ADULT OBESITY
A Resource from the American College of Preventive Medicine

A Clinical Reference
The following Clinical Reference provides evidence to support the Adult Obesity Time Tool.

1. Introduction
2. Significance of the Problem
   - Prevalence
   - Impact on health
     - Mortality
     - Chronic disease
3. Definition and Assessment
4. The Role of Health Professionals
   - Impact of advice
   - Counseling practices
   - Reasons for low rates of counseling
   - The office environment
   - Establishing a partnership
5. Facts about Obesity
6. Underlying the Epidemic of Obesity
   - Ineffective weight loss strategies
   - Eating habits
   - Activity habits
7. Evidence of Effectiveness
8. Guidelines and Recommendations
9. A Fat Loss Plan that Works
   - The basic plan
   - What the National Weight Loss Registry has shown us
   - Specific eating changes
   - Physical activity and exercise
10. Behavior Change Therapy
11. Optimizing Communication
12. Office Systems
13. Final Thoughts
14. Resources
15. References
1. INTRODUCTION

Obesity is not just a simple condition of eating too much. It is a serious, chronic disease.
- A disease of appetite regulation and energy metabolism involving genetics, physiology, biochemistry, environmental, psychosocial, and cultural factors. Unfortunately, the lay public, health-care providers and insurance companies often view it simply as a problem of willful misconduct—eating too much and exercising too little. [1]

"In view of these alarmingly high rates of obesity in all population groups, CDC has made the prevention of obesity one of its top public health priorities."

2. SIGNIFICANCE OF THE PROBLEM

PREVALENCE
From 1960 to 2004 in U.S. adults age 20 to 74:
- the prevalence of overweight increased from 45% to 66%, and
- the prevalence of obesity more than doubled, from 13% to 32%, with most of this rise occurring since 1980. [7]
- Among women, the age-adjusted prevalence of overweight or obesity (BMI > 25) in racial and ethnic minorities is higher among non-Hispanic Black (80%) and Mexican-American (73%) women than among non-Hispanic White women (58%).[7]
- Among men, there is little difference in prevalence among these three groups [7]

One in three adults is now obese (BMI ≥ 30.0), two out of three overweight OR obese (BMI ≥ 25.0) [8]
- The latest NHANES data (Nov, 2007) shows that 33.3% of men and 35.3% of women over 20 yrs — over 72 million people — were obese in 2005-2006. [8]
- Another one in three adults were overweight but not yet obese (BMI 25.0 – 29.9).
- Adults aged 40-59 had the highest rate of obesity:

<table>
<thead>
<tr>
<th>MEN</th>
<th>Obese</th>
<th>WOMEN</th>
<th>Obese</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-39 yrs</td>
<td>28%</td>
<td>20-39 yrs</td>
<td>30.5%</td>
</tr>
<tr>
<td>40-59 yrs</td>
<td>40%</td>
<td>40-59 yrs</td>
<td>41%</td>
</tr>
<tr>
<td>60+ yrs</td>
<td>32%</td>
<td>60+ yrs</td>
<td>35%</td>
</tr>
</tbody>
</table>

In women there are large racial and ethnic disparities in obesity prevalence. [9]
- Age 40-59: Over half of Mexican-American women were obese vs 39% of non-Hispanic white women.
- 60 and older: 61% of non-Hispanic black women were obese compared with 37% of Mexican-American and 32% of non-Hispanic white women.

The growth of the epidemic is best seen through data from the Behavioral Risk Factor Surveillance System (BRFSS), with the prevalence of obesity broken down by state. [10]
- In 1990, no state had an obesity prevalence > 15%; 10 states had a prevalence < 10%.
- By 1998, no state had an obesity prevalence < 10%; 7 states had a prevalence of 20-24%; no state had rate > 25%.
- In 2007, only one state (Colorado) had a rate < 20%. 30 states had a rate > 25%; 3 (Alabama, Mississippi and Tennessee) had a prevalence of at least 30%. [11]
The prevalence of clinically severe obesity (BMI of 40 or greater, about 100 lbs overweight) is increasing at a much faster rate than is the prevalence of moderate obesity.

- From 2000 to 2005, the prevalence of obesity increased by 24%, but the prevalence of severe obesity increased by 50%. The heaviest BMI groups have been increasing at the fastest rates for 20 years (BRFSS). 
- Between 1986 and 2000, the rate of severe obesity went from about 1 in 200 adult Americans to 1 in 50, and the rate of a BMI of 50 or greater went from about 1 in 2000 to 1 in 400. 

**The Rise in Abdominal Obesity**

The mean waist circumference (WC) and the prevalence of abdominal obesity among U.S. adults have increased continuously during the past 15 years. Over one-half of U.S. adults had abdominal obesity in the period of 2003-2004. 

- Data from the NHANES has shown that between 1988-1994 and 2003-2004, the age-adjusted mean WC increased from 37.8 inches to 39.5 inches in men and from 35 inches to 37 inches in women; the age-adjusted prevalence of abdominal obesity increased from 29.5% to 42.4% among men and from 47.0% to 61.3% among women. 
- NHANES data show that the average waist circumference has steadily increased in both men and women over the last 40 years, especially the last 10 years. 

### Waist Circumference in inches

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960-1962</td>
<td>35</td>
<td>30.3</td>
</tr>
<tr>
<td>1988-1994</td>
<td>37.8</td>
<td>35</td>
</tr>
<tr>
<td>1999-2000</td>
<td>39</td>
<td>36.3</td>
</tr>
<tr>
<td>2003-2004</td>
<td>39.5</td>
<td>37</td>
</tr>
</tbody>
</table>

**IMPACT ON HEALTH**

**Limitations of the Data**

Most of the data on the risks of obesity are from long-term epidemiologic studies that, while clearly compelling, are not as clear cut as was the case for tobacco smoking. There are no studies that demonstrate improvements in mortality and long-term health as a result of a reduction of BMI. We think they are better off, but we don’t know for sure. We don’t understand all the problems accompany weight regain after weight loss.

However, the weight of the available evidence is substantial and is strongly suggestive that we should not wait until “all the evidence” is in to act.

**Mortality**

- The risks of many medical complications increase with increasing BMI; lead to premature mortality in obese individuals.
- Prospective study of more than 1 million U.S. adults, among nonsmoking, overweight (above a BMI of 25.0), the relative risk of death increased linearly with increased BMI in both men and women. 

In the Physicians’ Health Study, all-cause and cardiovascular mortality was directly related to BMI among middle-aged and elderly men.

- In all age strata, a BMI ≥ 30 had a 70% increased risk of death compared with BMI 22.5-24.9.
- Higher levels of BMI were strongly related to increased cardiovascular mortality, regardless of physical activity level.

Poor diet and physical inactivity on the verge of overtaking smoking as the leading preventable cause of death in the U.S. Together, are responsible for approximately 365,000 deaths each year. Much is due to the impact of overweight and obesity on a variety of chronic disease processes that account for 7 of every 10 deaths in the U.S. and more than 75% of medical care expenditures.
A recent analysis of NHANES data created controversy over the obesity/mortality issue; researchers concluded that the "impact of obesity on mortality may have decreased over time", likely due to better management of related diseases and longer lifespans. [21]

While most major preventable causes of death showed declines or little change since 1990, deaths attributed to poor diet and physical inactivity increased 22%. [18,19]

Both high body fat and low fat free mass (FFM) are independent predictors of all-cause mortality. [22]

Relation to Chronic Disease

Obesity is associated with increased risk of a number of conditions, including diabetes, cardiovascular disease, hypertension, and certain cancers, and with increased risk of disability and a modestly elevated risk of all-cause mortality. [8]

- The most serious medical consequences are a result of endocrine and metabolic changes, notably type 2 diabetes mellitus, cardiovascular disease, and increased risk of cancer. All told at least 9 organ systems are adversely affected. [23]
- The risks for chronic disease associated with obesity increase in direct relation to the extent of fat gain and increase in BMI, especially type 2 diabetes, hypertension, gallstones and arthritis. [24]

<table>
<thead>
<tr>
<th>Increased Risk of Obesity Related Diseases with Higher BMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disease</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Arthritis</td>
</tr>
<tr>
<td>Heart Disease</td>
</tr>
<tr>
<td>Diabetes (Type 2)</td>
</tr>
<tr>
<td>Gallstones</td>
</tr>
<tr>
<td>Hypertension</td>
</tr>
<tr>
<td>Stroke</td>
</tr>
</tbody>
</table>

Coronary Heart Disease

- In the Harvard Nurses Health Study, obese women had a nearly 3.5 times greater risk of having a heart attack as women with BMI less than 21.0. Those who gained as few as 11 lbs after age 18 had 25% greater risk of developing CHD as women who gained less. [25]
- Similarly, obese men were shown to have 3 times the risk of CHD as lean men. [26]
- Waist circumference is independently associated with risk of CHD in women. [27]

Diabetes

BMI and waist circumference are both powerful independent predictors of Type 2 diabetes in both women and men. [28,29]

- Two-thirds of adult men and women in the U.S. diagnosed with type 2 diabetes have a BMI of 27 or greater. [30]
- Moreover, the risk of diabetes increased with BMI; diabetes prevalence was 2%, 8% and 13% in those with BMI 25-29.9, 30-34.9, and >35, respectively. [31]

Weight gain during adulthood increases the risk of diabetes, even at relatively low levels of BMI in initially normal weight individuals. [32,33]

- Data from the Nurses Health Study has shown that the risk of diabetes in women begins to increase when BMI exceeds 22.0 [32]
- Compared with women who kept their weight within 5 kg of their initial weight over a 14-year period, women who gained only 5 to 8 kg were nearly twice as likely to develop diabetes, even after adjusting for initial BMI. Those who gained 11 to 20 kg were 5 times as likely to develop diabetes. [32]

Weight gain is associated with substantially increased risk of diabetes, and even modest weight loss is associated with significantly reduced diabetes risk.
• Relative to overweight people with stable weight, each kg of weight gained annually over 10 years was associated with a 49% increase in risk of developing diabetes in the next 10 years. Each kg of weight lost annually over 10 years was associated with a 33% lower risk of diabetes in the subsequent 10 years. [34]

Metabolic Syndrome
The increasing prevalence of the metabolic syndrome has paralleled the obesity epidemic, not surprisingly since the hallmark of the syndrome is abdominal obesity.
• In NHANES III, over 40% of people over 60 had the metabolic syndrome, which greatly increases the risk of diabetes and CHD. Based on 2000 census data, at least 47 million Americans are affected. [35]

Blood Pressure
Blood pressure is strongly correlated with BMI. Half of Americans aged 55-64 years have high blood pressure. [36]
• NHANES data have shown that the prevalence of high blood pressure and mean levels of systolic and diastolic blood pressure increase as BMI increases for individuals less than 60 years of age. [38]
• The INTERSALT study [37], including over 10,000 men and women, 20-59 years of age -- BMI was directly associated with blood pressure, independent of age, alcohol intake, smoking, and sodium and potassium excretion.
• Data from the Framingham Offspring Study [39] shows that the best single predictor of hypertension is adiposity.
  o 78% of hypertension in men and 64% in women was attributable to obesity.
  o Changes in body fat over 8 years were related to changes in both systolic and diastolic blood pressure.
  o Markedly obese women in their fourth decade were seven times more likely to develop hypertension than were lean women of the same age.
• In the Nurses Health Study [40], weight gain dramatically increased the risk for hypertension. BMI at age 18 and at midlife were positively associated with the occurrence of hypertension.
  o Compared with women who gained less than 5 pounds, women who gained 11-22 pounds were 74% more likely to have hypertension, and those who gained more than 55 pounds were more than 5 times as likely to have hypertension. Each 1-kg increase in weight after age 18 was associated with a 5% increase in risk for hypertension.
  o Conversely, long-term weight loss after 18 years of age was related to a lower risk for hypertension.

Arthritis
Data from the 2000 Behavioral Risk Factor Surveillance System showed a strong relationship between body weight and arthritis. 43.5% of obese individuals also had arthritis. [41]

Disability
Obesity is associated with disability. Data from the Behavioral Risk Factor Surveillance System has shown that increasing obesity is associated with increasing disability. [42]
• RAND Corporation researchers, using data from the Health and Retirement Study and the Behavioral Risk Factor Surveillance Survey, found that obesity was the strongest factor related to the sharp rise in disability rates over the last two decades in Americans younger than 60. [43,44]

Data from NHANES III [1988-1994] and NHANES 1999-2004 showed that among obese individuals, the prevalence of functional impairment increased from 36.8%-42.2%. [45]
• This meant much difficulty or inability to walk one-fourth mile, walk up 10 steps, stoop, lift 10 lb, walk between rooms, and stand up from an armless chair.

Elevated body mass index (BMI) is strongly associated with increased self-reported functional limitations and decreased physical performance test scores. [46]
Obesity also increases the risk of both short and long periods of absence from work due to sickness. [47]

3. DEFINITION AND ASSESSMENT

The degree of overweight can be simply and quickly evaluated by using two measures – body mass index, or BMI, and waist circumference.

- The USPSTF found good evidence that BMI is reliable and valid for identifying adults at increased risk for mortality and morbidity due to overweight and obesity. [2]

Waist circumference is a simple measure of abdominal fat, the most significant fat-related risk to health. A high waist circumference is associated with an increased risk of high BP, diabetes, abnormal cholesterol, and the metabolic syndrome. [5]

- Waist circumference is most useful in people with a BMI in the 25-35 range where further risk stratification can guide counseling and/or aggressiveness of treatment. [3]
- A larger waist circumference in this range indicates greater health risks related to obesity. [3, 101, 102]

BODY MASS INDEX
BMI is a ratio of height to weight – uses same formula and chart for men and women.

- It provides a single number that can be used to define the degree of overweight. But, it is only an indirect measure of body fat, hence the use of a waist circumference to assess the degree of abdominal fat.
- BMI requires only a weight and height measurement; should be done in examination room, in gown and without shoes.
- A chart can be used to see the BMI for a given height and weight.
- It can also be calculated by hand:
  \[
  \text{BMI} = \frac{\text{Weight in lbs} \times 704}{\text{Height in inches}^2}
  \]
- Or can be calculated online at: http://nhlbisupport.com/bmi/bmicalc.htm

- Interpretation of BMI:
  - < 18.5 Underweight
  - 18.5 - 25 Normal Weight
  - 25.1 – 29.9 Overweight
  - 30.0 – 34.9 Obese Class I
  - 35.0 – 39.9 Obese Class II
  - 40.0 + Obese Class III

- A BMI of 30.0 is generally associated with being about 30 pounds overweight.
- BMI is of limited value for those at the extremes of muscle mass -- heavily muscled and frail elderly. The former tend to classified as overweight due to the extra weight of their muscle mass; the latter may appear to have a healthy weight when overweight due to diminished muscle mass. [4]

WAIST CIRCUMFERENCE
Waist circumference is not measured at umbilicus, but rather at the level of the iliac crest. [6]

- To measure:
  1. Locate upper edge of hip bone, the iliac crest, on each side
  2. Place a measuring tape in a horizontal plane (parallel to the floor) around the abdomen at this level
  3. Make sure the tape is snug but not so snug that it compresses skin
  4. Take the measurement at the end of a normal exhalation

- Patient should be cautioned not to suck in gut. A wall chart should be present to compare patient’s measures with standards.

Interpretation of waist circumference: The point at which health risks increase significantly is:
4. THE ROLE OF HEALTH PROFESSIONALS

RECOMMENDATIONS:
The United States Preventive Services Task Force, an independent panel of experts on preventive services that rigorously reviews the evidence to formulate its guidance, recommends that clinicians screen all adult patients for obesity and offer intensive counseling and behavioral interventions to promote sustained weight loss for obese adults. [48]

According to the AMA Council on Scientific Affairs, health professionals have a key responsibility to:

- promote preventive measures and encourage positive lifestyle behaviors relating to obesity,
- counsel patients about safe and effective weight loss and weight maintenance programs, and
- identify and treat obesity-related co-morbidities. [49]

ADVICE TO LOSE WEIGHT
A majority of studies reviewed suggest that only about 2 out of 5 obese patients are advised to lose weight in regular exams, even when they have chronic conditions made worse by their weight [50-57]

- And the proportion of obese individuals who are advised by their doctors to lose weight does not appear to be increasing:
  - 42.3% in 1994 to 40.3% in 2000 [55]
  - 44% in 1994 to 40% in 2000 [56]
  - Among obese not graduating from high school, advice declined from 41% to 32% [56]

Some studies show lower and higher rates:

- CDC – Only 65% of obese adults were ever told by a health care provider that they were “overweight.” Obese women were more likely to be told they were “overweight” than were men. [8]
- 2000 National Health Interview Survey (NHIS) -- 21.3% and 24.5% of respondents received physician advice on diet and exercise, respectively. [58]
- 1996 BRFSS -- 32.4% and 47.3% of obese without and with co-morbidities received advice to lose weight; only 5.6% and 13.6% of overweight without and with co-morbidities. [59]
- 2000 BFRSS survey, 12% of overweight, 35% of obese recalled receiving advice to maintain or lose weight. [60]

Limitations of evidence:
The data are fairly consistent but could still underestimate the advice given to obese patients. Many of the studies only capture what the patient recalls of a visit or what the physician codes. Obesity and overweight may not get coded for lots of reasons, so just because it wasn’t coded doesn’t mean there wasn’t a conversation about obesity with the patients.

IMPACT OF ADVICE TO LOSE WEIGHT
Advice from a health professional to lose weight, especially from a doctor, has been consistently shown to be a powerful stimulus for obese patients to make a serious attempt to do so. [59,61-63]

- 8 out of 10 obese patients who received such advice actually made a serious attempt. [54,59]
- Several studies have shown a 3-4 fold increase in the odds that a patient will attempt weight loss if it is recommended by a trusted health care professional. [54, 64-66]
- Patients who recalled being counseled to lose weight were more likely to understand the risks of obesity, the benefits of weight loss, and were at a higher stage of readiness for weight loss. [62]
- Professional advice was the strongest independent predictor of weight loss efforts in obese patients with arthritis. [66]
Interventions that do not involve assistance from healthcare professionals are hardly any more effective than dieting alone. [67]

**COUNSELING PRACTICES**

**Weight loss counseling by primary care physicians is often inadequate to have positive effects.**

- Even when they advise patients to lose weight, physicians often provide insufficient guidance on weight management strategies, possibly because of inadequate counseling skills and confidence. [62]
- BRFSS data (2000-2005) shows that less than half of community dwelling obese adults who responded to the survey reported receiving weight loss counseling from their clinician. [59]

Although most overweight and obese patients believe they should lose weight, it is often not discussed during office visits.

- 97% of the obese and 84% of overweight patients thought they needed to lose weight.
- But less than half of obese patients and less than a quarter of overweight patients had discussed weight with their current physicians. [68]

Only 29% of all overweight respondents and fewer than half with additional cardiovascular risk factors, reported that they had been counseled to lose weight. [52]

Data from the 1995-1996 National Ambulatory Medical Care Surveys showed that physicians provided counseling for weight loss, exercise and diet in only about a quarter of all obese patients. [60]

- In those with obesity-related comorbidities, weight loss counseling occurred at only half of the visits.

Throughout the 1990s, however, diet counseling was provided in <45% and physical activity counseling in ≤ 30% of visits by adults with hyperlipidemia, hypertension, obesity, or diabetes mellitus. [69]

Trained medical students’ observations of patient visits in 38 primary care practices showed that physicians counseled patients on dietary habits in 25% of visits and exercise in 20% of visits; new patients were counseled 30% more often than established ones; counseling was more frequent when there were dietary and exercise brochures in the office. [70]

Obese women report satisfaction with care for general health and with physicians’ medical expertise, but were significantly less satisfied with care for their obesity and with their physicians’ expertise in this area.

- Almost half reported that their physician had not recommended any of 10 common weight loss methods, and 3 out of 4 indicated they looked to their physician only a "slight amount" or “not at all” for help with weight control. [71]
- It was not a negative experience; it just was not being addressed.

**When counseling is given, it often does not include a specific plan.**

- Patients were more likely to receive education about weight loss than specific behavioral advice on how to lose weight.
- 65% received information on the benefits of weight loss, but only 37% received specific weight control advice, and 28% were advised to increase their physical activity. [72]
- Only 1to 5 of every 20 obese patients are given specific fat loss counseling, especially a plan that includes an increase in physical activity or exercise. [62,72,73]

Counseling is most effective when the physician presents the counseling as a plan or prescription and follows up with the patient on it.

- Overweight adults who had been advised by their physician to exercise, and provided an exercise plan, were nearly 5 times more likely to meet physical activity recommendations. [74]

**Patients want more counseling**

Most patients (especially those who are overweight or obese) want more help with weight management than they are getting from their primary care physicians.

© 2009. American College of Preventive Medicine. All rights reserved.
The types of weight management assistance that patients most wanted from their physicians were: (1) dietary advice, (2) help with setting realistic weight goals, and (3) exercise recommendations. [68]

WHO IS BEING COUNSELED ABOUT WEIGHT LOSS?
A review of over 600 family practice encounters showed that counseling was more likely to occur when either:

- Patients made weight the reason for the visit or explicitly asked for help with weight loss, OR
- Clinicians viewed excess weight as an exacerbating factor for another medical problem. [75]

Data from the 2003/2004 National Ambulatory Medical Care Survey showed that patients who went to the doctor for weight-related concerns or with an obesity-related diagnosis were more likely to receive counseling. [76]

- Longer visit times were also associated with greater probability of receiving obesity-related counseling.
- Physicians were more likely to provide weight control advice to their patients who had obesity-related comorbidities than to patients who were overweight or obese and without risk factors. [72]

The 2002 Medical Expenditure Panel Survey showed that health professionals are more likely to recommend exercise when they perceived the level of risk for CVD or diabetes to be high. [77]

- As risk factors declined, fewer patients were advised to exercise, suggesting missed opportunities for disease prevention.
- However, exercise has not increased proportional to exercise advice. The challenge remains converting patient awareness into behavior change.

REASONS FOR LOW RATES OF COUNSELING

CLINICIAN ATTITUDES
Patients and physicians often have different perceptions and expectations about their weight, with physicians typically being more pessimistic. [78]

- Patients often report a higher motivation to lose weight than their physicians perceive them to have. Physicians who believed patients preferred to discuss weight more often and who saw more patients per week were less likely to underestimate patient motivation. [78]

Pessimism stems from:

- negative attitudes about managing obesity,
- belief that it is not that serious a medical condition, and
- low expectations regarding patient's ability to carry out a plan. [79,80]

Clinicians shy away from attempting to treat obesity for many reasons, including:

- time constraints,
- biases against the obese,
- lack of a cogent counseling plan, and
- pessimism about the likelihood of success, especially long-term. [81]

Many health professionals have biases against obese patients, and underestimate their ability to do anything about their condition. [82]

- They tend to prescribe more tests for heavier patients, but spend less time with them, and view them significantly more negatively on most indices. [83]
- Physician characteristics predict the level of bias. Associated with lower level of bias -- male, older, a more positive outlook on life, weighing more, having friends who are obese, and indicating an understanding of the experience of obesity. [84]

Doctors and nurses generally report little enthusiasm for weight management.

- Most docs felt it was an inappropriate use of their time and passed obese patients onto the nurses; nurses felt that obese patients were "off-loaded" onto them. Frustration over "lack of
success" was a major theme. Lack of motivation on the part of the patient was seen as the major problem. Docs wanted to be more directly involved when a concomitant disease was diagnosed. [85]

- The research is not strong, but studies also suggest that a significant proportion of nurses have negative attitudes and beliefs about the obese. [86]
- Nearly a quarter of nurses reported in one study that they are "repulsed" by obese persons. [87]
- Nurses’ expectations of patient compliance and ability to lose weight were low. Nurses who work in weight loss clinics report greater confidence in giving weight loss advice and more optimism about outcomes. [80]

**BARRIERS TO BETTER CARE**

**Limited physician training** in weight-loss counseling explains why physicians find it challenging to discuss obesity with patients. [89]

- Lack of training in obesity management has been associated with lower rates of discussing diet and exercise with obese patients. [90]
- Many physicians feel ill-prepared to manage obesity in the primary care setting. Traditionally most have received little training in evidence-based obesity interventions. Many believe they do not have effective tools to address obesity and/or that obesity management is not within their scope of practice. [91]
- Nurses also report a lack of training in obesity management. [92]

**Lack of time** is also a barrier to implementing risk prevention. There is a need for time-efficient educational programs. [93]

**The office environment can undermine the counseling process.** [94]

- Many obese patients perceive their reception as unpleasant; this is reinforced by chairs that are too small, gowns that aren't big enough, and being weighed in a semi-public area such as a hallway.
- Emotional support is often lacking. Many patients report feeling like they are treated inferiorly or looked down upon.
- The more obese, the more likely they are to have negative views on their treatment and to report being treated like second class citizens.

**Obese patients often feel reluctance talking about their weight.**

- Some delay medical care because of concerns about disparagement by physicians and health care staff, or fear of being weighed. Simple accommodations, such as providing large-sized examination gowns and armless chairs, as well as weighing patients in a private area, may make the medical setting more accessible and comfortable. [95]
- Obese patients are often ambivalent about the services received. Patients often perceive there to be ambivalence and a lack of resources on the part of the health services. [88]

**NEED TO ESTABLISH A PARTNERSHIP**

Better relationships with primary care professionals and more intensive support have been shown to help with changing patient perceptions. [88]

- Three out of four look to their physician for only a "slight amount" of help or "none at all" when it comes to weight control. [71]

Some obese patients even delay medical care because of concerns about disparagement by physicians and health care staff, or fear of being weighed. [96]

**WHAT’S NEEDED**

- **Strategies to "medicalize" the patient's obesity** as well as increase the likelihood of patients identifying weight as a problem. [75]
- **Enhanced knowledge** about evidence supported recommendations. [97]
- **Better office systems:** [97]
  - Systems and methods to make counseling more efficient
Tools to support individual assessment and advice giving to suit individual circumstances

- Training in behavioral counseling techniques, especially motivational interviewing (MI).
  - Use of MI techniques resulted in patients attempting to lose weight and changing their exercise patterns. [98]
  - Training in how to discuss obesity with patients in a way that makes them feel comfortable and increases their confidence and motivation to make the necessary changes. [89]
  - It takes more than simple advice to change behaviors. The challenge remains converting patient awareness into behavior change. [77]

- Better communication.
  - Patients and physicians often disagreed about the discussions they had. Physicians report discussing weight issues more often than do patients. [99]
  - Physicians must focus discussions on specific details of diet and physical activity behaviors, and by clarifying that patients understand the information provided.

- Need to re-define successful outcomes
  - Need to define success in terms of changes in behaviors, a healthier lifestyle. [85]
  - Reimbursement schemes that allow physicians to be fairly reimbursed for the time they spend working with patients on weight management.

- Better linkages with community resources and programs to offer patient additional opportunities to receive support and reinforce the healthy lifestyle message.

5. FACTS ABOUT OBESITY

You don't need to lose a lot of weight to have a positive effect on your health. [169]
- A reduction of only 5% to 10% of body weight improves blood pressure, lipid profiles, insulin sensitivity, and endothelial function, and reduces thrombosis and inflammatory markers. [240-243]

It's about fat, not weight.
- In general, as we get fatter we weigh more … but, weight is not a direct measure of fat.
- Body weight is made up mainly of muscle, bone, water and fat. Hence, changes in any of these can affect weight. People who lift weights get heavier because they build muscle. Their excess weight is not due to fat. Similarly, overly sedentary people can lose muscle and bone mass, hence not appear overweight, but may still be overfat.
- Obesity is not overweight – it is overfat, the state of carrying too much fat on one's body. It is the excess fat that causes health problems. [100]

Not all fat is created equally.
- Excess fat in the abdominal region poses greater health risks than fat accumulated elsewhere, especially concerning the risks for cardiovascular disease, high blood pressure, Type 2 diabetes and the metabolic syndrome. [101,102]
- The problem isn’t the outer layer of abdominal fat, that is, the “spare tire”, but rather the deeper layer of fat that cushions the abdominal organs. These fat cells secrete several biologically active molecules (adiponectin, resistin, leptin, plasminogen activator inhibitor-1, tumor necrosis factor-alpha, and interleukin-6) that contribute to hyperinsulinemia, insulin resistance, dyslipidemia, and proinflammatory and prothrombotic clinical states. [103]

Risks associated with obesity increase directly with the accumulation of fat.
- As BMI and waist circumference increase the risk of many chronic conditions as well as premature death itself increase [see section on impact on health]

Fat gain or loss results from an imbalance between calories consumed and calories expended. [104]
- The first law of thermodynamics states that energy can neither be created nor destroyed, rather it can only be transferred from one form, or one system, to another. We get energy from the food...
we eat (measured in calories) and this energy is used for all of our metabolic processes as well as every movement we make.

- Any extra calories that we consume above what we use has to be stored, and that is what we have fat cells for. Fat cells have an unlimited ability to store energy – they just keep expanding. We gain fat.

**Genes play a role, but not as big as many of us think.**

- Some people’s genes make them more likely to store fat when they consume more calories than they expend. Other studies suggest that certain environmental factors, such as a high fat intake, can modify the expression of some genes involved in weight gain. [105]
- Genetic factors can also modify the effects of physical activity on weight change [106]. A sedentary lifestyle may have an obesity-promoting effect in men with a genetic predisposition.
- Ultimately, genes influence each individual’s energy balance so those with fat promoting genes must be more diligent in their efforts to change the balance.

**Fad weight loss diets are remarkably similar in failing over the long term** [107].

- To change our caloric balance, we can do three things:
  1. Take in fewer calories in the food and drink we consume
  2. Increase our activity level – move more
  3. Increase our metabolism – the rate that we burn calories at rest
- Fad diets depend on the first – restricting some type of food so we consume fewer calories.
- Results in short-term weight loss, but more water loss than fat loss.

**Physical activity is at least as important as diet in successful long term weight loss.**

- It is the key to long-term weight loss because it helps prevent the slowing of metabolism when calories are reduced AND it increases fat loss while preserving muscle when an energy deficit is created. [108]
- Physical activity is the strongest independent predictor of a decrease in total-body fat and central abdominal fat. It may be even more important in those at increased risk for obesity because of their genes. [109,110]

**Reducing sedentary activities may be as important as increasing exercise.**

- Adult TV viewing has been consistently associated with greater obesity risk in cross-sectional and longitudinal studies. [111]
- Such evidence cannot be viewed as conclusive, but certainly appears suggestive. May be as much the result of excess calories consumed while watching TV.

**A huge industry has been built on repeated failures.**

- Americans spend over $33 billion annually on the steady stream of new weight-loss products and services that are introduced with great promises but in reality help very few overcome their weight problems. [112]

**6. UNDERLYING THE EPIDEMIC**

**EATING HABITS THAT CONTRIBUTE TO OBESITY**

**Compared to 20 years ago:**

- We are now eating about 150 calories more per day,
- We’re snacking more, eating out more and eating more fast food, and
- Portion sizes in fast food chains have more than doubled in size. [113,114]

**We’re eating larger portions of just about everything, especially low fat foods, packaged energy dense foods (like candy bars and chips) and beverages.**

- People who choose low fat foods often eat more of them, thinking they are healthier, and end up consuming more calories. [115,116]
Between 1977 and 1996, portion sizes increased both inside and outside the home for all categories, except pizza. The energy intake and portion size of salty snacks increased by 93 kcal, soft drinks by 49 kcal, hamburgers by 97 kcal, french fries by 68 kcal, and Mexican food by 133 kcal.

The largest portions are consumed at fast food establishments. The medium fries in a McDonald's value meal contain 450 calories and 22 grams of fat. Packaged foods like candy bars and chips have also increased in size, but most people still look at it as one serving. [117]

Eating more fast food tends to undermine the overall quality of the diet.

- Over a third of adults consume fast food regularly. [118]
- Associated with greater total calories, more fat and sugar, and less fiber, fruit, vegetable and milk intake. All of these increase the tendency for weight gain.
- Similar differences are observed in individuals on days when they ate fast food vs days when they do not. [119]

We are also consuming more added sugars that are empty calories.

- These are “bad” carbohydrates, sugars that are eaten separately at the table or used as ingredients in processed or prepared foods. Non-diet soft drinks are the largest source, accounting for a third of added sugars. Diets high in sugars have been associated with various health problems, including dental caries, dyslipidemias, obesity, bone loss and fractures, and poor diet quality. [120,121]

Fewer low energy dense foods -- fruits and vegetables and whole grains

- Only 1 in 5 Americans consumes the recommended 5 servings of fruit per day [122]
- In 2005, 1 in 3 U.S. adults ate fruit two or more times a day, and 1 in 4 ate vegetables three or more times a day. [123]
- Cost of fruits/vegetables has gone up 40% since 1985, cost of fat and sugar has gone down[124]
- The Nurses' Health Study – higher fruit and vegetable intake had a 24% lower risk of becoming obese compared with lowest intake. [125]
- Weight gain was inversely associated with the intake of high-fiber, whole-grain foods and positively related to the intake of refined-grain foods. [126]
- Women in the highest quintile of dietary fiber intake had a 49% lower risk of major weight gain than did women in the highest quintile.

Bottom line is that the quality of our diet has gotten worse over the last 20 years. A large gap remains between recommended dietary patterns and what Americans actually eat.

- Diet quality improves as fat intake decreases. [127,128]
- A diet characterized by higher intakes of red meats, high-fat dairy products, and refined grains has been shown to be associated with higher levels of insulin, C-peptide, leptin, and homocysteine, all biomarkers of CHD and obesity. Conversely a diet characterized by higher intakes of fruit, vegetables, whole grains, and poultry is associated with lower levels of insulin and homocysteine. [129]

The focus on overall diet quality is often lost in the national obsession with diets. [130]

ACTIVITY HABITS THAT CONTRIBUTE TO OBESITY

We are becoming less and less active.

- Sedentary behaviors, especially TV watching, are associated with a significantly elevated risk of obesity, as well as type 2 diabetes, whereas even light to moderate activity (e.g., walking) is associated with substantially lower risk. [131]
- The time spent sitting watching TV or sitting at work is directly related to the amount of weight gained, and the risk for obesity, while time spent walking is inversely related to weight gain. [131,134]
- Each 2-h/d increment in TV watching was associated with a 23% increase in obesity; each 2-h/d increment in sitting at work was associated with a 5% increase in obesity. [134]
In contrast, standing or walking around at home (2 h/d) was associated with a 9% reduction in obesity. Each 1 hour per day of brisk walking was associated with a 24% reduction in obesity. [134]

6 of every 10 adults do not get enough consistent physical activity to provide health benefits.
- More than 1 in 4 are not active at all in their leisure time; only 1 in 5 Americans is regularly active. [132]
- BRFSS 2005 - more than half of adults do not get the minimum level of physical activity to maintain health – 30 minutes of moderate activity 5 days a week (equiv of walking 2 miles at a 3-4 miles per hour pace) or 20 min of vigorous activity 3 times per week [133]
- 30% of new cases of obesity could be prevented by adopting a relatively active lifestyle (<10 h/wk of TV watching and 30 minutes of brisk walking per day). [134]

Many people underestimate the amount of exercise they need to lose and maintain weight loss. [135]
- The combination of a poor diet (characterized by higher consumption of red meat, processed meat, French fries, high-fat dairy products, refined grains, and sweets and desserts) combined with a low level of physical activity is associated with a particularly high risk for obesity and type 2 diabetes. [136]

The environment we live in discourages physical activity.
- A national study of almost 450 communities found that people who live in sprawling areas tend to walk less, weigh more and are more likely to have high blood pressure than urban dwellers. Adults who live in sprawling counties have a lower level of physical activity in their daily lives – drive to work, lunch, school, shopping, etc. Children do not walk to school as they did in the past. We have not paid enough attention to how the design of our homes, offices and neighborhoods affects our health. [137]

INEFFECTIVE STRATEGIES WHEN TRYING TO LOSE WEIGHT
Not using the recommended combination of reducing caloric intake and increasing physical activity.
- Fewer than 1 in 3, perhaps as low as 1 in 5, follow the recommended approach of cutting calories and increasing physical activity to at least 150 min/wk. [138-143]
- Data from the 2000 BRFSS survey showed that among those trying to lose weight, approximately 19% of women and 22% of men reported using fewer calories and at least 150 min/wk leisure-time physical activity (the very minimum recommended for weight loss). [142]
- NHANES 2001-2002 confirmed this -- less than one fourth combined caloric restriction with the higher levels of physical activity (300 or more minutes per week) as recommended in the guidelines. [143]

Depending on diets alone.
- There are no significant differences between any diets in terms of sustained weight loss. Overall weight loss at the 12-18-month follow-up in all studies is very small. [107]
- There is not much difference between the different diets -- long term weight loss and adherence are poor. They can work if people stay with them, but they are not designed for the long haul. [144]
- Evidence paints a grim picture: those who complete weight-loss programs lose about 10% of their body weight, only to regain two-thirds of it within a year and almost within 5 years. [1]

Not doing enough physical activity.
- Only 1 in 7 of those trying to lose weight have been shown to exercise regularly; half do not exercise at all. [145]
- Among those who were using exercise as a weight loss strategy, just over half met the minimal 1998 NIH recommendation of ≥ 150 min/wk; 46% met the lower end of the 2001 American
College of Sports Medicine recommendation of 200 min/wk, and 30% met the upper end for 300 min/wk. [146]
- But only 19% met the 2002 Institute of Medicine recommendation of 420 min/wk. [146]

Depending on weight loss supplements.
- As much as $50 billion a year may be spent by Americans on weight-loss products and services. [147]

### 7. EVIDENCE OF EFFECTIVENESS

#### LIFESTYLE APPROACH
Many studies show that the best approach involves changes in both eating and activity behaviors.
- A Cochrane review concluded that diet combined with exercise produced a 20% greater initial weight loss than diet alone, and that the weight loss was more likely to be sustained after one year. [148]
- Exercise results in small weight losses across studies, but when combined with diet results in a greater weight reduction than diet alone. [149]
- Increasing exercise intensity increased the magnitude of weight loss.
- Advice-only and exercise-only groups have been shown to result in minimal weight loss, while weight-loss interventions utilizing a reduced-energy diet and exercise are associated with moderate weight loss at 6 months. [150]

#### EATING BEHAVIORS

##### Increased Portion Sizes – Increased Energy Intake
- Several well-controlled, laboratory-based studies have shown that larger food portions leads to increases in energy intake. Individuals presented with large portions generally do not respond with increased levels of fullness, suggesting that hunger and satiety signals are ignored or overridden. [151]

##### Lower Energy Density Diet – Reduced Energy Intake
- Several studies have demonstrated that eating low-energy-dense foods (such as fruits, vegetables, and soups) maintains satiety while reducing energy intake. Eating satisfying portions of low-energy-dense foods can help to enhance satiety and control hunger while restricting energy intake for weight management. [151]
- People eat a fairly consistent volume of food on a day-to-day basis whether the amount of food contains many or few calories. Therefore, the number of calories in a particular amount or weight of food (i.e., the food’s energy density) affects the total number of calories a person consumes. [152]

##### Increased Whole Grains – Lower BMI
There is strong evidence that a diet high in whole grains:
- Is associated with lower BMI and smaller waist circumference, and reduced risk of overweight
- Can help reduce weight gain and lead to significant weight loss. [153]

Weaker evidence suggests that high intakes of refined grains can cause small increases in waist circumference in women. No evidence supports restricting cereal intakes for sustained weight loss. [153]

Whole-grain intake is inversely associated with BMI; refined grain intake is not. [154]
- Because overall dietary quality tends to be higher for high-carbohydrate diets, a low-fat dietary strategy with emphasis on fiber-rich carbohydrates, particularly cereal fiber, may be beneficial for health and weight control.
Mediterranean Diet – Lower BMI
A 3-year prospective study showed that the adoption of a Mediterranean diet pattern reduced the likelihood of overweight people becoming obese. [155]

- Adherence to this pattern is inversely associated with BMI and obesity, and the risk for becoming obese. [156]
- An inverse relation between adherence to a Mediterranean dietary pattern and prevalence of obesity in a free-eating, population-based sample of men and women. [157]

Higher Fat – Higher BMI
Many studies suggest the capacity of the body to oxidize dietary fat is a major risk factor for a positive energy balance. Most of the fat consumed is stored before oxidized. [158]

Diets high in fat have been proposed as a cause of obesity, primarily because fat is more energy-dense than other macronutrients. In the Prostate Cancer Prevention Trial, BMI increased by 0.53 for every 500 kcal of fat consumed daily. [159]

PHYSICAL ACTIVITY
Cross-sectional studies show that individuals who walk more tend to be thinner than those who walk less.

- Pedometer-based walking programs result in a modest amount of weight loss. Longer programs lead to more weight loss than shorter programs. [160]

A dose-response relationship between aerobic exercise and visceral fat reduction has been observed in obese subjects, with an intensity of at least 10 METs per hour (e.g., brisk walking, light jogging or stationary cycling). [161]

60 minutes of exercise per day is recommended for weight loss. But, significant health benefits are seen with 30 minutes of daily activity of moderate in intensity. [162]

- Increasing exercise is associated with improved cardiovascular disease risk factors even if no weight is lost. [149]

Exercise is also vital to maintain weight loss
- The majority of randomized, controlled trials (RCTs) show only modest weight loss with exercise alone, and slight increases in weight loss when exercise is added to dietary restriction. [163]
- The energy deficit produced by exercise is far smaller than that produced by dietary restriction.
- But, many studies show the essential role of physical activity in weight-loss maintenance; prospective trials show a clear dose-response relationship between physical activity and weight maintenance.

Exercise is important to prevent a decrease in fat-free mass and to increase the visceral fat-mass loss. [164]

- The amount of training is more important than training intensity for fat-mass loss.
- The implementation of resistance training does not augment fat-mass loss but increases fat-free mass.

BEHAVIOR THERAPY
Behavior therapy is both the most studied and most effective therapy for treating obesity at present. [165]

- A meta-analysis of 19 RCTs showed that the addition of active support, such as behavioral therapy, makes dietary weight loss measures more effective in obese patients. [67]
- Behavioral therapy with spousal participation seems to be most effective, with half of trial participants losing about 7 kg after one year. [67]
- Interventions that do not involve assistance from healthcare professionals are hardly any more effective than dieting alone. [67]
8. GUIDELINES AND RECOMMENDATIONS

INTERVENTIONS

FROM THE USPSTF: [166]

Interventions to use
Offer obese patients either: 1) high-intensity counseling and behavioral interventions or 2) refer them to programs that provide high-intensity counseling and behavioral interventions to promote sustained weight loss.
- A high-intensity intervention is at least 2 individual or group sessions per month for at least the first 3 months.
- A medium-intensity intervention is a monthly intervention. Anything less frequent is a low-intensity intervention.

Effectiveness of interventions
The most effective interventions combine nutrition education and diet and exercise counseling with behavioral strategies to help patients acquire the skills and supports needed to change eating patterns and become physically active.
- The 5-A framework (Assess, Advise, Agree, Assist, and Arrange) may be useful in helping clinicians guide interventions for weight loss.

Use of Medications
Pharmacological treatment should be considered only as part of a program that also includes lifestyle modification interventions.
- Orlistat and sibutramine have been approved for weight loss by the FDA; they can produce modest weight loss, but adverse effects are frequent and there are no data on the long-term (longer than 2 years for sibutramine, longer than 4 years for orlistat) use.

Use of Surgery
Bariatric surgery should be reserved for patients with class III obesity and for patients with class II obesity who have at least one other obesity-related illness.
- It is the only intervention that has demonstrated clinical significant weight loss and sustained weight loss maintenance in this group. However, surgery carries higher risks than other modes of treatment and should be reserved for patients who fail other options for weight loss treatment.

FROM THE NIH/NHLBI:

The National Heart, Lung, and Blood Institute of the National Institutes of Health recommends lifestyle modification as the primary intervention.
- For individuals who do not respond or for those who also have a weight-related illness, a weight loss medication may need to be added to their treatment plan. [64]

SCREENING AND COUNSELING

The U.S. Preventive Services Task Force (USPSTF) recommends that clinicians screen all adult patients for obesity and offer intensive counseling and behavioral interventions to promote sustained weight loss for obese adults. [166]

Key Evidence-Based Practice Recommendations from the USPSTF [167]

Determine a patient's level of obesity by calculating the BMI.
- Good evidence that body mass index (BMI) is reliable and valid for identifying adults at increased risk for mortality and morbidity due to overweight and obesity.

Formulate an individualized treatment plan according to the patient's level of obesity and health risks.
• Fair to good evidence that high-intensity counseling—about diet, exercise, or both—together with behavioral interventions aimed at skill development, motivation, and support strategies produces modest, sustained weight loss (typically 3-5 kg for 1 year or more) in adults who are obese.

Develop an individualized diet for healthy weight loss using food, formula diets, and self-monitoring tools, according to the patient's level of obesity and health risks.

• Fair to good evidence that high-intensity counseling—about diet, exercise, or both—together with behavioral interventions aimed at skill development, motivation, and support strategies produces modest, sustained weight loss (typically 3-5 kg for 1 year or more) in adults who are obese.

Develop an individualized schedule of physical activities and the amount necessary for managing body weight and health, according to the patient's level of obesity and health risks.

• Fair to good evidence that high-intensity counseling—about diet, exercise, or both—together with behavioral interventions aimed at skill development, motivation, and support strategies produces modest, sustained weight loss (typically 3-5 kg for 1 year or more) in adults who are obese.

Discuss behavior modification techniques with obese patients to assist them in weight control.

• Fair to good evidence that high-intensity counseling—about diet, exercise, or both—together with behavioral interventions aimed at skill development, motivation, and support strategies produces modest, sustained weight loss (typically 3-5 kg for 1 year or more) in adults who are obese.

From AAFP Panel on Obesity:

• Measure BMI AND waist circumference at every office visit where weight is recorded, and include with vital signs. [168]

9. A FAT LOSS PLAN THAT WORKS

THE BASIC PLAN

The basic plan for fat loss is simple, according to the NIH Clinical Practice Guidelines:

• A reduced calorie diet combined with increased physical activity with the emphasis on long-term weight management rather than short-term extreme weight reduction. This approach produces weight loss, decreases abdominal fat, and increases cardiorespiratory fitness. [169]
• The goal should be a ½ lb -2 lb weight loss per week.
• Modest physical activity and small incremental healthy dietary changes incorporated into one's lifestyle have a positive effect on weight loss and promote the maintenance of favorable body weight and body composition [170]
• Best diet program is one that cuts calories modestly – doesn’t matter from what source. [171]
• Choosing a variety of healthy foods in the correct portion sizes is the optimal diet. The Dietary Guidelines for Americans is a good resource to help people guide their dietary habits. [172]

There is fair to good evidence that the best strategy for obese patients involves fairly intensive counseling including both diet and exercise, with behavioral interventions aimed at skill development, motivation, and support strategies; can produce modest, sustained weight loss (typically 3-5 kg for 1 year or more). [166]

• Interventions that include an exercise component are more effective for long term weight loss. [167]

Ultimately the key for a clinic-based weight management program is to get the focus on lifestyle – to prescribe and encourage a way of living every day for the rest of one’s life that promotes a healthy weight.

• This approach has been shown to be successful at promoting changes in exercise and dietary behaviors that result in moderate weight loss, increased cardiorespiratory fitness, and improved lipid profiles. [168,169]

Behavior therapy is required to change eating and activity habits. [173]
A number of behavior modification strategies have shown good efficacy, including a tailored problem-solving intervention, involving goal-setting, self-monitoring, stimulus control, cognitive restructuring, stress management, relapse prevention, social support, and contracting.

Specific behavioral strategies include:
- logging and tracking diet and exercise patterns in a diary,
- eating a low calorie diet,
- limiting the amount of calories from fat,
- expending calories routinely through exercise,
- monitoring weight regularly,
- setting realistic goals, and
- developing a social support network. [174]

THE NATIONAL WEIGHT CONTROL REGISTRY has identified several keys to long-term success:
1. a serious and long-term commitment to changes in eating habits and exercise,
2. following a diet fairly low in fat (around 24% of calories, compared to the generally recommended 30%),
3. eating breakfast regularly, and eating 5 times a day, on average
4. being dedicated to exercise, usually a regular walking program,
5. not relying on weight loss drugs,
6. looking at past failures as learning experiences,
7. focusing on doable, process oriented goals,
8. monitoring their body weight regularly (at least weekly) to catch weight gain quickly,
9. monitoring their food intake if they ever begin to gain. [175,176]

SPECIFIC EATING CHANGES FOR FAT LOSS
Reduce overall fat intake
- Many studies have shown that body fat increases when dietary fat increases, and that reducing dietary fat leads to reductions in body fat.
- Data from the National Weight Control Registry supports that moderating dietary fat intake is a key strategy for long-term management of body weight. [177]
- The major sources of fat are added fats (butter, oils, and salad dressings), meats, and desserts. These also are the best targets for cutting fat intake. In the Women's Health Initiative Low-Fat Dietary Modification Trial, women cut over 24 grams of fat daily (220 calories) by just adding less butter, oils and salad dressings and reducing portions of meat and desserts. [178]
- According to national surveys, the most easily adopted fat cutting behaviors are 1) trimming fat from meat, 2) removing skin from chicken, and 3) eating chips infrequently. [179]
- Harder to adopt, but also effective fat reducing behaviors, include 1) eating baked or boiled potatoes without added fat, 2) avoiding butter or margarine on breads, 3) eating low-fat instead of regular cheeses, and 4) having fruit for dessert when dessert is eaten. [179]

Increase fruit and vegetable intake
- There is evidence that increasing fruit and vegetable intake reduces the likelihood of gaining fat. [118]
- Fruits and vegetables are high in water and fiber, hence they reduce the caloric density of the diet; they also promote satiety, and reduce overall energy intake. [180]

Eat more whole grains and fewer refined grains
- Evidence shows that weight gain is inversely related to the intake of high-fiber, whole-grain foods, and directly related to the intake of refined-grain foods. A key weight management task is distinguishing whole-grain from refined-grain products. [181]
- The USDA's “Continuing Survey of Food intakes” has shown that consumption of whole-grain foods by most U.S. adults is well below the recommended level.
- Greater than 1 in 3 average less than one whole-grain serving per day and only 1 in 12 eat at least three servings per day. [182]
Those who consumed more whole-grains have significantly better nutrient profiles than nonconsumers, including higher intakes of vitamins and minerals, and lower intakes of total fat, saturated fat and added sugars as percentages of food energy.

Eat less junk food
- Data from the National Health and Nutrition Examination Survey shows that the intake of energy-dense, nutrient-poor foods, such as visible fats, nutritive sweeteners and sweetened beverages, desserts, and snacks is increasing and often at the expense of nutrient rich foods. [183]
- As the intake of these foods increases, total caloric intake increases, fat intake increases, serum concentrations of vitamins A, C, E, folate, B-12 and several carotenoids decreases, and blood lipids are adversely affected.

Focus on healthier foods
- Very few of us, as in only about 3 of every 100, consume the recommended number of servings from all food groups on a given day. Fruits are the most commonly omitted food group. Intakes of specific types of vegetables (i.e., dark green, deep yellow) and of grains (i.e., whole grains) are well below recommended levels, while intakes of total fat and added sugars exceed recommendations. [184]

Reduce simple sugars
- We are consuming more sugar, in the form of table sugar, honey, fructose, corn syrup, than we should.
- According to a USDA survey, added sweeteners make up about 16% of our caloric intake, well above the recommended 6-10% upper limit. [185]
- The largest source of added sweeteners is regular soft drinks, which accounted for one third of intake. Other sources were table sugars, syrups, and sweets; sweetened grains; regular fruitades/drinks; and milk products.

Be mindful of every bite – every bite counts
- Overweight people have been shown to snack more without thinking about it, and to have a more distorted view of portion sizes of fatty foods and foods rich in carbohydrates [186]

Be aware of your eating environment
- Many subtle factors in our eating environment can make us eat more than we plan to or realize. Package size, plate shape, lighting, socializing, and variety are only a few of the environmental factors that can influence the volume of food we consume. They generally inhibit our monitoring of our intake or they alter what we perceive as normal consumption. [187]
- Social occasions are the toughest in this regard.

Consume more frequent meals
- How frequently we eat has been shown to affect how much we eat. This is certainly no surprise. If we are famished, we tend to eat faster and we eat more, that is, we eat past the point of satiety.
- Eat regular meals, beginning with breakfast, and have a snack between meals. Those who eat less frequent, but larger, meals consume significantly more calories overall [188]
- Obese men who ate more frequently over the course of the day consumed 27% less at a subsequent test meal than did the same men after consuming the same total calories in only two larger meals. [189]

Drink alcohol in moderation
- The greater the alcohol intake, the greater the BMI and waist circumference in both men and women. [190]
- Alcohol also stimulates the appetite and contributes to passive over-consumption [191,192]
PHYSICAL ACTIVITY AND EXERCISE FOR FAT LOSS
Adding exercise to a diet plan for weight loss is essential; it results in the most sustainable reduction in body fat and maintenance of lean body mass. [193,194]

- Studies have shown that those who maintain a higher level of physical activity are more successful in maintaining their reduced body weight. [195]

Both lifestyle activity and structured exercise offer benefits in terms of weight loss and lipids
- But, structured exercise helps preserve muscle mass better during weight loss. [196]

Increasing exercise is essential to change the metabolic activity of muscle, and to make it better at using fat for energy.
- The skeletal muscle of obese and pre-diabetic patients has a diminished capacity to handle fatty acids, primarily due to a diminished concentration of several enzymes involved in fatty-acid transport and oxidation. Increased physical activity and weight loss activates genes and increases the production of these enzymes in skeletal muscle, resulting in a better capacity to utilize fatty acids. [197]

Important interactions exist between genes, fat in the diet and physical fitness
- A low fitness level with susceptible genes not only reduces the capacity of muscle to oxidize fat, but may also decrease the tolerance of dietary fat. [198]

Add some planned exercise of moderate intensity.
- The optimal exercise plan consists of only moderate exertion, with the focus on increasing the total time involved in it. This is most effective for reducing blood pressure, improving metabolic health, mobilizing body fat, and preventing stroke and CHD.
- More intense exercise may increase energy expenditure by keeping metabolism elevated longer after exercise. Best to use this strategy when plateaus in weight loss occur. [199]

The key goal is to improve fitness.
- Many of the protective aspects of exercise and activity occur in overweight people who gain fitness but remain overweight. [4]
- Regular exercise is important even if there is no weight loss at all. Improved fitness reduces cardiovascular morbidity and mortality for overweight individuals even if they remain overweight. [194]

Try to walk a little more and a little faster.
- Greater physical activity level and a faster usual walking pace are associated with substantial reduction in risk of type 2 diabetes. Equivalent energy expenditures from walking and vigorous activity resulted in comparable magnitudes of risk reduction. [200]
- Walking is best for many reasons. Most of the NWCR success stories have used brisk walking, but many also include at least one other form of exercise, especially resistance exercise. [201,202]
- Daily walking has been shown to be better for reducing abdominal fat and insulin resistance than other exercise that increased exercise capacity more. [203]

There is a dose-response relationship between the amount of exercise and long-term weight loss – more exercise, more lasting weight loss. [204]
- 150 minutes of exercise a week appears to be the threshold, but 200 or more minutes enhances weight loss. [205]
- Greater body fat loss has been observed in overweight and obese postmenopausal women with increasing duration of brisk walking exercise. [206]
- The National Weight Control Registry has shown that those who have been able to maintain a substantial weight loss for 3 years average much more exercise -- about 400 calories burned per day in regular exercise of all types -- considerably more than generally recommended. [201,202]
It is critical to include some resistance exercise to add muscle and increase metabolism.

- Weight loss is associated with a reduction in resting metabolic rate (RMR) if it is accompanied by a decline in muscle mass. [207,208]
- When skeletal muscle decreases, the metabolic rate slows -- we burn fewer calories; bone density also decreases. We get weaker and tend to be even less active.
- Weight may be lost but it includes water and muscle, so we can actually get fatter when we lose weight.
- The solution is building muscle through progressive resistance exercise; the safest, least expensive means to lose body fat, decrease blood pressure, improve glucose tolerance, and improve quality of life. [209]
- Each pound of muscle burns about 14 calories per day at rest, so if you add 5 pounds of muscle, you burn another 70 calories a day in addition to that burned in exercise itself.

Helps prevent the loss of bone density that occurs with weight loss:

- Weight loss often reduces bone mineral density (BMD) and increases the risk of osteoporosis in postmenopausal women. [210]
- There is a positive relation between bone mass and energy expenditure, and a negative relation between bone mass and number of times on a weight loss diet. [211]
- Walking is the ideal exercise program; it can help maintain bone density in the legs and hips of women who lose weight. The threshold may be around 8 miles a week. Women who walk more than 7.5 miles per week had higher mean bone density of the whole body and of the legs and trunk regions of the body than women who walk less than 1 mile per week. [212]

**OTHER WEIGHT MANAGEMENT KEYS**

- Good sleeping habits may also help with weight loss. This means about 8 hours a night. Getting chronically less sleep has been shown to impair how our body handles food, in particular sugar. The result is impaired glucose tolerance. [213]

**10. BEHAVIORAL CHANGE THERAPY**

Traditionally, physicians have counseled patients to change habits by sharing facts about health and illness (informational power) and/or using their professional credentials (expert power). [214]

- However, research shows that this approach is not effective for promoting behavior changes.
- There is evidence that individualized behavior change counseling, however, can be effective when simple directive messages fail. [218]

Current thinking is to use a patient-centered collaborative approach for comprehensive and complex behavior change. [225]

- First assess patients’ readiness for behavior change,
- Then, help them address barriers to change.
- Treatment goals are developed only when patients are ready and understand the benefits and difficulties of weight management.
- Then, support patients through specific changes in diet and physical activity.

Determining patients readiness to change behaviors is essential to success.

- Attempting to promote change when not ready is frustrating and doomed to failure, and it undermines the individual's self efficacy and lowers expectations of health professionals for future attempts. This promotes the vicious cycle of dieting failures and self blame. [215]

Readiness to make behavior changes is more than simply asking, “Are you ready to lose weight?”

- Inquiring about readiness requires an in-depth assessment of your patients and the environment in which they live and work.
- Readiness can be viewed as the balance of two opposing forces: motivation, or desire to change, and resistance to change. [216]
Methods of assessing readiness: [226]
One method to begin a readiness assessment is to anchor the patients’ interest and confidence for change on a numerical scale. Simply ask your patients:

- “On a scale from 0 to 10, with 0 being not as important and 10 being very important, how important is it for you to lose weight at this time?”
- “Also, on a scale from 0 to 10, with 0 being not confident and 10 being very confident, how confident are you that you can lose weight at this time?”

Another efficient method to assess patient readiness is to use targeted questions, such as:

- “What is hard about managing your weight?” This open-ended question acknowledges that weight control is difficult and conveys an interest for further understanding.
- “How does being overweight affect you?” This question probes the burden of obesity. Common answers refer to appearance, self-esteem and image, physical ailments, and quality-of-life issues.
- “What can’t you do now that you would like to do if you weighed less?” This question provides useful information regarding expectations and benchmarks for assessing progress.
- “What would you like to get out of this visit regarding your weight?” This question directly addresses patients’ expectations related to how you can assist them in weight management.

Another approach is to ask your patients to complete a Weight Loss Questionnaire at home.

- You or your staff can review the questions during the patient interview. It is best to be completed when you feel that they are ready for it.

Several useful behavior-change models can be used to increase readiness for weight management in general and for specific weight management strategies. These include:

- The Health Belief Model [227]
- Social Learning Theory [228]
- The Transtheoretical, or Stages of Change, Model [229]

Elements of each model may be appropriate for counseling your patients, depending on your personal counseling style and your patients’ characteristics.

The Health Belief Model

- Says that health behavior is a function of people’s perceptions of their vulnerability to illness and of their perceived effectiveness of treatment.
- Behavior change is determined by whether people:
  - perceive themselves to be susceptible to a particular health problem
  - believe the problem is serious
  - believe that treatment/prevention is effective and not overly costly in regard to money, effort, or pain
  - are exposed to a cue to take health action

Social Learning Theory

- Patients must believe that they have the needed skills to change behavior (self-efficacy) before they will take action.
- An important component of skill development comes through modeling; most effective when it addresses prior attempts to change behavior, the strategies that were and were not successful, and ideas to help patients succeed this time.

Transtheoretical (Stages of Change) Model

- At any specific time, patients are in one of five discreet stages of change: precontemplation, contemplation, preparation, action, and maintenance.
- Patients move from one stage to the next in the process of change and, in fact, patients may repeat stages several times before they achieve lasting change.
- Physician’s tasks include both assessing patients’ stage of change and using behavioral counseling strategies to help them advance from one stage to the next.
Evidence supports the use of the Transtheoretical Model for managing obesity in the primary care setting. [219,220]

Interventions must be tailored to patients' readiness to change to enhance their progress and use of resources more effectively. [221]

- This requires an accurate assessment of patients' stage of change, followed by specific stage appropriate counseling messages.

### APPLYING THE STAGES OF CHANGE MODEL TO ASSESS READINESS

<table>
<thead>
<tr>
<th>Stage</th>
<th>Characteristic</th>
<th>Patient verbal cue</th>
<th>Appropriate intervention</th>
<th>Sample dialogue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precontemplation</td>
<td>Unaware of problem, no interest in change</td>
<td>“I'm not really interested in weight loss. It's not a problem.”</td>
<td>Provide information about health risks and benefits of weight loss</td>
<td>“Would you like to read some information about the health aspects of obesity?”</td>
</tr>
<tr>
<td>Contemplation</td>
<td>Aware of problem, beginning to think of changing</td>
<td>“I know I need to lose weight, but with all that's going on in my life right now, I'm not sure I can.”</td>
<td>Help resolve ambivalence; discuss barriers</td>
<td>“Let’s look at the benefits of weight loss, as well as what you may need to change.”</td>
</tr>
<tr>
<td>Preparation</td>
<td>Realizes benefits of making changes and thinking about how to change</td>
<td>“I have to lose weight, and I’m planning to do that.”</td>
<td>Teach behavior modification; provide education</td>
<td>“Let’s take a closer look at how you can reduce some of the calories you eat and how to increase your activity during the day.”</td>
</tr>
<tr>
<td>Action</td>
<td>Actively taking steps toward change</td>
<td>“I'm doing my best. This is harder than I thought.”</td>
<td>Provide support and guidance, with a focus on the long term</td>
<td>“It's terrific that you're working so hard. What problems have you had so far? How have you solved them?”</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Initial treatment goals reached</td>
<td>“I've learned a lot through this process.”</td>
<td>Relapse control</td>
<td>“What situations continue to tempt you to overeat? What can be helpful for the next time you face such a situation?”</td>
</tr>
</tbody>
</table>

The primary care setting, however, presents a challenging venue for such an approach for several reasons:

- Visits are relatively brief – not enough time for traditional counseling
- Multiple issues must often be addressed.
- A diverse group of practitioners are involved.
- They have variable, if any, training in behavioral counseling.

With these limitations in mind, Katz developed a more efficient counseling model specifically for the primary care setting. It focuses on the balance between an individual’s motivation to change and the resistance to change. [216]

- Two to three questions are used to assess stage, then brief, targeted messages are delivered for each stage.
- This system is used in the health professional’s consult.

The **Five A's construct** - assess, advise, agree, assist, and arrange - adapted from tobacco cessation interventions in clinical care provides a workable framework to provide brief behavioral counseling intervention. [217]

**Handling relapses in those who have difficulty following weight loss plans can be very challenging**

- It is important to consider psychological factors, or referral to a psychologist, RD or other professional who specializes in weight loss psychology. [222]
- Some addictive personality types use food as a form of pleasure and reward – leads to an increase in emotional overeating

For relapers, it is most important to focus on two things: 1) increasing commitment to exercise, and 2) controlling binge eating – strategies to handle the triggers for these episodes

- Weight cyclers have been shown to be less likely than noncyclers to use frequent exercise as a weight control strategy, and more likely to binge eat. [223]
- Individuals who struggle weight control may be particularly susceptible to thoughts, emotions, and situational cues that can prompt overeating and undermine their attempts to restrain eating.
- Repeat dieting, high day-to-day fluctuations in intakes, and attempts to enforce highly rigid control over eating all can be counterproductive to weight control efforts and may disrupt more appropriate food choice behaviors. [224]
- Programs that offer a degree of structuring of the personal food environment, while retaining flexibility in choices, therefore, may be particularly beneficial in weight management.

11. OPTIMIZING COMMUNICATION AND COUNSELING

Patients value three elements in the office encounter: communication, partnership, and health promotion. [230]

- These, along with sensitivity to anti-fat bias, form four general principles of obesity counseling.

**COMMUNICATE EMPATHICALLY**

- Patients must feel understood.
- Empathy enables you to establish rapport with patients and shows that you understand their situations, perspectives, and feelings.
- Empathy is especially important with obese patients, given the social stigma and discrimination commonly experienced by this population. [231]
Components of Empathetic Communication: [231]

- **Active listening** -- using nonverbal skills to convey interest in what your patients are telling you.
- **Framing to show that you understand what your patients are telling you** -- “Let me see if I have this right: …”
- **Reflecting your patients’ emotional tone** -- shows that you understand how they feel (eg, “It sounds to me like you’re unhappy with your weight,” or “Yes, I can imagine that it’s very frustrating for you.”)
- **Requesting correction from your patients to acknowledge that they are important partners** -- eg, “Is there anything I left out today?” or “Does that sound right to you?”

ESTABLISH A PATIENT–PHYSICIAN PARTNERSHIP

- The most important aspect of any therapeutic encounter.
- Physicians and patients work together as partners, in assessing the problem and in developing treatment plans and solutions.
- In contrast to the more traditional directive approach, in which the physician simply tells patients what to do (e.g. lose weight, exercise more, eat less), encourage your patients to discuss lifestyle patterns, motivating factors, and barriers to change and to contribute to development of treatment plans.

Deliver health counseling effectively

- Messages about obesity prevention and management are more likely to be accepted if your patients believe that excess weight is unhealthy and are less likely to be accepted if your patients believe that “big is healthy.”
- It’s also important for patients to understand clearly what you are telling them.
- A useful technique to check this is the “teach-back method” -- ask patients to explain what they have just been told. For example, say, “Now I want you to explain to me what I just told you, so I can be certain that I explained it to you correctly.”
- This approach should replace the more common practice of asking, “Do you understand?” Experience shows that patients often answer yes, even when they do not understand at all. [232]

STRATEGIES TO REDUCE BIAS AGAINST OVERWEIGHT AND OBESE PATIENTS [233]

Although most people do not like to admit it, it is exceedingly difficult to be immune to our contemporary culture’s bias against overweight and obese people. Practices must take several steps to guard against bias.

1. **Recognize that obesity is a chronic medical condition**, not a product of laziness or low willpower.
   - Do not blame obese patients for their health problems, even if you believe they are related to obesity.

2. **Improve your knowledge of nutrition, multi-disciplinary treatments, and community resources** in order to offer solid recommendations and support to your patients. By taking obesity treatment seriously, you reinforce your message that obesity is a medical condition, not a shameful characteristic.

3. **Create a friendly office culture and atmosphere**. Improve your patients’ sense of acceptance and comfort by providing armless chairs, larger examination gowns, and a private place for weighing.

4. **Treat overweight and obese patients with as much respect as you would any other patients**.

COMMUNICATING WITH OBESE PATIENTS [233]

Because of the social stigma and shame surrounding overweight and obesity, some patients may be reluctant to discuss their weight with physicians, and some physicians may avoid the topic altogether.

1. **Acknowledge your patients’ chief complaint, independent of weight**.
   - Listen to and explore your patients’ chief complaints, including their impression of the underlying causes, without forcing the diagnosis of obesity on them.
2. Assume that obese patients know they are overweight
   - Better to focus on how your patients’ weight affects their health.
   - Instead of asking, “Do you know you weigh too much?”, it is more constructive to say, “I’m concerned about your weight because I think it’s causing health problems for you. Do you think your weight is causing problems for you?”

3. Base the discussion on your patients’ readiness
   - Patients who do not believe that their weight is problematic are unlikely to be interested in messages about losing weight through dietary management and physical activity.
   - Rather, focus on educating these patients about health risks associated with overweight and obesity.

4. Offer unconditional acceptance
   - Overweight and obese individuals often fear their physician’s disapproval.
   - Acknowledge that weight management is a challenge (eg, “It’s hard to avoid snacking when you’re stressed out.”)

5. Praise any efforts they have made, regardless of whether successful or not

6. Do not blame your patients in cases of noncompliance.
   - This can lead to more frustration and damage the patient–physician partnership.
   - Work together with your patient to develop strategies for adherence or develop new recommendations.

7. Continue to provide encouragement
   - Your encouragement and support can go a long way toward helping your patients achieve success.

12. OFFICE SYSTEMS TO FACILITATE WEIGHT MANAGEMENT PROGRAM

Establish an office culture that breaks down barriers and biases against obese individuals.
   - Adult patients have identified “fatness,” “excess fat,” and “obesity” as derogatory terms; prefer simply “overweight” or “excess weight.” [234]

Results suggest that physician counseling protocols and other office prompts should be developed and promoted. Strategies targeting both physician and the health care system may improve the consistency of physician preventive counseling practices. [235]

HOW TO OPTIMIZE OFFICE SYSTEMS

Office-based systems can be optimized for patient care and comfort by using specific equipment, office tools, procedures, protocols, and joint efforts of office staff. [233]
   - Suggestions from the AMA Roadmap for Clinical Practice [233] include:

Waiting Room Improvements
Enhance accessibility to the office and waiting room, bathrooms, examinations rooms.

Recommendations for waiting room include:
   - sturdy armless chairs and firm high sofas
   - artwork and magazines that do not promote thin bodies as the ideal
   - reading materials that encourage healthy living, nutrition, physical activity, and healthy aging
   - posters that display inspirational messages or physical activity tips

Weigh Patients Privately and Sensitively
Body weight measurements can be an emotional experience. Just being asked by the office nurse, physician assistant, or physician to “Please step on the scale so I can get your weight” can be a stressful
experience. Being sensitive to this issue sets the tone for establishing a caring and empathic patient-physician relationship.

- Weigh patients in a private setting, away from other patients and staff. Place scale in the examination room or in a separate area of the office.
- Ask patients’ permission to be weighed, rather than automatically requiring it.
- Record patient weight silently and free of comment.
- Conduct discussions and counseling in the examination room.

**Equipment Needs**

Have at least one scale with a capacity of 350 pounds, a wide base and a nearby handle bar for support. For height, a wall-mounted sliding stadiometer takes the most accurate measurement.

Examination rooms should include:

- large-size gowns
- a sturdy step stool
- a cloth or metal tape measure for waist circumference
- large adult blood pressure cuffs

**Involve Office Staff in a Team Approach**

An integrative team approach can enhance patient care. The optimal structure varies among practices. The following are appropriate activities:

- Receptionists provide useful information about the practice, including general philosophy, staffing, fee schedules, and written materials.
- Registered nurses obtain vital measurements, including height, weight (for body mass index), and waist circumference; and provide instruction on and review of food and activity journals and other educational materials.
- Physician assistants/nurse practitioners monitor the progress of treatment and assume many other responsibilities of care.
- Physicians coordinate and manage integrating their patients' medical care.
- Frequent staff meetings to discuss and revise office practices, and to keep up to date with latest guidelines and recommendations.

**Patient Medical Questionnaire**

Can be mailed to patients and completed prior to the initial visit, completed in the waiting room, or completed with a staff member in the examination room.

- Most time efficient is to have it completed before coming in for the visit
- Should include:
  - past participation in obesity treatment programs,
  - a body weight history,
  - current diet and physical activity levels,
  - social support, and
  - goals and expectations.
- Some patients may have to work with a physician or nurse to answer the questions.
- An example is available from the Veterans Health Administration clinical weight management program -- the MOVE!23 survey: [http://www.move.va.gov/Move23.asp](http://www.move.va.gov/Move23.asp)

**Other Handouts**

Have questionnaires and handouts to address weight loss, diet, nutrition, physical activity, and medication management.

- The VA weight management program - MOVE! has tools, resources, and materials, including an initial patient questionnaire, over 100 patient handouts, modules for conducting group sessions, quick reference guides available free of charge for anyone to use: [http://www.move.va.gov](http://www.move.va.gov)
- For patient handouts, the VA program has many that are available at: [http://www.move.va.gov/Handouts.asp](http://www.move.va.gov/Handouts.asp)
Putting it all together
Put Prevention Into Practice (PPIP), a national campaign coordinated by the Agency for Health Care Research and Quality (AHRQ) to improve the delivery of clinical preventive services, provides a useful framework for analyzing the office systems designed to deliver patient care. [236]

For: Audit of current office practice systems (see page 33)

13. FINAL THOUGHTS

Losing fat is more about health than just looking better ... but looking better is a powerful motivator for some people.

- Tell patients they will be healthier, but they will also look and feel better too - makes for a better quality of life.

A weight loss of 5-10% done the right way (fat, rather than water or muscle) is associated with:

- A significant reduction in insulin level, fasting blood sugar, total cholesterol, and LDL cholesterol (as fat weight is reduced, levels decline), and
- Reduces risk of developing the metabolic syndrome and Type 2 diabetes. [1,237-243]

A loss of 10% or greater is associated with significant improvements in blood pressure and triglycerides, and reductions in markers of vascular inflammation and insulin resistance.

- Also reduces sleep apnea, decreases risk of osteoarthritis in hips, knees and back, reduces depression, and increases self-esteem. [1,237-243]

Nearly all members of the National Weight Control Registry (a registry of successful long-term weight losers) report improvements in:

- Quality of life
- Energy level
- Mobility
- General mood
- Self confidence
- Physical health
- Interactions with others
- Job performance [201]

The 1998 NIH Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults recommended treating overweight and obesity based "not only on evidence that relates obesity to increased mortality but also on RCT evidence that weight loss reduces risk factors for disease. Weight loss not only helps control diseases worsened by obesity, but it also helps decrease the likelihood of developing these diseases." [173]

14. RESOURCES

PRIMARY CLINICAL GUIDELINE:
In 1998, the National Heart, Lung, and Blood Institute (NHLBI), in cooperation with the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDKD), released the Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: Evidence Report to provide guidance to primary care physicians and an evidence base for effective treatment.2

- The Guidelines were endorsed by the coordinating committees of the National Cholesterol Education Project, the National High Blood Pressure Education Program, the North American Association for the Study of Obesity, and the NIDDKD National Task Force on the Prevention and Treatment of Obesity.
- This is still the standard of care.

http://www.nhlbi.nih.gov/guidelines/obesity/ob_home.htm
http://www.obesity.org/information/practicalguide.asp

RECOMMENDATIONS:
US Preventive Services Task Force. Screening and Counseling for Obesity  
http://www.ahrq.gov/clinic/uspstf/uspsobes.htm

The Surgeon General’s Call to Action to Prevent and Decrease Overweight and Obesity  
www.surgeongeneral.gov/topics/obesity

OFFICE SYSTEMS AND PRACTICE ORGANIZATION:
Roadmap for Clinical Practice series: Assessment and Management of Adult Obesity:  
- This is a key resource for enhancing any aspect of obesity management. It consists of 10 booklets that offer practical recommendations for the primary care setting.  
  Booklet 1 - Introduction and clinical considerations  
  Booklet 2 - Evaluating your patients for overweight or obesity  
  Booklet 3 - Assessing readiness and making treatment decisions  
  Booklet 4 - Dietary management  
  Booklet 5 - Physical activity management  
  Booklet 6 - Pharmacological management  
  Booklet 7 - Surgical management  
  Booklet 8 - Communication and counseling strategies  
  Booklet 9 - Setting up the office environment  
  Booklet 10 - Resources for physicians and patients  

http://www.ama-assn.org/ama/pub/category/10931.html

OTHER GUIDELINES:

American College of Preventive Medicine (ACPM): Weight management counseling of overweight adults (2001)  
www.acpm.org/polstmt_weight.pdf

www.nhlbi.nih.gov/guidelines/cholesterol

Department of Veterans Affairs and Department of Defense Clinical Practice Guidelines for the Management of Overweight and Obesity in Adults.  

Physical Activity Guidelines for Americans (released on October 7)  

BMI CALCULATOR:
The National Institutes of Health provides a BMI calculator at:  
www.nhlbisureport.com/bmi  
http://www.nhlbisureport.com/bmi/bmicalc.htm

CDC BMI calculator at: 

**PRESCRIPTIONS:**
**MOVE! Weight Management Program**
The Veterans Health Administration clinical weight management program.
- Tools, resources, and materials, including an initial patient questionnaire, over 100 patient handouts, modules for conducting group sessions, quick reference guides and more are available free of charge for patients and providers at the program’s internet site: 
  www.move.va.gov

**Nutrition**
http://familydoctor.org/online/famdocen/home/healthy/food/general-nutrition/298.html

**AAFP. Aim to Change: Encouraging Fitness for All**
Prevention and Management of At-Risk, Overweight and Obese Patients

**Aim for a Healthy Weight Provider Kit – 2006**
Includes:
- The Practical Guide: Identification, Evaluation, and Treatment of Overweight and Obesity in Adults
- Aim for a Healthy Weight - 3 Steps to Initiate Discussion About Weight Management With Your Patients
- Tips to Weight Loss Success Patient Tablet
- Aim for a Healthy Weight Patient Booklet
- Aim for a Healthy Weight - Facts About Healthy Weight
- Aim for a Healthy Weight - ACT Laminated Card
- Tape Measure for Obesity Kit

Order the toolkit at http://email.nhlbihin.net/product2.asp?sku=KT-021_06 or call 1-800-944-0000 and ask for the AIM to Change toolkit (Item #1938).

**AIM to Change Food and Activity Journal**

**CDC Division of Nutrition, Physical Activity and Obesity**
http://www.cdc.gov/nccdphp/dnpa/

**FOR PATIENTS:**
**Healthy Weight – It’s Not a Diet, It’s a Lifestyle**
- For patients -- A comprehensive program of information and resources
  http://www.cdc.gov/nccdphp/dnpa/healthyweight/index.htm

**Eat More – Weigh Less**
- A brochure about taking advantage of the energy density of foods
OTHER:
National Weight Control Registry
www.lifespan.org/services/bmed/wt_loss/nwcr

Resource Inventory from the AMA: (comprehensive list)

America On the Move™
The America on the Move program is designed to get Americans to wear inexpensive step counters and
walk an additional 2,000 steps (about 1 mile) a day or cut out 100 calories. America on the Move™ is an
initiative of the Partnership to Promote Healthy Eating and Active Living.
http://americaonthemove.org

NATIONAL PROGRAMS AND INITIATIVES
Partnership to Promote Healthy Eating and Active Living - America on the Move™ (AOTM)
• Provides people with simple tools for achieving energy balance. The AOTM program is available to all
Americans through an interactive Web site, which offers AOTM step counters, “Quick Start” guides,
and personalized tools for participants to track their steps and progress.
www.AmericaOnTheMove.org

National Cancer Institute (NCI) - 5-A-Day for Better Health Program
• The national 5-A-Day for Better Health Program is designed to encourage Americans to eat five or
more servings of fruits and vegetables every day for better health. The program provides consumers
with practical and easy ways to incorporate more fruits and vegetables into their daily eating patterns.
http://www.cdc.gov/nccdphp/dnpa/5ADay/

National Heart, Lung, and Blood Institute (NHLBI) - Obesity Education Initiative
• Information for the general public on topics concerning obesity along with useful applications such as
the body mass index (BMI) calculator, a portion distortion interactive quiz, and an interactive menu
planner.
www.nhlbi.nih.gov/about/oei

National Heart, Lung, and Blood Institute (NHLBI) - Aim for a Healthy Weight
• Guidelines to provide the public with a new approach for the measurement of overweight and obesity,
as well as a set of steps for safe and effective weight loss. It also offers numerous publications on
topics such as obesity and physical activity, cholesterol, and high blood pressure.

US Department of Agriculture (USDA) - Center for Nutrition Policy and Promotion (CNPP)
• The Center for Nutrition Policy and Promotion is the focal point within the USDA where scientific
research is linked with the nutritional needs of the general public. It translates nutrition research into
brochures and information for the general consumer. The food pyramid, dietary guidelines, and
recipes are among the resources available on this site.
www.usda.gov/cnpp

American Heart Association - Delicious Decisions
• Information about basic nutrition, a tailored cookbook for people with heart disease, helpful tips for
dining outside the home, supermarket shopping, and tips to maintaining a healthy diet.
www.deliciousdecisions.org

Dietary Guidelines for Americans
US Department of Health and Human Services (DHHS)
These recommended dietary guidelines give authoritative advice on how good dietary habits can promote
health and reduce the risk for major chronic diseases.
www.health.gov/dietaryguidelines
Division of Nutrition and Physical Activity

Centers for Disease Control and Prevention (CDC) National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP)

The CDC developed this site to address the role of nutrition and physical activity in living a healthy lifestyle and reducing chronic illnesses. It serves as a resource for guidelines, fact sheets, and other types of publications on topics related to nutrition and physical activity. This site also provides an interactive body mass index (BMI) calculator and information about obesity prevention.

www.cdc.gov/nccdphp/dnpa

Just Move.org

This online fitness center provides information regarding physical fitness, as well as an exercise diary, links to other health and fitness resources, and recommendations for getting the greatest benefit from physical activity in daily life.

www.justmove.org

Mayo Clinic

The Mayo Clinic Web site contains up-to-date information and interactive tools that include health management programs, health decision guides, a personal health scorecard, and various health centers that address food and nutrition, fitness and sports medicine, women’s health, and men’s health.

www.mayoclinic.com

Nutrition.gov

Provides access to all online federal government information on nutrition, healthy eating, physical activity, and food safety.

http://www.nutrition.gov/nal_display/index.php?info_center=11&tax_level=1

Weight Control Information Network

National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)

The network disseminates science-based information on obesity, weight control, and nutrition to the general consumer. It also offers various types of fact sheets, and publications on weight loss.

www.niddk.nih.gov/health/nutrit/win.htm

Overweight and Obesity

Office of the Surgeon General

This site contains the report The Surgeon General’s Call to Action to Prevent and Decrease Overweight and Obesity, as well as information on topics concerning obesity including health consequences and weight advice. It also lists several resources for additional information on nutrition, physical activity, and weight loss.

www.surgeongeneral.gov/topics/obesity

Partnership for Healthy Weight Management

Web site contains information on weight loss, BMI, and brochures that can be downloaded or ordered for free. The following brochures are available:

• Weight Loss: Finding a Weight Loss Program That Works for You
• Setting Goals for Weight Loss
• Voluntary Guidelines for Providers of Weight Loss Products or Services.

www.consumer.gov/weightloss

President’s Council of Physical Fitness and Sports

• Web site provides useful information on the importance of physical activity as well as publications or guidelines on fitness, nutrition, health, and sports.

www.fitness.gov
American Dietetic Association
- Resources for information on food and nutrition as well as a referral service that links consumers with registered dietetic professionals are available on its Web site.
  www.eatright.org

The Obesity Society
- Web site communicates information about obesity, including prevention, treatment guidelines, research, and advocacy updates as well as a list of prevention and wellness programs.
  www.obesity.org

American Society for Bariatric Surgery
- Includes bariatric surgeons and allied health professionals. The Web site provides useful information about bariatric surgery, as well as a rationale for surgical treatment of morbid obesity.
  www.asbs.org

ORGANIZATIONS
American Academy of Family Physicians
- Web site includes articles, reference information, and guidelines that pertain to the treatment of obesity. The organization recently released a guide for family physicians to help their overweight patients and launched a 10-year fitness initiative called Americans in Motion.
  www.aafp.org

American College of Sports Medicine
- A guideline for aerobic activity, a tool for calculating heart rates, and other information regarding physical activity are available on its Web site.
  www.acsm.org

American Council on Exercise
- Information on topics dealing with physical activity and exercise including cardiovascular exercise, flexibility, strength and resistance training, and supplements. It also provides tools for locating health clubs as well as ACE certified personal trainers and other types of fitness experts.
  www.acefitness.org
AUDIT FOR DELIVERY OF OFFICE-BASED OBESITY CARE

1. Do you routinely assess and evaluate patients for overweight and obesity?
   □ Measure height and weight
   □ Calculate body mass index (BMI)
   □ Measure waist circumference
   □ Take a focused obesity history
   □ Assess readiness and barriers for weight loss.

2. What kinds of services or programs do you routinely provide to your overweight patients?
   □ Dietary counseling
   □ Physical activity counseling
   □ Group support
   □ Referral to a registered dietitian
   □ Email correspondence
   □ Use of anti-obesity medications or formula diets.

3. Are the services or programs recorded in patient charts?
   □ Recommended dietary and physical activity behavioral changes
   □ Percent weight loss goal
   □ Correspondence to a registered dietitian, health psychologist, or exercise specialist
   □ Use and risks of anti-obesity medication.

4. What policies and procedures do you have in place for providing obesity care?
   □ All patients have height, weight, waist circumference, and BMI measured and recorded in their chart
   □ Patient readiness is assessed before initiating treatment
   □ Weight loss goals are established and tracked in progress notes
   □ Patients with a BMI of $\geq 30$ are assessed for anti-obesity medications; those with a BMI of $\geq 40$ are assessed for bariatric surgery.

5. What forms, patient handouts, and educational materials are you using?
   □ Focused obesity history form
   □ Diet and physical activity history forms
   □ Handouts:
     □ Healthy snacks
     □ Strategies to increase physical activity during daily living
     □ Food and activity diaries
     □ Educational sheets on anti-obesity medications

6. How does your office environment support or inhibit delivery of obesity care?
   □ Sturdy armless chairs
   □ Large arm and thigh blood pressure cuffs
   □ Large gowns
   □ Measuring body weight in a private setting
   □ A sensitive and informed office staff.

7. What functions do staff currently serve in the provision of obesity care?
   □ Office nurse obtains weight, height, and BMI
   □ Physician’s assistant reviews food and activity diaries and medication side effects
   □ Receptionist schedules referral appointments with dietitian and clinical psychologist.

8. What can you do differently?

Adapted from A Step by Step Guide to Delivering Clinical Preventive Services: a systems approach. Agency for Healthcare Research and Quality, Rockville, Md.
XV. REFERENCES


79. Evans E. Why should obesity be managed? The obese individual's perspective. Int J Obes Relat Metab Disord. 1999 May;23 Suppl 4:S3-5; discussion S6
104. Schutz Y. Dietary fat, lipogenesis and energy balance. Physiol Behav. 2004 Dec 30;83(4):557-64
108. Tsai AC, Sandretto A, Chung YC. Dieting is more effective in reducing weight but exercise is more effective in reducing fat during the early phase of a weight-reducing program in healthy humans. J Nutr Biochem. 2003 Sep;14(9):541-9


152. CDC. Low-Energy-Dense Foods and Weight Management: Cutting Calories While Controlling Hunger Low-Energy-Dense Foods and Weight Management: Cutting Calories While Controlling Hunger http://www.cdc.gov/nccdphp/dnpa/nutrition/pdf/ldp_energy_density.pdf


188. Wansink B. Environmental factors that increase the food intake and consumption volume of unknowing consumers. Annu Rev Nutr. 2004;24:455-79
193. Tsai AC, Sandretto A, Chung YC. Dieting is more effective in reducing weight but exercise is more effective in reducing fat during the early phase of a weight-reducing program in healthy humans. J Nutr Biochem. 2003 Sep;14(9):541-9