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Obesity: Is it Possible to Prevent an Epidemic? Part I

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Editor's note—*An alarming number of people carry excess body fat. As these overweight and obese adults begin to experience the comorbidities associated with excess adiposity, the clinician is faced with treating the resulting diseases but having few tools to address the underlying weight management problem. Because overweight and obesity in the United States are increasing at rapid rates, the numbers of overweight patients seen in the treatment setting will continue to increase as well. Thus, primary care providers (PCPs) are seeking ways to manage this patient care challenge.*

Body mass index (BMI), a calculation that allows a person's weight to be referenced against his/her own height and correlates well with body fatness, is now the preferred screening tool for overweight and obesity. PCPs who implement routine measurement of weight and height that is coupled with calculation and recording of BMI will have a tool for recognizing risk of obesity before the adiposity becomes excessive and resistant to treatment.

PCPs who implement this routine screening and offer basic advice on physical activity, healthy eating, stress management, and body size/shape acceptance will help their patients stabilize weight and improve health measures. This prevention approach has the potential to help control costs associated with treatment of overweight and obesity-related comorbidities.

Introduction

Despite years of research and investment of billions of dollars by consumers, effective weight loss strategies are few. Many approaches that work for the short-term prove impossible for individuals to maintain over time, and lost weight often is regained. Both patients and their PCPs express frustrations and dismay over the seemingly impossible task of shedding unwanted pounds.

Recent reports call attention to the nearly epidemic nature of obesity incidence in the United States and across the globe. Using a BMI of 25 as a beginning point for overweight, half or more of the US adult population are overweight or obese, with the highest incidence among minority and economically disadvantaged populations.[1] The incidence of overweight and obesity among children and adolescents, especially in the last decade, also has increased dramatically with 22% of children and adolescents having a BMI at or above the 95th percentile.[2] Comorbid conditions associated with obesity, including type II diabetes, increasingly are being identified in teenage populations.[3]

To begin to address the obesity problem, many researchers now call for attention to focus on both those who never gain excess weight and those who are successful in losing weight and keeping it off.[4,5] The model for healthy weight maintenance is complex—involving genetics and numerous environmental influences. While physical activity and food choices are the obvious determinants of caloric balance, cultural, social, and psychological factors also influence individual ability to maintain energy balance. Further, environmental influences—particularly the abundance of readily available

food that is high in sugar and/or fat and calories and the trend toward sedentary lifestyles—also play a significant role.

Logically, primary prevention of excess weight should reduce the future burden of illness that will be the consequence of the obesity epidemic. However, few studies have focused on this approach, and results from those that have is, at best, only modestly encouraging.[4] Nonetheless, the World Health Organization Consultation on Obesity defines a spectrum of overlapping activities that should be considered integral to obesity management and lists them in order of their relative contribution to effective control of obesity: 1) prevention of weight gain; 2) weight maintenance; 3) management of obesity comorbidities; and 4) weight loss.[4] (*See Table 1.*)

Defining Healthy Weights

In a prospective Cancer Prevention study begun in 1982 that looked at mortality among more than 300,000 apparently healthy women and men who had never smoked, risk of death was lowest for women with a BMI from **22.0 to 23.4** and for men with a BMI from **23.5 to 24.9**.[6] These findings were consistent across all age groups and support the use of a single range for recommended weight across the life span.[6]

In an analysis of data from the 121,700 participants in the Nurses' Health Study that looked at the relationship between adult weight gain and risk for noninsulin dependent diabetes mellitus, women who were lean at age 18 (BMI, **18.0-21.9**) and avoided even modest weight gain (5 kg) had the lowest risk.[7] Risk increased progressively with increased initial BMI and increased weight gain, but women who were able to lose weight could decrease their risk.[7] The authors concluded that these data support the value of maintaining a lean constant body mass throughout adult life.[7] In a companion analysis of 115,195 women from the Nurses' Health Study who were 30-55 years of age and free of known cardiovascular disease and cancer in 1976, mortality was lowest at **BMI below 22**, and a weight gain of 10 kg or more since the age of 18 was linked to increased mortality in middle age.[8] Thus, weight gain should not be viewed as a normal part of aging, and young adults should be counseled about dietary and physical activity patterns that can help maintain weights below a BMI of 25 (*see Tables 2 & 3*).

Helping Adults Stabilize or Lose Weight

As part of a movement to shift focus from weight-loss programs to a focus on weight management, a Committee to Develop Criteria for Evaluating the Outcomes of Approaches to Prevent and Treat Obesity was convened in 1994 by the Food and Nutrition Board, Institute of Medicine, National Academy of Sciences.[10] The Committee identified 4 components of a successful weight management program: 1) long term weight loss; 2) improvement in obesity-related comorbidities; 3) improved health practices; and 4) monitoring of adverse effects that might result from the program.[9] The Committee

Table 1. World Health Organization Rationale for Prevention Strategies

- Obesity develops over time and, once it has, is difficult to treat. Indeed, a number of analyses have identified the failure of many obesity treatments to achieve long-term success.
- The health consequences associated with obesity result from the cumulative metabolic and physical stress of excess weight over a long period and may not be fully reversible by weight loss.
- The proportion of the population that is either overweight or obese in many developed countries is now so large that there are no longer sufficient health care resources to offer treatment to all.
- In developing countries, limited resources will be easily exhausted by the need for expensive and technologically advanced treatment for obesity and other noncommunicable diseases.

Source: *World Health Organization. Obesity: Preventing and Managing the Global Epidemic. Report of the WHO Consultation on Obesity. Geneva, Switzerland; 1997:164.*

Table 2. Body Mass Index

To calculate body mass index:

$$\text{BMI} = \frac{\text{weight (kg)}}{\text{height squared (m}^2\text{)}}$$

To use pounds and inches:

$$\text{BMI} = \frac{\text{weight (pounds)} \times 703}{\text{height squared (inches)}}$$

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Table 3. Classification of Overweight and Obesity

Underweight	< 18.5
Normal	18.5-24.9
Overweight	25.0-29.9
Obesity—Class I	30-34.9
Obesity—Class II	35.0-39.9

recommended that definition of success in weight management shift from weight loss alone to weight management—achieving the best weight possible in the context of overall health.[9]

In 1994, Secretary of Health and Human Services, Donna E. Shalala, commissioned the first Surgeon General's report on physical activity and health.[10] With the hope of beginning a new emphasis on physical activity and fitness in the United States, the 1996 report provided the good news that people of all ages can improve their health by engaging in moderate physical activity (such as 30 minutes of brisk walking on most, if not all, days of the week) throughout their lives.[10] However, the report also pointed to discouraging statistics that 60% of American adults are not regularly physically active, and 25% are not active at all![10]

Building on the earlier reports, the first Expert Panel on the Identification, Evaluation, and Treatment of Overweight and Obesity published guidelines in 1998 for management of overweight and obesity.[11] General goals suggested included: 1) reduce body weight (by 10% in 6 months); 2) maintain a lower body weight over the long term; **or** 3) prevent further weight gain (a minimum goal).[11] Recommended weight management techniques for all individuals included dietary therapy (deficit of 500-1000 kcal/d), physical activity (at least 30 minutes or more of moderate-intensity physical activity on most, and preferably all days of the week), and behavior therapies.[11] Addition of pharmacotherapy was recommended for patients with BMIs of 27 or higher with comorbid conditions, and surgery might be indicated for patients with BMIs above 35 with comorbid conditions.[11] In recognition of the difficulty of achieving and sustaining weight loss, the Expert Panel asked providers to work with their patients to shift the definition of success from loss of pounds to improvement in health status indicators such as lipids, blood glucose, blood pressure, etc.[11]

Despite consensus among researchers and health professionals about treatment approaches, the US public seems unable to meet the substantial challenges of weight management. Data from the 1996 Behavioral Risk Factor Surveillance System survey revealed that 28.8% of men and 43.6% of women were attempting to lose weight.[12] However, only 21.5% of men and 19.4% of women reported using the recommended combination of eating fewer calories and participating in at least 150 minutes of leisure-time physical activity per week.[12] Even those who have participated in research trials face difficulty in sustaining weight management efforts. In a summary analysis of selected weight loss trials, 15- to 25-week diet and behavior modification treatment programs were not associated with successful weight control 3-5 years later.[5]

Given the high failure rates for most weight loss programs, many people are weight cycling—losing weight only to gain it back. While much media attention has focused on the negative effects of weight cycling—known as "yo-yo" dieting, analysis of available data shows no convincing evidence that weight cycling in humans has adverse effects on future weight loss attempts, body composition, energy expenditure, or risk factors for cardiovascular disease.[13] Among psychological constructs, weight cycling does not seem to adversely affect dietary restraint, hunger, or traits associated with eating disorders, but it does seem to decrease self-efficacy related to eating.[14]

Physical activity is an important component of both weight loss and weight maintenance.[11] In a study of 25,714 adult men in the Aerobics Center Longitudinal Study who were followed for 24 years, low cardiorespiratory fitness was a strong and independent predictor of cardiovascular disease and all-cause mortality in all BMI groups.[15] Based on this finding, the authors advised clinicians to consider adding fitness or physical activity evaluation to their medical assessment processes.[15] Since data from the Finnish Twin cohort study demonstrated that leisure time physical activity—defined as 30 minutes of vigorous walking or the equivalent at least 6 times per month—is associated with reduced mortality, even modest increases in physical activity should prove beneficial for most patients.[16] However, rate of physician counseling about exercise is low nationally, and those physicians who do provide exercise counseling tend to provide it as secondary prevention rather than targeting younger, disease-free adults at risk for developing obesity.[17]

Among 12,835 obese adults (BMI ≥ 30) who had visited their physician for a routine checkup during the previous 12 months and were surveyed as part of the Behavioral Risk Factor Surveillance System in 1996, only 42% reported that their health care professional advised them to lose weight.[18] Those whose health care provider did tell them to lose weight were nearly 3 times as likely to make a weight loss attempt, but only 56% of those used the recommended strategy of healthy food choices and increased physical activity.[18] In a companion study that focused on participants in just 10 states, researchers found that advice to lose weight was uncommon and given mainly to those who were middle-aged and already obese with comorbidities.[19] As with counseling about physical activity, practitioners may be missing an opportunity to help people maintain weight and prevent comorbidities.

When compared to other chronic physical health conditions, obesity has more negative effects on social and economic consequences, including negative effects on income, years of schooling, and rate of marriage.[20] Adding these psychosocial considerations to the physical risks of being overweight and obesity gives further impetus to prevention approaches.

The Link between Childhood and Adult Obesity

A follow-up in 1988 of participants in the Harvard Growth Study of 1922 to 1935 found that overweight in adolescence was associated with a number of adverse health effects in adulthood, independent of later weight gain.[21] In a systematic review of literature that was published between 1970 and 1992, about one third of obese preschool children were found to be obese as adults and about one half of obese school-age children were obese as adults.[22] This literature further indicated that less than half of adult obesity was attributable to childhood obesity, and risk of obesity-related chronic diseases may actually be higher among those who became obese as adults.[22]

Table 4. Summary of AHA Dietary Guidelines

	Population Goals			
	Overall Health Eating Pattern	**Appropriate Body Weight**	**Desirable Cholesterol Profile**	**Desirable Blood Pressure**
Major Guidelines	Include a variety of fruits, vegetables, grains, low-fat, or nonfat dairy products, fish, legumes, poultry, lean meats	Match energy intake to energy needs, with appropriate changes to achieve weight loss when indicated	Limit foods high in saturated fat and cholesterol; and substitute unsaturated fat from vegetables, fish, legumes, nuts	Limit salt and alcohol; maintain a healthy body weight and a diet with emphasis on vegetables, fruits, and low-fat or nonfat dairy products

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To help clinicians decide which adolescents should be targeted for treatment, data from 555 participants in the Fels longitudinal study were analyzed to determine the predictive value of childhood obesity for excess adult weight, defined as BMI > 26 in women and BMI > 28 in men.[23] The odds of being overweight at age 35 for 18-year-olds with a BMI value greater than the 60th percentile were 37% for women and 34% for men.[23]

In a study of 854 subjects born at a Health Maintenance Organization in Washington state between 1965 and 1971, parental obesity was found to more than double the risk of adult obesity among both obese and nonobese children younger than 10 years of age.[24] However, obese children younger than 3 years of age without obese parents were at low risk for obesity in adulthood.[24] In an analysis of studies that looked at the long-term effects of childhood obesity on adult diseases, among the approximately 50% of obese adolescents who become obese adults, the risk factors for adult disease persist into adult life and increase in both prevalence and severity if weight gain continues in the adult years.[25] Again, the data support the need for a prevention approach that begins in early childhood.

Healthy Eating Patterns for Weight Management

Revision 2000 of the American Heart Association Dietary Guidelines put increased emphasis on foods and emphasized the need for maintenance of healthy body weight[26] (*see Table 4*). The AHA Guidelines incorporate the eating pattern recommended by the Dietary Approaches to Stop Hypertension (DASH) trials[27,28] and focus on an overall healthy eating pattern without excessive emphasis on any one food or small group of foods and nutrients. These eating patterns, coupled with moderate-to-vigorous physical activity for at least 30 minutes daily, should be the basis for weight management.

Unfortunately, most US citizens do not adhere to a healthy eating pattern. For example, the Continuing Survey of Food Intakes by Individuals (CSFII) 1994-95, when compared to CSFII 1989-91, revealed that adults are drinking more skim milk and less whole milk, but total milk consumption has declined, being replaced by soft drinks and other sugary beverages.[29] In fact, when compared to Nationwide Food Consumption Survey (NFCS) from 1977-78, men in 1994-95 had decreased their milk intake by 17% and increased soft drink intake by 162%, fruit drinks (not 100% juice) by 146%, and beer and ale by 79%.[29] Thus, even though fat intake in men decreased from 42% of total calories in 1977-78 to 34% in 1994-95, this was offset by a substantial increase in sugars, especially from beverages, desserts, and snacks.[29] These kinds of dietary patterns, combined with sedentary lifestyles, help explain the dramatic increase in overweight and obesity seen in the United States in the last 2 decades.

The DASH[28] diet, rich in fruits, vegetables, and whole grains, provides both high fiber content and numerous antioxidants and phytochemicals. Likely, all these properties work together to contribute to the positive effects of this dietary pattern, but the fiber component may play an especially important role in weight management. In a study of 2909 black and white adults ranging in age from 18 to 30, fiber intake was inversely associated with weight gain and may have protected against obesity by lowering insulin levels.[30] Mean dietary fiber intake in the CSFII 1994-95 survey was 13.7 g for women and 18.5 g for men, up only slightly from 1989-91.[29] To get fiber intake for the general public up to the average intake of 31 g that was seen in the DASH[28] diet, fruit, vegetable, and whole grain consumption will have to increase.

Dietary fat, because of its caloric density and its link to coronary artery disease, generally is targeted for reduction in a weight management diet. While AHA recommendations suggest that a weight loss diet should have ≤ 30% of total calories from fat,[26] the WHO Consultation suggests that lower fat intakes—around 20-25% of energy—may be needed to minimize energy imbalance and weight gain among relatively sedentary individuals.[4] In a meta-analysis of 16 intervention trials that focused on the effect of dietary fat on body fatness, reduction of dietary fat, even without a reduction in total energy intake, prevented weight gain in subjects of normal weight and caused weight loss in overweight subjects.[31]

How individuals use fat as an energy source may be especially important when deciding what portion of daily energy should come from fat. In a study of 152 nondiabetic Pima Indians, a low ratio of fat to carbohydrate oxidation was associated with subsequent weight gain, independent of low energy expenditure.[32] Because a decline in fat oxidation usually occurs following weight loss,[33] lower dietary fat levels should prove helpful for those trying to maintain a lowered weight. Adding low-intensity exercise training to a weight maintenance program can preserve lean body mass.[33] Obese men who had lost weight and engaged in cycling, walking, or aqua-jogging for 1 hour per session, 4 times per week,

were able to counteract the usual decline in fat oxidation.[33]

Pediatric Issues in Obesity

Pediatric approaches to weight management must balance the need to assure normal growth in stature with the need to slow the rate of excess fat deposition. Further, the potential social and psychological stigma of being singled out for treatment needs to be addressed. Thus, research on pediatric obesity has proceeded cautiously.

In a 10-year follow-up of behavioral, family-based treatment for obese children ages 6-12 at entry, family-based treatment was found to be effective, and the positive effects on the children involved persisted into young adulthood.[34] Weight reduction during adolescent development showed no long-term negative effects on final height.[34] Underscoring the advantage of parental involvement, a study of 53 children between the ages of 4 and 7 revealed that both the threat of parental monitoring and actual parental monitoring of food choices led to fewer choices of non-nutritious food and lower total caloric intake.[35]

As with weight gain in adults, diet composition can make a difference in weight gain in children. In a study of 25 girls (16 nonobese and 9 obese) and 23 boys (14 nonobese and 9 obese) aged 9-11 years, the obese children did not consume more energy than the nonobese children, but they did consume a greater proportion of total calories from dietary fat.[36] In a study of food consumption in 77 3- to 5-year-old children, preschool children were found to have the ability to regulate energy intake if healthy food choices are provided and the children are allowed to assume control of the amount eaten.[37] A later study found that in a food environment with ready access to high-fat and energy-dense foods, children learn to prefer these foods, especially when they are hungry.[38] Thus, parental influence is important and can have the greatest effect through control of the food environment for young children.

The increasing trend toward intake of sweetened beverages in the United States and other countries is having a deleterious effect on overweight and obesity. A cross-sectional study of beverage intake among preschool children revealed an association between excess fruit juice consumption (> 12 oz/d) and obesity.[39] In a longitudinal study supported by Gerber products, 100% juice products were not associated with overweight in childhood, but carbonated beverages and other sugary beverages became significant contributors to children's energy intake between the ages of 2 and 6.[40] In both studies, milk intake was below recommended levels, averaging 10 oz/d in the first study[39] and between 11 and 12 oz/d in the second.[40] From a nutrient perspective, soft drinks and other sugared beverages contribute significant calories but few nutrients to children's diets.[41] In fact, in a study of 548 ethnically diverse 11- to 12-year-old children, those who drank soft drinks had a 200 calorie/d higher intake than their counterparts who did not.[42] Further, the odds of becoming obese among these children increased 1.6 times for each additional can or glass of soft drink consumed each day.[42]

If PCPs hope to influence children's food and beverage environments, timing of advice may be important. A retrospective study of obesity treatment in 93 pediatric patients between the ages of 1 and 10 suggested that easiest intervention is during the toddler years and can be done by the PCP in the outpatient setting.[43] Further support for early intervention was provided by a cohort study of 146 3- to 5-year-old children.[44] Over a 3-year period, modifiable variables, such as physical activity and diet, accounted for more of the variance in changes in BMI than did nonmodifiable variables, such as incidence of parental obesity.[44] Since the potentially damaging social experience of being overweight will not be avoided if attention to overweight is limited to treatment, providers are encouraged to focus on prevention by providing monitoring and guidance for all children.[45] With a recent finding that the majority of mothers do not view their overweight preschool children as being overweight,[46] systematic monitoring and guidance for all children well may be the best approach.

Analysis of data from 4 National Health and Nutrition Examination Surveys (NHANES) conducted between 1971 and 1994 showed a 20-year increase in the prevalence of overweight among 4- and 5-year old children but not among younger children.[47] These trends in very young children, coupled with the dramatic rise in overweight and obesity in older children and adolescents,[2] led to increased attention to determinants of childhood obesity and effective treatment strategies. A review of more than 30 randomized studies of childhood obesity treatment conducted in the 1970s through 1990s concluded that no standardized treatments were available that were consistently efficacious.[48] The reviewers called for more research addressing behavioral and psychosocial interventions and more research on prevention approaches.[48] At the clinical treatment level, the reviewers urged that more attention be given to individualized treatments to maximize positive benefits of weight management while minimizing negative side effects.[48]

In March 1997, an Expert Committee of pediatric obesity clinicians and researchers convened in Washington, DC, to formulate recommendations for obesity evaluation and treatment in children.[49] The Committee reached consensus on recommendations for a general approach to therapy when children 3 years of age or older become overweight.[49] (*See Table 5.*)

Activity patterns can affect body fatness, even at young ages. In a longitudinal study of 97 healthy 3- to 5-year-old children, children with low levels of physical activity gained substantially more subcutaneous fat than did more active children.[50] Physical activity, both directly and through effect on BMI, also can affect other pediatric health measures. Among 196 children who were 5 years at the onset of the study and were followed for 20 months, those who were able to increase aerobic fitness or decrease BMI reduced the rate of age-related increase in blood pressure.[51]

Across the school years (ages 8-16), physical activity declines at a rate of 2.7% per year for males and 7.4% per year for females.[52] In the Third National Health and Nutrition Examination Survey conducted from 1988 to 1994, 26% of US children were identified as watching 4 or more hours of television each day.[53] As hours watching television increased, so did the children's BMI and levels of body fat.[53] Further, as televison viewing increased, participation in vigorous activity diminished.[53] Compounding the effect of diminished activity, a study of 15 obese and 16 normal-weight 8- to 12-year-old children found that the children's resting energy expenditure during television viewing was significantly lower than at rest, independent of weight status.[54]

In a study of obese 8-12 year olds from 61 families, reinforcing decreases in sedentary behavior had a greater effect on weight loss than did reinforcing increases in exercise.[55] This

positive outcome was attributed to the children's ability to choose how to use their newly found time along with an educational environment that stressed the benefits of physical activity.[55] Even without an increase in physical activity, children who participated in a school-based curriculum designed to decrease time spent watching television and playing video games had statistically significant relative decreases in BMI.[56]

Data from the Heart Smart Superkids/Superfit fitness promotion program showed that fitness in children can be improved by scheduling regular physical activity at schools.[57] School-based activity programs should have a primary goal of instilling in children the desire to be physically active and should include a mix of noncompetitive and competitive activities.[57]

Implementing school-based programs about nutrition and the risks of overweight must be done thoughtfully to avoid reinforcing messages already received by children about the importance of physical appearance and the social stigma of overweight.[58] Dieting is a common practice among adolescent and prepubescent girls especially, and educators need to be cautious that well-intended health messages do not lead to a rise in incidence of disordered eating.[58]

As children near the adolescent period, sensitivity to body image increases. Among 32 overweight 9- to 11-year-old children in London who were singled out for obesity treatment, BMI was strongly and negatively correlated to self-esteem.[59] Those most vulnerable felt they were responsible for their obesity and believed their obesity limited their social interactions.[59] Again, routine monitoring and counseling of all children potentially would help reduce risk of unintended social damage in overweight youth.

An Expert Committee on Clinical Guidelines for Overweight in Adolescent Preventive Services was established in 1993 to recommend specific criteria for overweight or obesity to be integrated into routine annual preventive screening of adolescents (ages 11-21).[60] To establish a workable protocol that would identify those at greatest risk of obesity and its adverse sequences, the Committee recommended an initial screen based on BMI and a second-level screen based on risking criteria.[60] (*See Figure 1.*)

To help PCPs make preventive services a larger part of their clinical practices, the American Medical Association coordinated development of Guidelines for Adolescent Preventive Services (GAPS) to give providers guidance in how to deliver preventive health services.[61] Recommendations 7, 8, and 13 relate specifically to prevention and treatment of overweight and obesity and are listed below:[61]

Recommendation 7— "All adolescents should receive health guidance annually about dietary habits, including the benefits of a healthy diet, and ways to achieve a healthy diet and safe weight management."

Recommendation 8— "All adolescents should receive health guidance annually about the benefits of physical activity and should be encouraged to engage in safe physical activities on a regular basis."

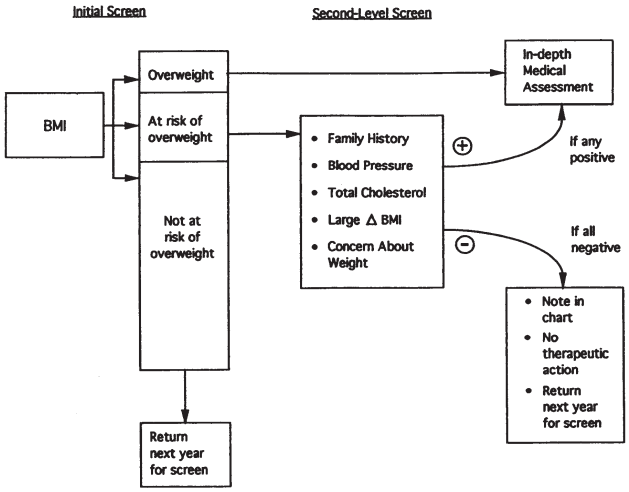
Recommendation 13— "All adolescents should be screened annually for eating disorders and obesity by determining weight and stature, and asking about body image and dieting patterns."

- Adolescents should be assessed for organic disease, anorexia nervosa, or bulemia if any of the following are found: weight loss greater than 10% of previous weight; recurring dieting when not overweight; use of self-induced emesis, laxatives, starvation, or diuretics to lose weight; distorted body image; or body mass index below the fifth percentile.
- Adolescents with a body mass index equal to or greater than the 95th percentile for age and gender are overweight and should have an in-depth dietary and health assessment to determine psychosocial morbidity and risk for future cardiovascular disease.
- Adolescents with a BMI between the 85th and 94th percentile are at risk for becoming overweight. A dietary and health assessment to determine psychosocial morbidity and risk for future cardiovascular disease should be performed on these youth if:
  - their BMI has increased by two or more units during the previous 12 months;
  - there is a family history of premature heart disease, obesity, hypertension, or diabetes mellitus;
  - they express concern about their weight;

Table 5. General Approach to Therapy

- ☑ Intervention should begin early
- ☑ The family must be ready for change
- ☑ Clinicians should educate families about medical complications of obesity
- ☑ Clinicians should involve the family and all caregivers in the treatment program
- ☑ Treatment programs should institute permanent changes—not short-term diets or exercise programs aimed at rapid weight loss
- ☑ As part of the treatment program, a family should learn to monitor eating and activity
- ☑ The treatment program should help the family make small, gradual changes
- ☑ Clinicians should encourage and empathize and not criticize
- ☑ A variety of experienced professionals can accomplish many aspects of a weight management program

Figure 1. Schematic Representation of Recommended Overweight Screening in Adolescence



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- they have elevated serum cholesterol levels or blood pressure.

If this assessment is negative, these adolescents should be provided general dietary and exercise counseling and should be monitored annually. (*Reprinted with permission from American Medical Association. Guidelines for Adolescent Preventive Services. Chicago: American Medical Association, 1997.*)[61]

In the next issue, the focus will shift to practical strategies for implementing brief patient education messages about physical activity and healthful eating into routine out-patient care. Samples of simple screening tools and resources will help busy providers meet their patients' expectations and needs relevant to therapeutic lifestyle change.

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Physician CME Questions

1. The World Health Organization classifies overweight as what range for body mass index?
   a. 27.0-29.9
   b. 25.0-29.9
   c. 23.0-24.9
   d. 30.0-34.9

2. Which of the following is not part of the American Heart Association Dietary Guidelines for achieving desirable blood pressure?
   a. Include low-fat or nonfat dairy products.
   b. Emphasize vegetables and fruits.
   c. Drink modest amounts of red wine.
   d. Limit salt and sodium intake.

In Future Issues:

Obesity: Is it Possible to Prevent an Epidemic—Part II —Sylvia A. Moore, PhD, RD, FADA