Adult Weight Management

AWM: Major Recommendations (2006)

Major Recommendations

Recommendations are categorized in terms of either conditional or imperative statements. While conditional statements clearly define a specific situation, imperative statements are broadly applicable to the target population and do not impose restraints on their application.

Conditional recommendations are presented in an if, then format, such that:

If condition, then action(s), because reason(s).

Fulfillment of the condition triggers one or more guideline-specified actions. In contrast, imperative recommendations include terms such as “require,” “must” and “should” and do not contain conditional text that would limit their applicability to specified circumstances.

Resources Available with Each Recommendation

In addition to the recommendation statement and strength rating, you will find on each recommendation page:

- A brief narrative summary of the evidence, analyzed to reach the recommendation
- A statement of justification, or reason for the strength of the recommendation
- Detailed information on the evidence supporting the recommendations and background narrative (available in the Supporting Evidence section, toward the bottom of each recommendation page)
- A reference list at the end of each recommendation page that includes all the sources used in the evidence analysis for the particular recommendation (each reference is hyperlinked to a summary of the article analyzed in the evidence analysis).

Recommendations By Topic

Below you will find a list of Adult Weight Management Recommendations organized by Topic. To see the Recommendation Summary, just click on the Recommendation title. Also view the Executive Summary of Recommendations or print the guideline features under Print Reports.

There is no independent recommendation regarding nutritional counseling as this is a practitioner skill that cuts across all recommendations.

Note: to print out all of the major recommendations in a single pdf document, select the Print Reports tab above.

Adult Weight Management (AWM) Major Recommendations

Nutritional Assessment and Treatment

- AWM: Classification of Overweight and Obesity
- AWM: Comprehensive Weight Management Program
- AWM: Optimal Length of Weight Management Therapy
- AWM: Realistic Weight Goal Setting
- AWM: Determination of Resting Metabolic Rate

Dietary Interventions

- AWM: Reduced Calorie Diets
- AWM: Eating Frequency and Patterns
- AWM: Portion Control
- AWM: Meal Replacements
- AWM: Nutrition Education

Selected Dietary Approaches

The work group examined the existing literature on some specific diets based on the availability of research as well as interest

- AWM: Low Glycemic Index Diets
- AWM: Dairy/Calcium and Weight Management
- AWM: Low Carbohydrate Diet

Physical Activity Interventions

**Recommendation(s)**

**AWM: BMI-Classification of Overweight and Obesity**

Body mass index (BMI) and waist circumference should be used to classify overweight and obesity, estimate risk for disease, and to identify treatment options. BMI and waist circumference are highly correlated to obesity or fat mass and risk of other diseases (NHLBI report).

**Rating: Fair**

**Imperative**

**AWM: Body Weight-Classification of Overweight and Obesity**

Body weight and waist circumference should be used to determine the effectiveness of therapy in the reassessment. BMI and waist circumference are highly correlated to obesity or fat mass (NHLBI report).

**Rating: Fair**

**Imperative**

**Risks/Harms of Implementing This Recommendation**

If a patient is very short (under 5 feet) or has a BMI above the 25 to 34.9 range, waist cutpoints used for the general population may not be applicable. In addition, BMI may overestimate body fat in athletes and others who have a muscular build and those with edema. BMI may underestimate body fat in older persons and others who have lost muscle mass.

**Conditions of Application**

Recommendation applies to adult men and adult nonpregnant women, and generally for all racial/ethnic groups.

**Potential Costs Associated with Application**

None.

**Recommendation Narrative**

The same BMI cutpoints can be used to classify the level of overweight and obesity for adult men and adult nonpregnant women, and generally for all racial/ethnic groups. NHLBI Evidence Category C.

Practitioners should use the BMI to assess overweight and obesity. Body weight alone can be used to follow weight loss, and to determine efficacy of therapy. NHLBI Evidence Category C.

The waist circumference should be used to assess abdominal fat content. NHLBI Evidence Category C.

Waist circumference cutpoints can generally be applied to all ethnic or racial groups. On the other hand, if a patient is very short (under 5 feet) or has a BMI above the 25 to 34.9 range, waist cutpoints used for the general population may not be applicable. NHLBI Evidence Category D.
Consensus reached.

- **Supporting Evidence**

  The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

- **References**

  References not graded in Academy of Nutrition and Dietetics Evidence Analysis Process


  Available at: [http://www.nhlbi.nih.gov/guidelines/obesity/e_txtbk/txgd/40.htm](http://www.nhlbi.nih.gov/guidelines/obesity/e_txtbk/txgd/40.htm)

  To access the pdf of the NHLBI Clinical Guidelines click here: [http://www.nhlbi.nih.gov/guidelines/obesity/e_txtbk/index.htm](http://www.nhlbi.nih.gov/guidelines/obesity/e_txtbk/index.htm)

- **Adult Weight Management**

  - **Adult Weight Management (AWM) Guideline (2006)**

  **Recommendations Summary**

  **Adult Weight Management (AWM) Comprehensive Weight Management Program**

  Click here to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

  - **Recommendation(s)**

    **AWM: Comprehensive Weight Management Program**

    Weight loss and weight maintenance therapy should be based on a comprehensive weight management program including diet, physical activity, and behavior therapy. The combination therapy is more successful than using any one intervention alone.

    **Rating: Strong**

    **Imperative**

    - **Risks/Harms of Implementing This Recommendation**

      None.

    - **Conditions of Application**

      No conditions specified.

    - **Potential Costs Associated with Application**

      None.

    - **Recommendation Narrative**

      - The combination of a reduced calorie diet and increased physical activity produces greater weight loss than diet alone or physical activity alone. NHLBI Evidence Category A.
      - The combination of a reduced calorie diet and increased physical activity is recommended since it produces weight loss that may also result in decreases in abdominal fat and increases in cardiorespiratory fitness. NHLBI Evidence Category A.
      - Weight loss and weight maintenance therapy should employ a combination of low calorie diets, increased physical activity, and behavior therapy. NHLBI Evidence Category A.

    - **Recommendation Strength Rationale**

      - NHLBI Evidence Category of A

    - **Minority Opinions**

      Consensus reached.

- **Supporting Evidence**

  The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).
Recommendations Summary

Adult Weight Management (AWM) Optimal Length of Weight Management Therapy

*Click here* to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

**Recommendation(s)**

**AWM: Optimal Length of Therapy**

Medical Nutrition Therapy for weight loss should last at least 6 months or until weight loss goals are achieved, with implementation of a weight maintenance program after that time. A greater frequency of contacts between the patient and practitioner may lead to more successful weight loss and maintenance.

**Rating: Strong**

**Imperative**

- **Risks/Harms of Implementing This Recommendation**
  
  None.

- **Conditions of Application**
  
  No conditions specified.

- **Potential Costs Associated with Application**
  
  None.

- **Recommendation Narrative**
  
  - Optimally, dietary therapy should last at least 6 months. NHLBI Evidence Category A.
  - A weight maintenance program should be a priority after the initial 6 months of weight loss therapy. NHLBI Evidence Category B.
  - During dietary therapy, frequent contacts between professional counselors and patients promote weight loss and maintenance. NHLBI Evidence Category C.
  - The amount of time spent with the patient favorably affects weight loss change in overweight or obese adults given dietary therapy. NHLBI Evidence Category D.
  - The literature suggests that weight loss and weight maintenance therapies that provide a greater frequency of contacts between the patient and the practitioner and are provided over the long term should be utilized whenever possible. This can lead to more successful weight loss and weight maintenance. NHLBI Evidence Category C.

- **Recommendation Strength Rationale**
  
  NHLBI Evidence Categories of A, B, C, and D

- **Minority Opinions**
  
  Consensus reached.

- **Supporting Evidence**
  
  The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).
**Recommendations Summary**

**Adult Weight Management (AWM) Realistic Weight Goal Setting**

Click here to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

**Recommendation(s)**

**AWM: Realistic Weight Goals**

Individualized goals of weight loss therapy should be to reduce body weight at an optimal rate of 1-2 lbs per week for the first 6 months and to achieve an initial weight loss goal of up to 10% from baseline. These goals are realistic, achievable, and sustainable.

**Rating: Strong**

Imperative

- **Risks/Harms of Implementing This Recommendation**

  None.

- **Conditions of Application**

  No conditions specified.

- **Potential Costs Associated with Application**

  None.

- **Recommendation Narrative**

  - Overweight and obese patients in well-designed programs can achieve a weight loss of as much as 10% of baseline weight, a weight loss that can be maintained for a sustained period of time (1 year or longer). NHLBI Evidence Category A.
  - Weight loss at the rate of 1-2 lbs per week (calorie deficit of 500 to 1000 kcal/day) commonly occurs for up to 6 months, at which point weight loss begins to plateau unless a more restrictive regimen is implemented. NHLBI Evidence Category B.
  - The initial goal of weight loss therapy should be to reduce body weight by approximately 10% from baseline. With success, further weight loss can be attempted if indicated through further assessment. NHLBI Evidence Category A.
  - Weight loss should be 1-2 lbs/week for a period of 6 months, with the subsequent strategy based on the amount of weight lost. NHLBI Evidence Category B.

- **Recommendation Strength Rationale**

  - NHLBI Evidence Categories of A and B

- **Minority Opinions**

  Consensus reached.

**Supporting Evidence**

The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

- **References**

- References not graded in Academy of Nutrition and Dietetics Evidence Analysis Process

Adult Weight Management (AWM) Determination of Resting Metabolic Rate

Estimated energy needs should be based on RMR. If possible, RMR should be measured (e.g., indirect calorimetry). If RMR cannot be measured, then the Mifflin-St. Jeor equation using **actual** weight is the most accurate for estimating RMR for overweight and obese individuals.

**Rating: Strong**
Conditional

**Mifflin-St Jeor Equations**
Men: $\text{RMR} = (9.99 \times \text{weight}) + (6.25 \times \text{height}) - (4.92 \times \text{age}) + 5$
Women: $\text{RMR} = (9.99 \times \text{weight}) + (6.25 \times \text{height}) - (4.92 \times \text{age}) - 161$
Equations use weight in kilograms (kg), height in centimeters (cm).

**Risks/Harms of Implementing This Recommendation**
The Mifflin-St. Jeor equation was not tested on racial groups other than Caucasian and so may not be accurate for these groups. Research separating obese from non-obese subjects is limited.

**Conditions of Application**
Equations to estimate RMR should be used when RMR cannot be measured.

**Potential Costs Associated with Application**
Costs vary by RMR measurement method.

**Recommendation Narrative**
- Nine cross-sectional studies reported the evaluation of the Mifflin-St. Jeor equation in overweight and obese populations, however, only one separated obese from non-obese subjects. The Mifflin-St. Jeor equation predicted RMR within 10% of measured RMR in 70% of obese individuals; up to 9% were overestimations and up to 21% were underestimations (Arciero et al, 1993; De Lorenzo et al, 2001; Frankenfield et al, 2003; Garrel et al, 1996; Heshka et al, 1993; Liu et al, 1995; Mifflin et al, 1987; Scalfi et al, 1993; Taaffe et al, 1995).
- Eleven cross-sectional studies reported the evaluation of the Harris-Benedict equation in overweight and obese U.S. and Canadian populations, however, only five separated obese from non-obese subjects. In studies using actual weight, the Harris-Benedict equation predicted RMR within 10% of measured RMR in 39 - 64% of obese individuals; up to 43% were overestimations and up to 35% were underestimations. In studies using adjusted body weight, the Harris-Benedict equation predicted RMR within 10% of measured RMR in 0% - 60% of obese individuals; up to 25% were overestimations and up to 100% were underestimations (De Lorenzo et al, 2001; Feurer et al, 1983; Forman et al, 1998; Foster et al, 1988; Frankenfield et al, 2003; Heshka et al, 1993; Hirano et al, 2001; Mifflin et al, 1987; Owen et al, 1986; Owen et al, 1987; Pavlou et al, 1986).
- Ten cross-sectional studies reported the evaluation of the Owen equations in overweight and obese populations, however, only three separated obese from non-obese subjects. The Owen equations predicted RMR within 10% of measured RMR in 33 - 51% of individuals; up to 22% were overestimations and up to 60% were underestimations (Arciero et al, 1993; De Lorenzo et al, 2001; Frankenfield et al, 2003; Heshka et al, 1993; Mifflin et al, 1990; Owen et al, 1987; Owen et al, 1986; Scalfi et al, 1993; Siervo et al, 2003; Taaffe et al, 1995).

**Recommendation Strength Rationale**
- Conclusion statements were Grade I and II
- Consistent findings across studies

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http://www.andela.org
Consensus reached.

**Supporting Evidence**

The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

In obese adults, what is the prediction accuracy and maximum overestimation and underestimation errors compared to measured resting metabolic rate when using the Harris-Benedict formula (actual body weight)?

In obese adults, what is the prediction accuracy and maximum overestimation and underestimation errors compared to measured resting metabolic rate when using the Harris-Benedict formula (adjusted body weight)?

In obese adults, what is the prediction accuracy and maximum overestimation and underestimation errors compared to measured resting metabolic rate when using the Harris-Benedict formula (ideal body weight)?

In obese adults, what is the prediction accuracy and maximum overestimation and underestimation errors compared to measured resting metabolic rate when using the WHO/FAO/UNU formula?

In obese adults, what is the prediction accuracy and maximum overestimation and underestimation errors compared to measured resting metabolic rate when using the Owen et al formula?

In obese adults, what is the prediction accuracy and maximum overestimation and underestimation errors compared to measured resting metabolic rate when using the Mifflin-St.Jeor formula?

**References**


Case KO, Brahler CJ, Heiss C. Resting energy expenditures in Asian women measured by indirect calorimetry are lower than expenditures calculated from prediction equations. *J Am Diet Assoc*. 1997; 97(11): 1,288-1,292.


- Adult Weight Management
- Adult Weight Management (AWM) Guideline (2006)

**Recommendations Summary**

**Adult Weight Management (AWM) Reduced Calorie Diets**

Click here to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

- Recommendation(s)

**AWM: Reduced Calorie Diet**

An individualized reduced calorie diet is the basis of the dietary component of a comprehensive weight management...
Reducing dietary fat and/or carbohydrates is a practical way to create a caloric deficit of 500 – 1000 kcals below estimated energy needs and should result in a weight loss of 1 – 2 lbs per week.

**Rating: Strong**
**Imperative**

- **Risks/Harms of Implementing This Recommendation**
  Reduction of caloric intake may result in nutritional inadequacies, therefore, special attention should be paid to maintaining adequate intake of vitamins and minerals.

- **Conditions of Application**
  No conditions specified.

- **Potential Costs Associated with Application**
  None.

- **Recommendation Narrative**
  - Low calorie diets are recommended for weight loss in overweight and obese persons. NHLBI Evidence Category A.
  - Low calorie diets can reduce total body weight by an average of 8% over 3 to 12 months. Since this represents an average, an initial weight loss goal of 10% is feasible. NHLBI Evidence Category A.
  - A diet that is individually planned to help create a deficit of 500 to 1000 kcal/day should be an integral part of any program aimed at achieving a weight loss of 1-2 lbs/week. NHLBI Evidence Category A.
  - Reducing fat as part of an LCD is a practical way to reduce calories. NHLBI Evidence Category A.
  - Although lower fat diets without targeted caloric reduction help promote weight loss by producing a reduced caloric intake, lower-fat diets coupled with total caloric reduction produce greater weight loss than lower-fat diets alone. NHLBI Evidence Category A.
  - Reducing dietary fat alone without reducing calories is not sufficient for weight loss. However, reducing dietary fat, along with reducing dietary carbohydrates, can facilitate caloric reduction. NHLBI Evidence Category A.

- **Recommendation Strength Rationale**
  NHLBI Evidence Category of A

- **Minority Opinions**
  Consensus reached

- **Supporting Evidence**
  The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

- **References**
  References not graded in Academy of Nutrition and Dietetics Evidence Analysis Process


  To access the pdf of the NHLBI Clinical Guidelines click here: [http://www.nhlbi.nih.gov/guidelines/obesity/e_txtbk/index.htm](http://www.nhlbi.nih.gov/guidelines/obesity/e_txtbk/index.htm)

- **Adult Weight Management**
- **Adult Weight Management (AWM) Guideline (2006)**

# Quick Links

## Recommendations Summary

**Adult Weight Management (AWM) Eating Frequency and Patterns**

*Click here* to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.
**AWM: Eating Frequency and Patterns**

Total caloric intake should be distributed throughout the day, with the consumption of 4 to 5 meals/snacks per day including breakfast. Consumption of greater energy intake during the day may be preferable to evening consumption.

**Rating: Fair**

**Imperative**

- **Risks/Harms of Implementing This Recommendation**
  None.

- **Conditions of Application**
  No conditions specified.

- **Potential Costs Associated with Application**
  None.

- **Recommendation Narrative**
  
  One positive-quality RCT, one neutral-quality cohort study and five cross-sectional studies (3 positive-quality, 2 neutral-quality) show that 4 – 5 meals or snacks per day is associated with reduced or no obesity risk, while 3 or fewer and 6 or more meals per day may result in increased risk of obesity, depending on gender. Higher eating frequency is related to lower total daily energy intake and body weights in men, but in women the data is less conclusive (Basdevant et al, 1993; Drummond et al, 1998; Forslund et al, 2002; Forslund et al, 2005; Kant et al, 1995; Ma et al, 2003; Westerterp-Plantenga et al, 2003).

  One neutral-quality cohort study, one positive-quality nonrandomized crossover trial and three cross-sectional studies (1 positive-quality and 2 neutral-quality) demonstrate that consumption of greater energy intake in the morning versus the evening is associated with lower body weights and results in greater weight loss (Andersson and Rossner, 1996; De Castro, 2004; Forslund et al, 2002; Keim et al, 1997; Summerbell et al, 1996).

  Three positive-quality cross-sectional studies show an association between skipping breakfast and increased prevalence and risk of obesity, despite lower reported daily energy intakes (Cho et al, 2003; Ma et al, 2003; Song et al, 2005).

  Two RCTs (one positive-quality, one neutral-quality) show that breakfast eaters had a greater reduction in impulsive snacking and ate less at later meals (Martin et al, 2000; Schlundt et al, 1992).

  Four cross-sectional studies (3 positive-quality, 1 neutral-quality) report that normal-weight subjects and people maintaining weight loss tend to eat breakfast regularly and generally consume a breakfast contributing approximately 20% of daily energy intake (Ortega et al, 1996; Song et al, 2005; Summerbell et al, 1996; Wyatt et al, 2002).

- **Recommendation Strength Rationale**
  
  Conclusion statements both given a Grade II

- **Minority Opinions**
  
  Consensus reached.

- **Supporting Evidence**
  
  The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

  **In adults, how effective (in terms of client adherence and weight and loss maintenance) is a regular meal and snack pattern?**

  **In adults, how effective (in terms of client adherence and weight loss and maintenance) is eating breakfast?**

- **References**
  


Kant AF, Schatzkin A, Graubard BI, Ballard-Barbash R. Frequency of eating occasions and weight change in the 

Keim NL, Van Loan MD, Horn WF, Barbieri TF, Mayclin PL. Weight loss is greater with consumption of large 
morning meals and fat-free mass is preserved with large evening meals in women on a controlled weight 

Ma Y, Bertone ER, Stanek EJ, Reed GW, Hebert JR, Cohen NL, Merriam PA, Ockene IS. Association between eating 

Summerbell CD, Moody RC, Shanks J, Stock MJ, Geissler C. Relationship between feeding pattern and body mass 

Westerterp-Plantenga MS, Kovacs EMR, Melanson KJ. Habitual meal frequency and energy intake regulation in 

Cho S, Dietrich M, Brown CJP, Clark CA, Block G. The effect of breakfast type on total daily energy intake and 
body mass index: Results from the Third National Health and Nutrition Examination Survey (NHANES III). *J Am 

Martin A, Normand S, Sother M, Peyrat J, Louche-Pelissier C, Laville M. Is advice for breakfast consumption 
84:337-44.

Morgan KJ, Zabik ME, Stamplely GL. The role of breakfast in diet adequacy of the U.S. adult population. *J Am Coll 

Ortega RM, Redondo MR, Lopez-Sobaler AM, Quintas ME, Zamora MJ, Andres P, Encinas-Sotillos A. Associations 
between obesity, breakfast-time food habits and intake of energy and nutrients in a group of elderly Madrid 

Schlundt DG, Hill JO, Sbrocco T, Pope-Cordle J, Sharp T. The role of breakfast in the treatment of obesity: a 

Song WO, Chun OK, Obayashi S, Cho S, Chung CE. Is consumption of breakfast associated with body mass index 

Wyatt HR, Grunwald GK, Mosca CL, Klem ML, Wing RR, Hill JO. Long-term weight loss and breakfast in subjects in 

**Quick Links**

**Recommendations Summary**

Adult Weight Management (AWM) Portion Control

*Click here* to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the *Supporting Evidence Section* below.

- **Recommendation(s)**
  - AWM: Portion Control

  Portion control should be included as part of a comprehensive weight management program. Portion control at meals and snacks results in reduced energy intake and weight loss.

  **Rating:** Fair

  **Imperative**

  - **Risks/Harms of Implementing This Recommendation**

  None.

  - **Conditions of Application**

  No conditions specified.

  - **Potential Costs Associated with Application**

  None.

  **Recommendation Narrative**

  - Two positive-quality RCTs have shown that portion control results in weight loss (Hannum et al, 2004; Waller et al, 2004)
Two neutral-quality RCTs and 3 nonrandomized clinical trials (two positive-quality, one-neutral quality) demonstrate that as portion size increases at a meal, energy intake also increases (Levitsky and Youn, 2004; Rolls et al, 2002; Rolls et al, 2004; Wansink and Kim, 2005, Wansink et al, 2005)

Two positive-quality nonrandomized clinical trials have shown that increased energy intake at one meal does not result in decreased energy intake at subsequent meals, resulting in significant increases in daily energy intake (Kral et al, 2004; Rolls et al, 2004)

Recommendation Strength Rationale

Conclusion statement given a Grade III
Consistent findings among a variety of study designs

Minority Opinions
Consensus reached.

Supporting Evidence

The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

In adults, how effective (in terms of client adherence and weight loss and maintenance) is reducing portion size as a strategy?

References


Levitsky DA, Youn T. The more food young adults are served, the more they overeat. J Nutr 2004; 134: 2546-2549.


Quick Links

Recommendations Summary

Adult Weight Management (AWM) Nutrition Education

Click here to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

Recommendation(s)

AWM: Nutrition Education

Nutrition education should be individualized and included as part of the diet component of a comprehensive weight management program. Short term studies show that nutrition education (e.g. reading nutrition labels, recipe modification, cooking classes) increases knowledge and may lead to improved food choices.

Rating: Fair
Imperative

Conditions of Application

No conditions specified.

Potential Costs Associated with Application

None.

Recommendation Narrative

- One positive-quality RCT, one positive-quality cohort, and one neutral-quality cross-sectional study demonstrate successful behavior change and improved eating habits based on interventions involving cooking classes (Keller et al, 2004; Masley et al, 2001; Newman et al, 2005)
- Three cross-sectional studies (1 positive-quality, 2 neutral-quality) report that cooking classes are a highly requested nutrition education program enhancement (Birkett et al, 2004; Cavallaro et al, 2004; Keller-Olaman et al, 2005)
- Eight cross-sectional studies (3 positive-quality, 5 neutral-quality) report that as many as 80% of healthy people read nutrition information on food labels usually or often, and women generally read labels more than men (Kristal et al, 1998; Lin et al, 2004; Macon et al, 2004; Marietta et al, 1999; Neuhouser et al, 1999; Perez-Escamilla and Haldeman, 2002; Satia et al, 2005; Smith et al, 2000)
- Two neutral-quality RCTs and three nonrandomized clinical trials (1 positive-quality and 2 neutral-quality) show conflicting results about the effect of nutrition information on food choices; in three trials, subjects used nutrition information in product selection, while in 2 trials, there were no significant differences in food consumption (Bushman, 1998; Krai et al, 2002; Miller et al, 1999; Roefs and Jansen, 2004; Westcombe and Wardle, 1997)

Recommendation Strength Rationale

Conclusion statements both given a Grade III

Minority Opinions

Consensus reached.

Supporting Evidence

The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

In adults, do interventions focused on healthy cooking techniques (including recipe modification) result in improved eating habits?

In adults, what is the relationship between reading nutrition information (including Nutrition Facts on the food label) and selecting healthier food choices?

References


- Adult Weight Management
- Adult Weight Management (AWM) Guideline (2006)

Quick Links

Recommendations Summary

Adult Weight Management (AWM) Low Glycemic Index Diets

Click here to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

- Recommendation(s)
  
  AWM: Low Glycemic Index Diets

  A low glycemic index diet is not recommended for weight loss or weight maintenance as part of a comprehensive weight management program, since it has not been shown to be effective in these areas.

  Rating: Strong
  Imperative

  - Risks/Harms of Implementing This Recommendation

  None.

  - Conditions of Application

  No conditions specified.

  - Potential Costs Associated with Application

  None.

  - Recommendation Narrative

  Eight RCTs (5 positive-quality and 3 neutral-quality) report no significant differences in energy intake or body weight after the consumption of low-glycemic-index foods, however, some of these studies report significant improvements in other parameters, such as hunger and body fat mass (Alfenas and Mattes, 2005; Bouche et al, 2002; Carels et al, 2005; Ebbeling et al, 2005; Frost et al, 2004; Pereira et al, 2004;
One neutral-quality cohort study showed significant differences in weight loss and abdominal obesity after following a low-glycemic load diet (LaHaye et al., 2005).

**Recommendation Strength Rationale**

- Conclusion statement is Grade I

**Minority Opinions**

Consensus reached.

**Supporting Evidence**

The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

- **In adults, how effective is the consumption of low glycemic index foods for reducing energy intake and promoting weight loss?**

**References**


**Quick Links**

**Recommendations Summary**

**AWM: Dairy/Calcium and Weight Management 2006**

Click here to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

- **Recommendation(s)**
  - AWM: Dairy/Calcium and Weight Management

In order to meet current nutritional recommendations, incorporate 3-4 servings of low fat dairy foods a day as part of the diet component of a comprehensive weight management program. Research suggests that calcium intake lower than recommended levels is associated with increased body weight. However, the effect of dairy and/or calcium at or above recommended levels on weight management is unclear.

**Rating: Fair**

Imperative
AWM: Dietary Reference Intakes for Calcium

USDA Dietary Reference Intakes (DRI) for Calcium:
Males and Females 19-50 years: 1000mg/dL
Males and Females 50-70 years: 1200mg/dL

- **Risks/Harms of Implementing This Recommendation**
  None.

- **Conditions of Application**
  No conditions specified.

- **Potential Costs Associated with Application**
  None.

- **Recommendation Narrative**
  One neutral-quality RCT, four cross-sectional studies (1 positive and 3 neutral-quality) and one neutral-quality meta-analysis demonstrate that low intakes of calcium and dairy products, below recommended levels, are associated with increased body weight, body fat, BMI, waist circumference, and relative risk of obesity in black and white adults, however, it is unclear if this is a result of a poor overall diet (Davies et al, 2000; Jacqmain et al, 2003; Lin et al, 2000; Lovejoy et al, 2001; Pereira et al, 2002; Zemel et al, 2000)
  One positive-quality cohort study showed no associations at recommended levels of calcium intake (Venti et al, 2005)
  Six RCTs (1 positive-quality and 5 neutral-quality) show conflicting results with calcium intakes above recommended levels; four neutral-quality RCTs have shown a loss of body weight and body fat (especially from trunk region of the body) both with and without energy restriction, and two RCTs (1 positive-quality, 1 neutral-quality) report no significant difference in weight loss or maintenance (Cifuentes et al, 2004; Davies et al, 2000; Thompson et al, 2005; Zemel et al, 2004; Zemel et al, 2005; Zemel et al, 2005)

- **Recommendation Strength Rationale**
  Conclusion statement is Grade III

- **Minority Opinions**
  Consensus reached.

- **Supporting Evidence**
  The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

  In adults, how effective (in terms of client adherence and weight loss and maintenance) is the High Calcium (Dairy) diet?

  - **References**


- Adult Weight Management
- Adult Weight Management (AWM) Guideline (2006)

**Quick Links**

**Recommendations Summary**

**Adult Weight Management (AWM) Low Carbohydrate Diet**

*Click here* to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

- **Recommendation(s)**
  - AWM: Low Carbohydrate Diet
    - Having patients focus on reducing carbohydrates rather than reducing calories and/or fat may be a short term strategy for some individuals. Research indicates that focusing on reducing carbohydrate intake (<35% of kcals from carbohydrates) results in reduced energy intake. Consumption of a low-carbohydrate diet is associated with a greater weight and fat loss than traditional reduced calorie diets during the first 6 months, but these differences are not significant after 1 year.
    - **Rating:** Fair
      - Conditional

  - **Risks/Harms of Implementing This Recommendation**
    - Safety has not been evaluated for long term, extreme restrictions of carbohydrates (<35% of kcals from carbohydrates).
    - Because of the limited research, practitioner should use caution in suggesting a low carbohydrate diets for even short term use for the following groups:
      - patients with osteoporosis
      - patients with kidney disease
      - patients with increased LDL

  - **Conditions of Application**
    - Recommendation applies to individuals who can more easily reduce carbohydrate in their diets than calories and/or fat.

  - **Potential Costs Associated with Application**
    - None.

  - **Recommendation Narrative**
    - Five RCTs (two positive-quality, three neutral-quality) show that ad libitum low-carbohydrate diets, when compared with reduced-calorie diets, result in significant body weight loss and fat loss during the first 6 months (Brehm et al, 2003; Brehm et al, 2005; Nickols-Richardson et al, 2005; Samaha et al, 2003; Yancy et al, 2004).
    - Three RCTs (one positive-quality and two neutral-quality) show that after 1 year, differences between ad libitum low-carbohydrate diets and reduced-calorie diets are not significant (Dansinger et al, 2005; Foster et al, 2003; Stern et al, 2004).

  - **Recommendation Strength Rationale**
    - Conclusion statement is Grade II
    - Long term safety has not been evaluated, therefore, relative risks and benefits of using this dietary approach in all populations cannot be determined.

  - **Minority Opinions**
    - Consensus reached.

- **Supporting Evidence**
  - The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence...
In adults, how effective, in terms of weight loss and maintenance, are low carbohydrate diets (defined as <35% kcals from carbohydrate)?

References


Adult Weight Management (AWM) Guideline (2006)

Recommendations Summary

Adult Weight Management (AWM) Physical Activity

Click here to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

AWM: Physical Activity

Physical activity should be part of a comprehensive weight management program. Physical activity level should be assessed and individualized long-term goals established to accumulate at least 30 minutes or more of moderate intensity physical activity on most, and preferably, all days of the week, unless medically contraindicated. Physical activity contributes to weight loss, may decrease abdominal fat, and may help with maintenance of weight loss.

Rating: Strong

Imperative

Intense physical activity in some overweight and obese individuals may contribute to disability or death, thus consultation with a physician prior to beginning an exercise program should be recommended.

Conditions of Application

Potential Costs Associated with Application

None.

Recommendation Narrative

Physical activity is recommended as part of a comprehensive weight loss therapy and weight control program because it modestly contributes to weight loss in overweight and obese adults (NHLBI Evidence Category A), may decrease abdominal fat (NHLBI Evidence Category B), increases cardiorespiratory fitness (NHLBI Evidence Category A), and may help with maintenance of weight loss (NHLBI Evidence Category C).

Physical activity should be an integral part of weight loss therapy and weight maintenance (NHLBI Category A).

Initially, moderate levels of physical activity for 30 – 45 minutes, 3 to 5 days a week, should be encouraged. All adults should set a long-term goal to accumulate at least 30 minutes or more of moderate intensity physical activity on most, and preferable, all days of the week. NHLBI Evidence Category B.

Physical activity, i.e. aerobic exercise, in overweight and obese adults, results in modest weight loss independent of the effect of caloric reduction through diet. NHLBI Evidence Category A.

Recommendation Strength Rationale

NHLBI Evidence Categories of A, B and C

Minority Opinions

Consensus reached.

Supporting Evidence

The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

References

References not graded in Academy of Nutrition and Dietetics Evidence Analysis Process


Available at: [http://www.nhlbi.nih.gov/guidelines/obesity/e_txtbk/txgd/40.htm](http://www.nhlbi.nih.gov/guidelines/obesity/e_txtbk/txgd/40.htm)

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Adult Weight Management

Adult Weight Management (AWM) Guideline (2006)

Recommendations Summary

Adult Weight Management (AWM) Multiple Behavior Therapy Strategies

Click here to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

Recommendation(s)

AWM: Multiple Behavior Therapy Strategies

A comprehensive weight management program should make maximum use of multiple strategies for behavior therapy (e.g. self monitoring, stress management, stimulus control, problem solving, contingency management, cognitive restructuring, and social support). Behavior therapy in addition to diet and physical activity leads to additional weight loss. Continued behavioral interventions may be necessary to prevent a return to baseline weight.

Rating: Strong

Imperative

Risks/Harms of Implementing This Recommendation

None.

Conditions of Application

No conditions specified.

- Potential Costs Associated with Application
  None.

- Recommendation Narrative
  - Behavior therapy, in combination with an energy deficit, provides additional benefits in assisting patients to lose weight short term (1 year). NHLBI Evidence Category B.
  - Behavior therapy’s effectiveness for long term weight maintenance has not been shown in the absence of continued behavioral intervention. NHLBI Evidence Category B.
  - No one behavior therapy appeared superior to any other in its effect on weight loss, rather multimodal strategies appeared to work best and those interventions with the greatest intensity appeared to be associated with the greatest weight loss. NHLBI Evidence Category A.
  - Long term follow up of patients undergoing behavior therapy shows a return to baseline weight in the great majority of subjects in the absence of continued behavioral intervention. NHLBI Evidence Category B.

- Recommendation Strength Rationale
  - NHLBI Evidence Categories of A and B

- Minority Opinions
  Consensus reached.

- Supporting Evidence
  The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

- References
  - References not graded in Academy of Nutrition and Dietetics Evidence Analysis Process

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- Adult Weight Management
  - Adult Weight Management (AWM) Guideline (2006)

Recommendations Summary

**Adult Weight Management (AWM) Multiple Behavior Therapy Strategies**

Click here to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

- Recommendation(s)
  - AWM: Multiple Behavior Therapy Strategies

  A comprehensive weight management program should make maximum use of multiple strategies for behavior therapy (e.g. self monitoring, stress management, stimulus control, problem solving, contingency management, cognitive restructuring, and social support). Behavior therapy in addition to diet and physical activity leads to additional weight loss. Continued behavioral interventions may be necessary to prevent a return to baseline weight.

  Rating: Strong
  Imperative

  - Risks/Harms of Implementing This Recommendation
    None.

  - Conditions of Application
    No conditions specified.

  - Potential Costs Associated with Application

Recommendation Narrative

- Behavior therapy, in combination with an energy deficit, provides additional benefits in assisting patients to lose weight short term (1 year). NHLBI Evidence Category B.
- Behavior therapy’s effectiveness for long term weight maintenance has not been shown in the absence of continued behavioral intervention. NHLBI Evidence Category B.
- No one behavior therapy appeared superior to any other in its effect on weight loss, rather multimodal strategies appeared to work best and those interventions with the greatest intensity appeared to be associated with the greatest weight loss. NHLBI Evidence Category A.
- Long term follow up of patients undergoing behavior therapy shows a return to baseline weight in the great majority of subjects in the absence of continued behavioral intervention. NHLBI Evidence Category B.

Recommendation Strength Rationale

- NHLBI Evidence Categories of A and B

Minority Opinions

Consensus reached.

Supporting Evidence

The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

- References
- References not graded in Academy of Nutrition and Dietetics Evidence Analysis Process


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Adult Weight Management (AWM) Guideline (2006)

Recommendations Summary

Adult Weight Management (AWM) Medication as Part of a Comprehensive Program

Click here to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

- Recommendation(s)

AWM: Use of Weight Loss Medications

FDA-approved weight loss medications may be part of a comprehensive weight management program. Dietitians should collaborate with other members of the health care team regarding the use of FDA-approved weight loss medications for people who meet the NHLBI criteria. Research indicates that pharmacotherapy may enhance weight loss in some overweight and obese adults.

Rating: Strong
Imperative

- Risks/Harms of Implementing This Recommendation

Adverse side effects have been observed in some patients receiving pharmacotherapy for weight management. Only those drugs approved by the FDA for long term use have data to support long term safety and efficacy.

- Conditions of Application

No conditions specified.

- Potential Costs Associated with Application

None.

- Recommendation Narrative
Weight loss drugs approved by the FDA may only be used as part of a comprehensive weight loss program, including dietary therapy and physical activity for patients with a BMI of >30 with no concomitant obesity-related risk factors or diseases, and for patients with a BMI of >27 with concomitant obesity-related risk factors or diseases. Weight loss drugs should never be used without concomitant lifestyle modifications. Continued assessment of drug therapy for efficacy and safety is necessary. If the drug is efficacious in helping the patient to lose and/or maintain weight loss and there are no serious adverse effects, it can be continued. If not, it should be discontinued. NHLBI Evidence Category B.

After successful weight loss, the likelihood of weight loss maintenance is enhanced by a program consisting of dietary therapy, physical activity, and behavior therapy which should be continued indefinitely. Drug therapy can also be used. However, drug safety and efficacy beyond 1 year of total treatment have not been established. NHLBI Evidence Category B.

Adverse side effects from the use of weight loss drugs have been observed in patients. NHLBI Evidence Category A.

Using weight loss drugs singly (not in combination) and starting with the lowest effective doses can decrease the likelihood of adverse effects. NHLBI Evidence Category C.

Pharmacotherapy, which has generally been studied along with lifestyle modification including diet and physical activity, using dexfenfluramine, sibutramine, orlistat or phentermine/fenfluramine, results in weight loss in obese adults when used for 6 months to 1 year. NHLBI Evidence Category B.

Recommendation Strength Rationale

NHLBI Evidence Categories of A, B and C

Minority Opinions

Consensus reached.

Supporting Evidence

The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

References

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Adult Weight Management

Adult Weight Management (AWM) Guideline (2006)

Recommendations Summary

Adult Weight Management (AWM) Bariatric Surgery for Weight Loss

Click here to see the explanation of recommendation ratings (Strong, Fair, Weak, Consensus, Insufficient Evidence) and labels (Imperative or Conditional). To see more detail on the evidence from which the following recommendations were drawn, use the hyperlinks in the Supporting Evidence Section below.

Recommendation(s)

AWM: Bariatric Surgery for Weight Loss

Dietitians should collaborate with other members of the health care team regarding the appropriateness of bariatric surgery for people who have not achieved weight loss goals with less invasive weight loss methods and who meet the NHLBI criteria. Separate ADA evidence based guidelines are being developed on nutrition care in bariatric surgery.

Rating: Strong

Imperative

Risks/Harms of Implementing This Recommendation

None.

Conditions of Application

No conditions specified.

Potential Costs Associated with Application

None.
Recommendation Narrative

- Gastrointestinal surgery can result in a substantial weight loss, and therefore is an available weight loss option for well-informed and motivated patients with a BMI \( \geq 40 \) or \( \geq 35 \) with comorbid conditions and acceptable operative risks. NHLBI Category B.
- Weight loss surgery is an option for carefully selected patients with clinically severe obesity (BMI \( \geq 40 \) or \( \geq 35 \) with comorbid conditions) when less invasive methods of weight loss have failed and the patient is at high risk for obesity-associated morbidity or mortality. NHLBI Evidence Category B.

Recommendation Strength Rationale

- NHLBI Evidence Categories of B

Minority Opinions

Consensus reached.

Supporting Evidence

The recommendations were created from the evidence analysis on the following questions. To see detail of the evidence analysis, click the blue hyperlinks below (recommendations rated consensus will not have supporting evidence linked).

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