weight typically occurred after 3-5 years. Many of the diets were difficult to assess due to their high dropout rates (some as high as 80%).

Nutrition education and behavior modification programs, to include community education programs, worksite interventions, and home correspondence courses, typically resulted in ~10 kg weight loss with a 33% and 95% post-diet weight relapse at three and five years respectively.

The commercial weight loss industry supplied little data over the last two decades, with much of it proclaimed scientifically inadequate due to small

sample size, high dropout rates, poor study design and inadequate follow-up periods.

Of the physician-directed programs, most did not result in a desired weight loss but better control of some of the co-morbidities associated with obesity (diabetes, CVD, etc.) (FTC, 1997).