

# Position of the Academy of Nutrition and Dietetics: Interventions for the Treatment of Overweight and Obesity in Adults



## ABSTRACT

It is the position of the Academy of Nutrition and Dietetics that successful treatment of overweight and obesity in adults requires adoption and maintenance of lifestyle behaviors contributing to both dietary intake and physical activity. These behaviors are influenced by many factors; therefore, interventions incorporating more than one level of the socioecological model and addressing several key factors in each level may be more successful than interventions targeting any one level and factor alone. Registered dietitian nutritionists, as part of a multidisciplinary team, need to be current and skilled in weight management to effectively assist and lead efforts that can reduce the obesity epidemic. Using the Academy of Nutrition and Dietetics' Evidence Analysis Process and Evidence Analysis Library, this position paper presents the current data and recommendations for the treatment of overweight and obesity in adults. Evidence on intrapersonal influences, such as dietary approaches, lifestyle intervention, pharmacotherapy, and surgery, is provided. Factors related to treatment, such as intensity of treatment and technology, are reviewed. Community-level interventions that strengthen existing community assets and capacity and public policy to create environments that support healthy energy balance behaviors are also discussed.

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## POSITION STATEMENT

It is the position of the Academy of Nutrition and Dietetics that successful treatment of overweight and obesity in adults requires adoption and maintenance of lifestyle behaviors contributing to both dietary intake and physical activity. These behaviors are influenced by many factors; therefore, interventions incorporating more than one level of the socioecological model and addressing several key factors in each level may be more successful than interventions targeting any one level and factor alone.

**T**HE PURPOSE OF THIS ARTICLE is to provide an update to the 2009 position paper on adult weight management and incorporate the revised Academy's evidence-based adult weight-management guidelines from the Evidence Analysis Library (EAL) and the 2013 American Heart Association, American College of Cardiology, and The Obesity Society (AHA/ACC/TOS) Guideline for the Management of Overweight and Obesity in Adults.<sup>1</sup> The scope of the paper has been expanded to include a socioecological approach and provide evidence regarding community-based and policy-level interventions designed to reduce the prevalence of overweight and obesity in communities in the United States. Within those areas in which various interventions are described, included

evidence focuses as much as possible on systematic reviews and/or meta-analyses, randomized controlled trials (RCTs), and other evidence-based guidelines.

In 2012, 34.9% of adults in the United States were obese and another 33.6% were overweight.<sup>2</sup> The high prevalence of overweight and obesity in the United States negatively affects the health of the population, as obese individuals are at increased risk for developing several chronic diseases, such as type 2 diabetes, cardiovascular disease (CVD), and certain forms of cancer.<sup>1,3</sup> Because of its impact on health, medical costs, and longevity, reducing obesity is considered to be a public health priority.<sup>4</sup>

Weight loss of only 3% to 5% that is maintained has the ability to produce clinically relevant health improvements (eg, reductions in triglycerides, blood glucose, and risk of developing type 2 diabetes).<sup>1</sup> Larger weight loss reduces additional risk factors of CVD (eg, low-density and high-density

This Academy position paper includes the authors' independent review of the literature in addition to systematic review conducted using the Academy's Evidence Analysis Process and information from the Academy's Evidence Analysis Library (EAL). Topics from the EAL are clearly delineated. For a detailed description of the methods used in the Evidence Analysis Process, go to [www.andevidencelibrary.com/eaproces](http://www.andevidencelibrary.com/eaproces).

Recommendations are assigned a rating by an expert work group based on the grade of the supporting evidence and the balance of benefit vs harm. Recommendation ratings are Strong, Fair, Weak, Consensus, or Insufficient Evidence.

Recommendations can be worded as conditional or imperative statements. Conditional statements clearly define a specific situation and most often are stated as an "if, then" statement, while imperative statements are broadly applicable to the target population without restraints on their pertinence.

Evidence-based information for this and other topics can be found at [www.andevidencelibrary.com](http://www.andevidencelibrary.com) and subscriptions for nonmembers can be purchased at [www.andevidencelibrary.com/store.cfm](http://www.andevidencelibrary.com/store.cfm).

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lipoprotein cholesterol and blood pressure) and decreases the need for medication to control CVD and type 2 diabetes. Thus, a goal of weight loss of 5% to 10% within 6 months is recommended.<sup>1</sup>

**EAL Recommendation:** “The registered dietitian nutritionist (RDN) should collaborate with the individual regarding a realistic weight-loss goal such as one of the following: up to 2 lb per week, up to 10% of baseline body weight, or a total of 3% to 5% of baseline weight if cardiovascular risk factors (hypertension, hyperlipidemia, and hyperglycemia) are present.” (Rating: **Strong, Imperative**)

### GOALS OF ADULT OBESITY TREATMENT

While intentional weight loss of at least 3% to 5% improves some clinical parameters,<sup>1</sup> to sustain these improvements, this degree of weight loss needs to be maintained. While there is no standard definition for length of time for maintenance of weight loss for it to be considered successful, duration of 1 year is often used.<sup>5</sup> While long-term weight-loss maintenance is one of the challenges in obesity treatment, it is possible. For example, the Look AHEAD (Action for Health in Diabetes) trial, an RCT with >5,000 adults with type 2 diabetes, reported that 39.3% of the 825 participants who received a lifestyle intervention (consisting of a reduced-energy dietary and physical activity prescription, and a cognitive behavioral intervention) who lost at least 10% of their body weight at year 1 maintained at least a 10% weight loss at year 8, and another 25.8% maintained a 5% to <10% weight loss at year 8.<sup>6</sup>

To achieve a reduction in weight that can be sustained over time and improve cardiometabolic health, obesity treatment ideally produces changes in lifestyle behaviors that contribute to both sides of energy balance in adults. Thus, the diet should be altered so that reductions in excessive energy intake and enhancements in dietary quality occur, so that the likelihood of achieving recommendations provided in the 2010 Dietary Guidelines for Americans (DGA)<sup>7</sup> is increased. Along with changes in dietary intake, obesity treatment should encourage increases in physical activity in order to increase energy

expenditure, in the minimum to meet the 2008 Physical Activity Guidelines for Americans (150 minutes per week of moderate-intensity, or 75 minutes per week of vigorous-intensity physical activity)<sup>8</sup> and ideally to meet the American College of Sports Medicine’s Position Stand for weight-loss maintenance (>250 minutes/wk of moderate-intensity physical activity),<sup>9</sup> and enhance cardiovascular fitness. Preservation of changes in lifestyle behaviors is required to achieve successful weight-loss maintenance.<sup>10</sup>

### FACTORS INFLUENCING FOOD INTAKE

Eating behavior is generally believed to be influenced by both internal and external cues.<sup>11,12</sup> Internally, two systems have been identified that assist with regulating intake.<sup>11</sup> The first system is the homeostatic system, in which neural, nutrient, and hormonal signals allow communication between the gut, pancreas, liver, adipose tissue, brainstem, and hypothalamus. The arcuate nucleus of the hypothalamus integrates these signals and regulates hunger, satiation, and satiety in response to the signals via higher cortical centers that influence the sympathetic and parasympathetic nervous system, gastric motility and hormone secretion, and other processes relevant to energy homeostasis. The second internal system is the hedonic system, which is influenced by the hedonic (“liking”) and rewarding (“wanting”) qualities of food and is regulated by the corticolimbic system.<sup>11,12</sup> It is through the hedonic system that environmental cues influence consumption.<sup>11,12</sup> The hedonic system does have a strong impact on intake, as is demonstrated in situations when eating occurs after reports of satiation and when there is no nutrition need (eg, the dessert effect).<sup>12</sup> It is believed that cross talk does occur between these two internal systems; however, little is known about this process.<sup>11</sup>

Many external factors influence consumption, but environmental variables that appear to greatly influence intake are food availability and variety and energy density and portion size of food.<sup>12</sup> Research has found that when availability, variety, energy density, and portion size increase, intake is heightened.<sup>12</sup> The increased intake appears to

be outside of awareness, is not associated with enhanced satiation, and compensation does not appear to occur over time.

### FACTORS INFLUENCING ENGAGING IN MODERATE- TO VIGOROUS-INTENSITY PHYSICAL ACTIVITY

As with food intake, there are internal and external factors that influence how much moderate- to vigorous-intensity physical activity (MVPA) one engages in. Internally, physical limitations and discomfort and beliefs about how MVPA influences health have been related to amount of MVPA achieved.<sup>13</sup> Mood and, specifically, core affective valence (eg, good/bad feelings) in response to engaging in MVPA are related to future physical activity.<sup>14</sup> Also as engaging in regular MVPA involves consistently making decisions to engage in a behavior that requires costs to achieve the long-term cumulative health benefits, it is theorized that strong executive control and optimized brain structures supporting executive functioning (ie, dorsolateral prefrontal cortex) is an important internal factor.<sup>15</sup>

The social and physical environments are also believed to be factors that influence engaging in MVPA. How supportive other individuals are to MVPA efforts and the potential interaction with others who are active are external factors that can promote physical activity.<sup>13</sup> Different physical environmental dimensions, such as walkability, land use, public transportation availability, safety, and aesthetics, in residential and/or work neighborhoods have also been shown to influence physical activity.<sup>16</sup> Finally, within a home or work setting, the option of engaging in sedentary behaviors, especially those that are screen-based, can also influence MVPA.<sup>17</sup>

### SOCIOECOLOGICAL MODEL OF OBESITY INTERVENTION

The socioecological model provides a framework that proposes that multiple levels of influence can impact energy-balance behaviors and weight outcomes. Levels of influence include intrapersonal factors, community and organizational factors, and government and public policies.<sup>18</sup>

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