

# American College of Preventive Medicine Practice Policy Statement

## Weight Management Counseling of Overweight Adults

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**Overview:** On the basis of a review of the current literature and recommendations, the American College of Preventive Medicine presents a practice policy statement on weight management counseling of overweight adults.

**Medical Subject Headings (MeSH):** counseling, diet therapy, exercise, health behavior, obesity, primary health care, weight loss (Am J Prev Med 2001;21(1):73-78) © 2001 American Journal of Preventive Medicine

### Burden of Suffering

Obesity is the most common condition encountered by primary care physicians in the United States.<sup>1</sup> By criteria of the International Obesity Task Force<sup>2</sup> (body mass index [BMI] >25), approximately 55% of the U.S. adult population is overweight. Obesity has recently been categorized as Class I (BMI 30-34.9), Class II (BMI 35-39.9), and Class III (BMI ≥40).<sup>2</sup> The overall prevalence of obesity (BMI >30) has increased from 12.8% in 1971-1974 to 22.5% in 1988-1994; the prevalence of overweight (BMI 25-29.9) has remained fairly constant during the same period.<sup>2</sup> The prevalence of Class II obesity has increased from 2.8% to 5.2% and Class III obesity from 1.3% to 2.9%.<sup>2</sup>

Obesity is associated with social stigma, poor self-esteem,<sup>3</sup> and economic disadvantage,<sup>4</sup> as well as coronary heart disease, hypertension, chronic pulmonary diseases, diabetes mellitus, osteoarthritis, hypercholesterolemia, some cancers, and increased all-cause mortality.<sup>5</sup> Multiple longitudinal cohort studies have linked obesity to increased mortality even after adjustment for age and smoking.<sup>6-8</sup> Obesity may confer some protection against osteoporosis, although such benefit may be offset by physical inactivity, which is also associated with obesity.<sup>9</sup> Cross-sectional surveys of the American population reveal that approximately 71% of women and 62% of men are engaged in weight-loss efforts at any given time.<sup>10</sup>

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### Description of Preventive Measures

Although the pathogenesis of obesity is highly complex, the fundamental determinants of weight regulation can be simplified to energy consumption and energy expenditure. Thus, basic means of obesity prevention pertain to reducing energy intake, increasing energy expenditure, or both. Dietary energy restriction is widely viewed as essential to successful weight loss, whereas physical activity is of particular importance in weight maintenance.<sup>11</sup>

Most experts support a diet abundant in complex carbohydrate, restricted in total fat, and moderate in protein,<sup>12</sup> in accord with the U.S. Department of Agriculture's food guide pyramid. Increased energy expenditure through physical activity, reduction of energy intake by dietary modification, and the strategies to promote these behaviors are the principal means of obesity prevention in the clinical setting. Behavioral counseling promotes motivation and provides strategies for overcoming barriers to compliance with dietary or physical activity goals. Behavioral interventions include stimulus control, reinforcement techniques, self-monitoring, behavioral contracting, and social support programs.<sup>13</sup> Commercial weight-loss programs (e.g., Jenny Craig or Weight Watchers) use a combination of these interventions.<sup>14</sup>

Modalities used in obesity management (secondary and tertiary prevention) include pharmacotherapy (appetite suppressants), extreme restrictions of energy intake in the form of liquid diets, and surgery.<sup>13,14</sup> Older surgical procedures, such as jejunioileal and jejunocolic bypass and jaw wiring, have been replaced with gastric bypass, gastroplasty, silicone gastric balloons, and, more recently, laparoscopic adjustable silicone gastric banding.<sup>15</sup> Commercially available formula diets range from canned liquid formula to macrobiotic diets that use a combination of nutrients in varying

proportions.<sup>14</sup> Supervised dietary interventions include reduction in caloric intake to low (1200–1500 kcal) or very low (<800 kcal) levels, reduction in fat intake to 10%–15% of calories, or reduction of both caloric and fat intakes. In clinical practice, two or more of these modalities are often used in combination.

### Evidence of Effectiveness

Many of the ill effects of obesity are preventable by avoiding weight gain and are thought to be partly or wholly reversible by reduction in weight. Even modest weight loss can reduce cardiovascular risk and mortality,<sup>16,17</sup> lower blood pressure, decrease insulin resistance, and reduce healthcare costs, at least in the short term.<sup>18</sup>

A consistent body of evidence links dietary fat intake to body fat, likely because of the energy density of fat; high-fat diets tend to be high-energy diets.<sup>19</sup> There is no evidence (once controlling for fat intake) linking carbohydrate intake to obesity risk<sup>20</sup> on a population basis. Similarly, to date there is no evidence in support of claims that carbohydrate-restricted diets, such as the popular Atkins' diet, are effective in promoting sustainable weight loss. Satiety relates to appetite control and consequently to weight regulation. Available evidence suggests that protein is more satiating than carbohydrate or fat; high-fiber carbohydrate has a satiety index nearly comparable to protein.<sup>12</sup>

Dietary modification (dieting) can generally achieve modest, short-term weight reduction. Average weight loss on a low-calorie diet (1200 kcal/day) of 8.5 kg in 20 weeks has been reported, as has 20 kg over 16 weeks on a very low-calorie diet (VLCD [800 kcal/day]).<sup>21</sup> However, a variety of VLCDs often used as a component of commercial weight-loss programs or available through the use of formula diets or drinks have shown only short-term benefits without evidence of long-term success.<sup>22</sup> For most individuals who use dieting as a means to lose weight, it has been reported that most of the weight lost in the early phase (16–20 weeks) is regained within 2–5 years.<sup>23</sup> One meta-analysis suggests that, although dieting alone is associated with significant weight loss in the short term, the chance of long-term maintenance of weight loss is significantly increased when diet is combined with exercise.<sup>24</sup> With sustained intensive counseling, maintenance of weight loss is achievable. In a randomized controlled trial, extensive weight-loss counseling by a public health nurse over 1 year produced sustained weight loss; at the end of 7 years, men had lost 8.7 kg and women 3.5 kg, on average.<sup>25</sup>

Multiple cohort and cross-sectional studies have shown an association between obesity and inactivity.<sup>26</sup> There is the possibility that this relationship is bidirectional, with obesity discouraging physical activity and inactivity promoting weight gain.<sup>9</sup> The magnitude of

weight loss with regular exercise alone is modest and generally less than that achieved with caloric restriction.<sup>27–29</sup> Exercise in combination with caloric restriction leads to relatively greater fat loss,<sup>30</sup> preserves lean body mass, and has been shown to maintain initial weight loss.<sup>24,27</sup> Physical activity and the increased muscle mass that results may partially counteract the decline in basal metabolic rate that typically accompanies weight loss, conferring some protection against weight regain.<sup>31</sup> Even in the absence of significant weight loss, regular exercise often confers considerable health benefits, including salutary effects on the lipid profile, improved cardiovascular fitness, enhanced psychological well-being, and reduced risk of mortality.<sup>32</sup>

Pharmacotherapy is generally reserved for patients with BMI >30 (>27 if significant comorbid conditions are present). Multiple randomized controlled trials of appetite suppressant drugs, funded principally by the pharmaceutical industry, have demonstrated effectiveness in short-term weight loss.<sup>33,34</sup> Weight is generally regained when medication is discontinued, however, and the safety of long-term medication use is uncertain.<sup>35</sup> The combination of fenfluramine or dexfenfluramine with phentermine, commonly known as fen-phen, was linked to cases of cardiac valvular injury, leading to the withdrawal of fenfluramine and dexfenfluramine from the market in 1997.<sup>36</sup> Recently approved medications for weight loss include sibutramine, a reuptake inhibitor of norepinephrine and serotonin, and orlistat, an inhibitor of intestinal lipid peroxidase.<sup>37,38</sup> In a 2-year randomized placebo-controlled trial of the latter, the treatment group that received dietary intervention and orlistat lost more weight and was slightly less likely to regain the lost weight than control subjects treated with placebo.<sup>38</sup> In addition to relatively greater weight loss, a recent randomized controlled trial suggests that use of orlistat by obese adults may delay or prevent the onset of diabetes.<sup>39</sup> The effect of currently available medications on weight loss appears rather modest, and efficacy may plateau with sustained use. It has not yet been established that long-term weight-loss maintenance can be achieved through use of medications.<sup>35</sup>

Cognitive-behavioral therapy is effective in producing negative energy balance through the maintenance of healthy behaviors during active therapy periods but lacks long-term efficacy.<sup>13</sup> Trials that incorporate behavioral therapy show short-term mild to modest benefit, but weight is generally regained after the program of behavioral intervention is terminated.<sup>13,40</sup>

Formula and fad diets have not been rigorously tested in trials. In one trial, which compared replacement of carbohydrate by protein in fat-reduced diets consumed ad libitum, weight loss was greater in the high-protein group (5.1 kg with high-carbohydrate diet vs 8.9 kg with high-protein diet).<sup>41</sup> However, another trial did not replicate those results and showed that

there was no significant difference in the amount of weight loss in response to diets containing either 15% (8.9 kg) or 45% (7.5 kg) carbohydrate.<sup>42,43</sup> Despite the proliferation of highly successful diet books advocating low-carbohydrate, high-protein or high-fat diets for weight loss,<sup>44-46</sup> the evidence in support of this success in the peer-reviewed medical literature is virtually nonexistent.

Similarly, the effectiveness of commercial weight-loss programs is uncertain. Data from prospective follow-up studies are not reliable because of the effect of subjects' self-selection. There are few, if any, long-term data of direct comparisons between commercial weight-loss programs and other modalities. In one follow-up survey of a commercial diet program, only 23% of the subjects maintained 75% of their weight loss after leaving the diet program, 57% maintained at least 5% of the loss, and 40% gained back more than they had lost during the diet.<sup>47</sup> In a randomized controlled trial comparing a commercial weight-loss program with self-help, participants in the commercial program and self-help program lost 1.87 and 0.77 kg, respectively, after only 4 weeks' follow-up.<sup>48</sup>

Surgical gastroplasty and gastric bypass are reserved for severely obese patients (BMI >40) and for those with BMI >35 with significant comorbidity.<sup>49,50</sup> Although gastric bypass surgery leads to higher initial weight loss than gastric banding, the complication rate with the former surgery is higher.<sup>15</sup> In one of the few trials that directly compared VLCD with gastroplasty, maximum weight loss did not differ. However, the VLCD group regained significantly more weight than the surgery group after 2 years.<sup>51</sup> In the prospective Swedish Obese Subjects study, subjects who underwent surgery lost, on average, significantly more weight than the conventionally treated group after 2 years of follow-up (surgery, 28 kg; conventional therapy, 0.5kg); the surgically treated group also experienced greater improvement in an array of metabolic sequelae of obesity.<sup>52</sup>

Data from prospective cohort studies indicate reduced all-cause, diabetes-associated, and cardiovascular mortality with intentional weight loss.<sup>16</sup> To date, there are no randomized controlled trials to investigate the effect of weight loss on mortality. Moreover, it is not known whether weight-loss interventions are cost effective or cost beneficial, given that weight loss is generally not sustained. Studies suggest that a sustained 10% weight loss is expected to extend life expectancy by 2-7 months and to reduce expected lifetime medical care costs of chronic medical conditions (diabetes, hypertension, hypercholesterolemia, coronary artery disease, and stroke) by \$2200-\$5300.<sup>53</sup> One study suggests that surgical intervention may be more cost effective in the long run than medical treatments because of persistent weight reduction after surgery. However, in that study

the average cost per pound of weight loss was approximately \$250.<sup>54</sup>

Current weight-loss methods are not without risk. Weight cycling because of repeated dieting has been associated with cardiovascular events and increased mortality in retrospective cohort studies, although a meta-analysis failed to corroborate those findings.<sup>55,56</sup> In the past, VLCDs were associated with cardiac arrhythmia related to myocardial protein loss and electrolyte abnormalities.<sup>57</sup> Other significant side effects of VLCDs include gout, gallstones, fatigue, hair loss, cold intolerance, and diarrhea, but risks are lower and generally manageable in a supervised medical setting with adequate replenishment of essential amino acids and micronutrients.<sup>57,58</sup> Gastroplasty is associated with gastric ulceration, perforation, and bowel obstruction, but such risks have declined with the advent of laparoscopy.<sup>50</sup>

### Public Policy Considerations

Obesity is a major public health problem.<sup>59</sup> Costs attributable to obesity totaled \$99.2 billion in 1995 (5.7% of our National Health Expenditure), with \$51.64 billion in direct medical costs, \$3.9 billion (39.2 million days) in lost work, 239 million restricted-activity days, 89.5 million bed-days, and 62.6 million physician visits.<sup>60</sup> As noted, the prevalence and, therefore, the public health effect of obesity continues to rise.<sup>2,59</sup> Many chronic diseases in developed countries are linked in one way or another to obesity; weight gain is often a preceding event in the development of cardiovascular disease, diabetes, hypertension, and hyperlipidemia.<sup>5</sup> Approximately 50 million Americans (25% of the adult population) have hypertension; 58 million have cardiovascular disease; 39.4 million (20%) have a serum cholesterol level >240 mg/dL; and 15.7 million (6.7%) have diabetes.<sup>61,62</sup> Billions of dollars are spent in treating these conditions. Even modest weight loss (e.g., 5%-10% of body weight) can lead to better control of hypertension and diabetes, with reduced need for medication.<sup>18</sup> Despite the escalating prevalence of obesity, physicians and healthcare providers have no proven intervention with evidence of long-term success to offer.

Most obese patients attempt some sort of dietary modification before they consult a physician. Health education and dietary counseling of patients have the capacity to influence dietary behaviors in obese patients, although the effect of such counseling is subject to debate.<sup>63,64</sup> Healthcare providers frequently fail to engage in weight-loss counseling<sup>64,65</sup> because of several established barriers, including lack of time, perceived patient noncompliance, perceived inability to change patient behaviors,<sup>66</sup> and lack of pertinent education.<sup>12</sup> Despite these barriers, application of behavior modification theory to dietary counseling shows some prom-



ise,<sup>67</sup> and efforts are under way to adapt such techniques to the setting of primary care.<sup>68</sup>

### **Recommendations of Other Groups**

The U.S. Preventive Services Task Force recommends periodic height and weight measurement and counseling to encourage a prudent diet and consistent physical activity in all patients.<sup>69</sup> The Canadian Task Force on Preventive Health Care asserts that, for obese adults without obesity-related diseases, there is insufficient evidence to recommend for or against weight-reduction therapy because of a lack of evidence supporting the long-term effectiveness of weight-reduction methods; for obese adults with obesity-related diseases (e.g., diabetes mellitus and hypertension), weight reduction is recommended because it can alleviate symptoms and reduce drug therapy requirements, at least in the short term. There is insufficient evidence to recommend the inclusion or exclusion of BMI measurement as part of a periodic health examination.<sup>70</sup> The National Institutes of Health (NIH) National Heart, Lung, and Blood Institute's clinical guidelines recommend treatment of obese and overweight subjects with additional health risk factors with a combination of modalities, including low-caloric diet, exercise, and behavioral therapy. The NIH consensus panel concluded that pharmacotherapy cannot be recommended for routine use until more data are available. Pharmacotherapy is selectively recommended as indicated for those with BMI >30 without additional health risk factors and >27 for those with additional risk factors. Surgery is recommended in selected patients with BMI >40 without comorbidities and 35–40 in those with comorbidities.<sup>71</sup> The American Dietetic Association supports the prevention of obesity in children and adults through nutrition and health education (by registered dietitians and other health-care professionals) with consideration of health risks, heredity, age, gender, percentage of body fat, and realistic goal setting. Weight-control programs should include behavioral management techniques for healthy eating, regular exercise, effective stress management, and improved self-esteem, with a focus on loss of body fat and avoidance of repeated diet failures.<sup>72</sup> Both the NIH consensus panel and the American Dietetic Association consider VLCDs to be relatively safe for moderately to severely obese adults in supervised settings.<sup>73,74</sup> The American Academy of Family Physicians recommends periodic height and weight measurements in all patients, as well as counseling to maintain caloric balance and to replace fat with fiber in the diet in patients aged >2 years.<sup>75</sup> The American Heart Association recommends measures of patients' weight and height, BMI, and waist-to-hip ratio at each visit as part of a routine evaluation, as well as weight management and physical activity counseling as appropriate.

### **Rationale Statement**

To summarize, there is conclusive evidence that obesity is associated with increased morbidity and mortality and imposes a substantial economic burden both at the individual and societal level. Weight reduction, at least in the short term, has been shown in small prospective cohort and randomized controlled trials to confer beneficial health effects. However, there is no convincing evidence for the consistent effectiveness of any single, currently used, weight-loss method. Most trials have been conducted with relatively few subjects and with follow-up limited to <2 years. Outcome data from intervention trials, including the use of pharmacotherapy, are generally lacking beyond 1–2 years. There is limited evidence from cross-sectional and nonrandomized trials that counseling patients to lose weight is efficacious. The benefits of gradual intentional weight loss appear to far exceed associated risks under most circumstances, especially when professional guidance is provided. The primary behavioral predictors of weight control, namely prudent dietary pattern in accord with guidelines and consistent physical activity, should be stressed, as such practices confer benefits independent of weight regulation (e.g., improved cardiovascular fitness with exercise and potentially reduced risk of chronic disease with adoption of a healthful diet). A single best strategy for weight loss or maintenance has yet to be defined. Available evidence favors a combination of prudent diet in accord with national guidelines and physical activity, with the application of supportive behavior modification methods in clinical practice. Treatment goals should focus on long-term outcomes rather than short-term weight loss; as is true of most chronic conditions, obesity appears to require long-term therapy and management. Given the difficulties in managing or reversing obesity, population-based strategies for obesity prevention deserve increasing emphasis and attention. The optimal timing and methods for such prevention programs is uncertain at present, but opinion increasingly favors establishing health-promoting behaviors in early childhood. A systematic review of public health approaches to obesity prevention and control, funded by the Centers for Disease Control and Prevention (CDC), is under way (Evidence Based Guidelines—Obesity Prevention and Control, CDC Special Interest Project No. 8, 2001). Emphasis on weight maintenance over time in lean patients is also indicated.

### **Recommendation of the American College of Preventive Medicine**

Independent of weight or BMI, all adult patients should consistently receive counseling about healthful dietary and physical activity patterns in the context of primary

care. Such counseling should be reinforced in the context of specialty care (e.g., cardiology) as dictated by clinical judgment and discretion. Periodic measurement of BMI (weight in kilograms/height in meters<sup>2</sup>) is recommended for all adults. Although an emphasis on health-promoting behaviors may be preferred to an emphasis on weight per se, weight monitoring is considered useful to both clinician and patient in gauging the adequacy of behavioral interventions. The American College of Preventive Medicine (ACPM) endorses the practical guidelines of the NIH in advising obese and overweight patients.<sup>71</sup> Moderate physical activity for 30–45 minutes, at least 3–5 days per week, should be encouraged for all patients unless specifically contraindicated. Overweight or obese patients should be counseled regarding an energy-reduced, or low-calorie diet (800–1500 kcal/day). Surgery should be reserved for severely obese subjects (generally, BMI >40). Evidence available to date is insufficient to support any specific behavioral therapy, short-term use of pharmacotherapy, or chronic pharmacotherapy; such interventions should be individualized in accord with clinical judgment. Clinicians are encouraged to apply prevailing models of behavior modification, such as the Stages of Change, in support of counseling by clinicians for weight control. Physicians should be attentive to the stigmatizing effects of obesity and should strive to address weight-control counseling of patients in a manner that supports, rather than erodes, patients' self-esteem.<sup>68</sup> As a large proportion of obese patients will have engaged in multiple unsuccessful weight-control efforts, the ACPM encourages an approach to counseling that distinguishes between blame for weight gain and responsibility for weight control, in an effort to prevent exacerbation of the well-documented psychological sequelae of obesity. Specifically, those patients with multiple failed attempts at weight control should receive counseling directed at the impediments to weight control and strategies for circumventing them. ACPM encourages further research into the pathogenesis and treatment of obesity, as well as initiatives to enhance physician–patient interaction regarding weight management and to minimize barriers to such counseling. Ultimately, for obesity control at the population level, environmental modification to support healthful eating and levels of physical activity is likely to be necessary.

The lack of clearly effective treatment for obesity once established requires that obesity prevention be addressed consistently in clinical practice. Counseling by clinicians to encourage health-promoting dietary patterns and levels of physical activity in all patients is therefore warranted, both as a means to control weight and to confer health benefits by other means.

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