Diets for Weight Loss

Description/Etiology
More than half of all adults in the United States are overweight or obese, conditions which increase risk for many chronic and potentially life-threatening diseases such as cardiovascular disease (CVD), coronary artery disease (CAD), diabetes mellitus, type 2 (DM2), hypertension, hyperlipidemia, asthma, and cancer. Additionally, having excessive body weight often negatively affects psychological status and perception of social status. For these reasons, weight loss and weight management are major healthcare and societal concerns. Of the treatment protocols currently available, calorie-restricted diets and exercise are the methods for weight loss that are preferred by the medical community. Although most diets have good short-term results, only about 15% of persons who lose weight by dieting maintain the weight loss for 5 years.

Weight loss or gain is the result of energy imbalance that occurs when the number of calories consumed does not equal the calories used for energy. For example, if an individual consistently consumes 2,500 calories/day but burns only 2,000 calories/day for energy, he or she will store 500 calories/day and will gain 1 pound/week. The source (e.g., protein, fat, carbohydrate) of excess calories is irrelevant, and all excess calories are stored as fat. If an individual consistently consumes 500 fewer calories than he or she burns in a day, the body will burn stored fat to meet the required energy needs and the result will be the loss of 1 pound/week. This is referred to as the 500 rule. The Academy of Nutrition and Dietetics recommends limiting weight loss to 1–2 pounds/week because doing so results in weight loss that is primarily from lost body fat. Weight loss in excess of 2 pounds/week is usually a result of water loss or the breakdown of lean muscle tissue.

There are many fad diets that are advertised as plans for extreme and rapid weight loss, but the most successful diets are those based on variety (e.g., eating many different foods that are adequate in all nutrients), moderation, and a realistic approach to lifestyle change. Goals should be realistic and attainable, and the new habits for exercise and diet should be sustainable over the long term. Behavior modification should be introduced in gradual steps that allow for a slow change in the person’s current lifestyle. Treatment involving weight loss should always include patient education about maintaining a healthy weight as well as support for adopting a healthy lifestyle.

Facts and Figures
Over 60% of the adults (≥ 20 years of age) in the United States are overweight or obese (Mozaffarian et al., 2015). Each year in the United States approximately 100,000 new cases of cancer associated with excess body fat are reported and an estimated 280,000 persons die as a result of complications related to excess weight (American Cancer Society, 2017). CVD, including CAD and stroke, is the leading cause of death worldwide, accounting for 17.3 million deaths per year (Mozaffarian et al., 2015). Data from the National Diabetes Statistics Report, 2017, indicate that in 2015 30.3 million Americans, or a tenth of the population, had diabetes. In 2010 the number was 25.8 million (8.3% of the population).

Risk Factors
There are many risk factors for obesity. Primary risk factors are a sedentary lifestyle, family history of obesity, hormonal disturbances, psychological disturbances, environment, eating disorders, and excessive calorie intake.
As stated in the Dietary Guidelines for Americans, 2015, published by the U.S. Department of Health and Human Services and the U.S. Department of Agriculture (USDA), reference body weight (RBW) is based on height, fitness, and body build. Weight above the RBW is categorized as follows: Overweight is 10–20% above RBW, mildly obese is 21–40% above RBW, moderately obese is 41–100% above RBW, and extremely obese is > 100% above RBW. Body mass index (BMI) can indicate if a person is overweight or obese (see Patient Anthropometric Data, below).

Nutritional Assessment

› Patient Dietary History Recall
  • Take a 24-hour diet history (i.e., patient recall of all foods and beverages consumed in a 24-hour period) to assess intake habits
  • Ask about the following:
    – Medical conditions (e.g., hypertension; DM2; heart or renal failure)
    – Signs and symptoms (e.g., vomiting/diarrhea/constipation, fatigue, headaches) that can indicate inadequate nutrient or fluid intake and negatively affect appetite
    – Level and type of regular physical activity
    – Recent anxiety and/or depression, which can interfere with dietary intake
    – Personal habits, including alcohol and caffeine consumption, smoking, eating at night, and frequenting vending machines

› Patient Anthropometric Data
  • Calculate the patient’s BMI
    – BMI = body weight (kilograms) divided by height (meters squared); or 703 multiplied by weight (pounds) and divided by height (inches squared)
    – Underweight: < 18.5; normal: 18.5–24.9; overweight: 25–29.9; obese: > 30

› Laboratory and Diagnostic Tests of Interest to the Nutritionist
  • Lipid panel will assess for high cholesterol/triglycerides, which is common in patients with obesity
  • Fasting lipids, creatinine level, and vitamin K level will assess renal and adrenal function
  • Thyroid-stimulating hormone (TSH) test will assess thyroid function. Hypothyroidism is common in patients with obesity
  • CBC, including Hgb and Hct, will assess for anemia, malnutrition, and infection
  • Blood glucose levels will assess for DM2, which is common in patients with obesity

Treatment Goals

› Maintain Optimal Physiologic Status and Educate About Weight Loss Diets
  • Assess vital signs, all physiologic systems for abnormalities related to excessive body weight, and results of lab tests and diet history; report findings to the treating clinician and administer treatment (e.g., for coexisting conditions), as prescribed
    – Monitor weight loss or fluctuation and evaluate for deficiencies in nutrition, as appropriate
  • Provide dietary education as appropriate for weight loss/management needs, considering findings from diet and weight history as well as relevant lab tests and medical history
  • Assess patient/family anxiety level, readiness to learn, and for knowledge deficits about risks related to excess body weight and diets for weight loss. Provide emotional support and educate about risks associated with excess body weight, including coexisting conditions, if present; the importance of making and maintaining healthy lifestyle changes in diet and exercise; and individualized prognosis
  • Assess physical activity by determining the number of minutes spent in physical fitness on a weekly basis, if not daily

Food for Thought

› Weight loss increases insulin activity, which improves insulin resistance and reduces the need for medication to control DM2. Similarly, weight loss lowers blood pressure and frequently lowers the required dose or reduces the number of antihypertensive medications needed
  • According to researchers, improvements in dietary quality (e.g., increased consumption of fruits, whole grains, nuts, legumes, and polyunsaturated fatty acids; decreased intake of sugar-sweetened beverages and red and processed meat) between 1999 and 2012 resulted in the prevention of 1.1 million premature deaths, 8.6% fewer cases of CVD, 1.3% fewer cases of cancer, and 12.6% fewer DM2 cases in the United States (Wang et al., 2015)
  • Investigators who conducted a systematic review of the research on the efficacy of the Atkins, South Beach, Weight Watchers, and Zone diets found that there was insufficient data to identify one diet as more effective or beneficial than the
others. All four diets resulted in modest weight loss in the short term but failed to show sustained weight loss at 12 months or longer (Atallah et al., 2014)

**Red Flags**

- Low-carbohydrate/high-protein diets (e.g., the Atkins diet) are associated with greater weight loss during the first 6 months than traditional calorie-reduction diets in which carbohydrate, fat, and protein are balanced, but there is no difference in weight loss between the two methods after 1 year. Following a diet that is higher in protein and dairy can reduce bone loss during weight loss; however, low-carbohydrate/high-protein diets are linked to increased mortality (Cioffi et al., 2014)

**Discharge Planning**

- Patients should be encouraged to eat a calorie-appropriate diet that includes a variety of fruits and vegetables, lean proteins, and unsaturated fats (including omega-3); is high in fiber (e.g., whole unrefined grains and legumes); and is low in saturated fats. (For more information on eating a balanced diet, see the USDA food guidance system ChooseMyPlate at [https://www.choosemyplate.gov/](https://www.choosemyplate.gov/))
- Regular physical activity is vital to maintaining weight loss and for overall good health

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### References


