CPEU ARTICLE


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Learning Objectives:
After reading this, RDNs will be able to:
1. Describe the process used by AHA/ACC/TOS and NHLBI to develop these guidelines.
2. Delineate the key principles of the 2013 Management of Overweight and Obesity Guidelines and how RDNs can apply them to the prevention and management of overweight and obesity.
3. Identify the evidence-based options for weight loss that can be recommended to patient/clients based upon their health risk profile and individual needs and desires.
4. Discuss the key assets RDNs bring to the prevention and management of overweight and obesity.

History, Background and Context
Overweight and obesity is at epidemic proportions in the U.S., tipping the proverbial scales at 69%, 36% of these individuals are obese and the remainder are classified as being overweight (3). The leading cause of death in the U.S. remains cardiovascular disease (CVD). Approximately 68 million Americans have hypertension, 71 million have elevated LDL-Cholesterol which puts them at risk for CVD (4). Every organ of the body is affected by excess body weight and the heart is no exception. Overweight and obesity can lead to ventricular hypertrophy, higher risk of fatal and non-fatal stroke, high blood pressure and prediabetes and type 2 diabetes. These concerning facts led the National Heart Lung and Blood Institute (NHLBI) in 2005 to bring together thought leaders from clinical areas relevant to CVD to establish a process to integrate the science and clinical recommendations for CVD. This step led to the updating and integration of the blood pressure, cholesterol and obesity guidelines that had, in the past, been researched and disseminated through the NHLBI (3).
Continuing Professional Education Section

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In late 2013, Guidelines for the Management of Overweight and Obesity in Adults were jointly released by American Heart Association (AHA), the American College of Cardiology (ACC) and the Obesity Society (TOS) (1,2). The WM DPG leadership believes it is important for the WM DPG membership to be knowledgeable about these guidelines, understand the context within which they were developed and be aware of their implications. This CPE article, written by two members of the expert panel for overweight and obesity, both registered dietitians and members of WM DPG, summarizes the development, findings and recommendations of these recently released overweight and obesity guidelines.

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Panels of experts were selected to update these blood pressure, cholesterol and obesity guidelines. For the first time, panel members were also placed on two cross cutting work groups for the purpose of integrating the work of all of the expert panels. These cross cutting panels included a lifestyle panel to examine diet and physical activity related risks for CVD without weight loss and another panel to examine methods for assessing CVD risk. The tasks assigned to these panels were to develop guidelines that reflected the most recent evidence, determine where updates to the last set of guidelines were needed and to answer new questions that would enrich clinical practice and identify areas for future research.

Unique to the work of these panels and work groups was that the development of these NHLBI guidelines would use the same methods and structure to allow them to blend together as easily as possible when published. In all, there were 16 questions answered by the five panels; each of the 16 questions were further deconstructed into many sub-questions. The expert panels reviewed the evidence and then rated the strength of the evidence after an independent team rated the quality of thousands of peer reviewed published articles. Depending upon the last updated information, (in the case of the overweight and obesity panel it was 1998), data was culled from the last update until 2010/11.

It took five years, 23 meetings (conducted both virtual and in-person) and the examination of thousands of articles, to identify a sufficiently sound body of literature to answer each of the critical questions discussed in this summary. The expert panel for overweight and obesity included both practitioners and researchers.

Summary of the Research Literature Reviews

After the expert panel for overweight and obesity was selected and the questions and criteria identified, an independent, external company was hired by NHLBI to search the literature for each question, using criteria developed by the panel members. This external group then rated the quality of each of the studies as good, fair and poor with additional review and insight from the panel. From here, evidence tables were created. The panel then graded the evidence with the help of the external company to ensure that the grades were based on the evidence, not the clinical experience of expert panel members. When possible, only randomized clinical trials (RCTs) with either a “good” or “fair” rating were used as evidence. In some cases, RCTs were not available. If this was the case or in the case of certain questions where resources were not sufficient to review the original literature, then systematic reviews and observational studies were used. The study quality ratings were based on certain criteria such as:

1. Was the method of randomization adequate (i.e., use of randomly generated assignment)?
2. Were the groups similar at baseline on important characteristics that could affect outcomes (e.g., demographics, risk factors, co-morbid conditions)?
3. Was the overall drop-out rate from the study 20% or lower? (This was particularly difficult criteria for weight loss intervention studies.).
4. Was the differential drop-out rate (between treatment groups) 15 % or lower?
5. Were all randomized participants included in the analysis of the group to which they were originally assigned, i.e., did the researchers use an intention-to-treat analysis?

The following are examples of the criteria for the quality ratings as well as some of the common flaws seen in the study designs:

A well-designed, well-executed RCT that adequately represented populations to which results were applied and directly assessed effects on health outcomes, was rated “high.” If, however, there were any differences in the treatment between randomized groups of subjects, this could result in a “fair” rating if there was a minor difference but not sufficient to invalidate the study, or “poor” rating if egregious and indicating significant risk of bias. For example, if one intervention group received dietary information and coupons to purchase certain foods, and the other group was given food but the group given food was also telephoned a couple of times, this would reduce the quality of the RCT because the two groups received different levels of treatment. Another factor leading to a lower rating was the lack of inclusion of an intent-to-treat analysis. Many studies had analysis strategies that did not include drop-outs, even when the drop-out rate in the study was substantial. This made the results look strong, but they...
were positively biased. Again, this led to certain studies being rated as “poor” and omitted from consideration by the panels and workgroups. It is the reason why from the thousands of studies culled a much smaller number were considered relevant in this systematic review.

**Updating the 1998 Evidence Report on Overweight and Obesity**

The first set of clinical guidelines for the treatment of overweight and obesity in adults was published in 1998 (5). The charge to that 1998 expert panel was twofold: 1) to cull the scientific literature from 1980-1997 and 2) to create recommendations for treatment for the practicing physician and other health care providers dealing with overweight and obese patients.

The 2013 guidelines add to the 1998 guidelines by reevaluating the association of body mass index (BMI) to CVD and its CVD risk factors. These updated guidelines used the same cutpoints for BMI because the Committee determined that there was insufficient data to recommend a change in criteria for overweight and obesity. In addition, the 2013 guidelines answer some new, relevant questions such as which dietary strategies are most successful for weight loss, which components of lifestyle modification treatment are most efficacious and which surgical procedures produce better outcomes. The 2013 panel used a rigorous evidence-based approach that involved a systematic review of the evidence with priority given to RCTs. The treatment algorithm directs those in clinical practice to consider various types of weight loss treatment or weight maintenance, not just based on BMI, but also dependent upon the patient’s own interest, the individual’s health profile, and success or failure of methods already attempted. Therefore, although there are commonalities between the algorithms from 1998 and 2013, one result of the 2013 guidelines was to encourage health practitioners to think differently about obesity. Clinicians should consider overweight and obesity as a chronic metabolic disorder associated with significant morbidity and mortality. It requires long-term treatment and has a high rate of relapse. Nonetheless, while the amount of weight that most people can lose and maintain is relatively limited, available evidence demonstrates that even modest weight loss, 3-5% (6), confers significant health benefits and greater amounts of weight loss are associated with better outcomes.

The 2013 guideline focused recommendations on five specific critical questions (CQ): the first two dealt with the risks of overweight and obesity and the benefits of losing weight. The latter three questions dealt with treatment and include the work RDNs do to help patients/clients survive within an obesigenic environment.

- **CQ 1: Benefits of weight loss – Is weight loss good for your patient/client?**
- **CQ 2: Risks of overweight – How do you identify who is at risk sufficiently to mandate weight loss efforts?**
- **CQ 3: Diets for weight loss – What is the efficacy/effectiveness of the different dietary intervention strategies to promote weight loss?**
- **CQ 4: Comprehensive Lifestyle Intervention (Diet+Physical Activity + Behavioral Therapy) – What is the efficacy/effectiveness of a combined approach to achieving and maintaining weight loss?**
- **CQ 5: Bariatric surgery – What are the benefits and risks of the various procedures?**

In exploring each of these questions, subquestions were developed and examined (for example, did effectiveness of the intervention differ by demographic or ethnic characteristics of the population?). The following are some of the evidence statements that were graded “high.”

- the greater the individual’s BMI, the greater the risk of CVD and type 2 diabetes (7,8);
- sustained weight loss of as little as 3-5% can result in meaningful improvements in the health profile (6);
- six months or more of lifestyle counseling produces the most successful outcomes (9–10);
- advise overweight and obese individuals who have lost weight to participate in a long-term (≥ 1 yr) comprehensive weight loss maintenance program (11,12,13);
- Weight loss at 2 to 3 years following a variety of surgical procedures in adults with presurgical BMI ≥ 30 varies from a mean of 20% to 35% of initial weight and mean difference from nonsurgical comparators of 14% to 37% depending on procedure (14–15).
- some 15 dietary regimens were found to be evidence-based and equally effective in inducing weight loss as long as they were calorie-restricted;

All of the above statements and references are detailed in the guidelines (1,2).

The research evidence demonstrated that all 15 evidence-based diets (see Table 1) reviewed performed equally well in promoting short and long-term weight loss in adults as long as the calorie intake was sufficiently restricted to induce weight reduction. For example, people following an “ad libitum” diet that severely restricted carbohydrates, still resulted in a lower-calorie intake and it was this calorie reduction, not the lower-carbohydrate intake, that seemed to result in weight loss.

These important findings indicate that RDNs and other health care providers, as appropriate, have a wide array of dietary intervention options to offer their clients for weight loss management. The 2013 overweight and obesity expert panel recommended that weight loss programs be tailored to the individual’s preferences and needs. It underscored that a “one size fits all” approach should be avoided in order to achieve long-term compliance and success. Among the challenges for the practitioner are to fully assess each individual’s health needs and lifestyle characteristics and to interpret them fully in establishing a sound, personalized approach to weight management. (See for the purpose of one example, www.healthmain.com for an evidence-based approach to personalize weight management and other nutrition-related interventions and medical nutrition therapy.)

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A comprehensive lifestyle intervention, consisting of diet, physical activity and behavioral therapy, providing onsite (in person) treatment in either group or individual sessions, weekly for the first month and then biweekly for 6 months, produced the greatest weight loss. Long-term programs, consisting of additional visits for more than a year, were most successful in reducing the amount of weight regain (12,13).

An interesting addition to the literature was the use of electronically delivered, comprehensive weight loss interventions (that is, web or other resources used in conjunction with health care professional contact). Although less efficacious than onsite, intensive comprehensive lifestyle intervention, electronic strategies/tools carried out in academic settings with the use of interactive websites, text messaging and/or emails as well as personalized feedback from trained interventionists (dietitians, behaviorists, and exercise specialists) have been shown to result in weight loss of up to 5 kg at 6-12 months in comparison to no or minimal intervention (16–18).

### Table 1. 15 Dietary Approaches Associated with Weight Loss by Expert Panel (1,2)

All of the following dietary approaches (listed in alphabetical order below) are associated with weight loss if reduction in dietary energy intake is achieved:

- A diet from the European Association for the Study of Diabetes Guidelines, which focuses on targeting food groups, rather than formal prescribed energy restriction while still achieving an energy deficit. Descriptions of the diet can be found in the Full Panel Report Supplement.
- Higher protein (25% of total calories from protein, 30% of total calories from fat, 45% of total calories from carbohydrate) with provision of foods that realized energy deficit.
- Higher protein Zone-type diet (5 meals/day, each with 40% of total calories from carbohydrate, 30% of total calories from protein, 30% of total calories from fat) without formal prescribed energy restriction but realized energy deficit.
- Lacto-ovo-vegetarian-style diet with prescribed energy restriction.
- Low-calorie diet with prescribed energy restriction.
- Low-carbohydrate (initially <20 g/day carbohydrate) diet without formal prescribed energy restriction but realized energy deficit.
- Low-fat (10% to 25% of total calories from fat) vegan style diet without formal prescribed energy restriction but realized energy deficit.
- Low-fat (20% of total calories from fat) diet without formal prescribed energy restriction but realized energy deficit.
- Low-glycemic load diet, either with formal prescribed energy restriction or without formal prescribed energy restriction but with realized energy deficit.
- Lower fat (< 30 % fat), high dairy (4 servings/day) diets with or without increased fiber and/or low-glycemic index/load foods (low-glycemic load) with prescribed energy restriction.
- Macronutrient-targeted diets (15% or 25% of total calories from protein; 20% or 40% of total calories from fat; 35%, 45%, 55%, or 65% of total calories from carbohydrate) with prescribed energy restriction.
- Mediterranean-style diet with prescribed energy restriction.
- Moderate protein (12% of total calories from protein, 58% of total calories from carbohydrate, 30% of total calories from fat) with provision of foods that realized energy deficit.
- Provision of high-glycemic load or low-glycemic load meals with prescribed energy restriction.
- The AHA-style Step 1 diet (with prescribed energy restriction of 1,500-1,800 kcal/day, <30% of total calories from fat, <10% of total calories from saturated fat).

The Registered Dietitian Nutritionist

The 2013 guidelines are an important milestone for RDNs. They specifically recommend, for the first time, that primary care and other health care providers refer overweight and obese patients to food and nutrition professionals (e.g., RDNs) for counseling on calorie-restricted dietary interventions. They also acknowledge the RDN as one of the qualified providers of comprehensive lifestyle interventions, the “gold standard” for weight management (weight loss and weight loss maintenance). This acknowledgement reflects the substantial evidence base reviewed by the expert panel including key professional backgrounds of providers of effective interventions for weight loss and weight loss maintenance. In exploring CQs 3 (diet strategies) the expert panel considered whether the RCTs of dietary interventions implemented largely by food and nutrition professionals in academic and health care environments were effective in promoting weight loss. These studies typically controlled physical activity and behavioral intervention methods across study arms. CQs 4 studies (comprehensive intervention) were typically conducted by trained interventionists (e.g., teams of RDNs, exercise specialists, and behaviorists) in university or health care settings and compared to “usual care” protocols (19).

It’s an opportune time for RDNs involved in weight management to embrace these 2013 overweight and obesity guidelines and advocate for their visibility and roles in the prevention and treatment of overweight and obesity in the population. No professional group was more strongly identified in this report as key in management of these conditions than RDNs. Multidisciplinary approaches were advocated and there is an opportunity for RDNs to lead and collaborate with others in seeking reimbursement for services and carrying out programs and initiatives in clinical, public health, worksite and educational settings where it is important to address the needs and problems facing Americans as they attempt to address weight-related issues.
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REFERENCES:


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