

Dear Colleague:

Obesity is a disease afflicting millions of Americans and causing a great deal of pain and suffering. In our society, stereotyping of overweight and obese individuals is quite common. Despite evidence to the contrary, many people view obesity as a lack of willpower on the part of the individual. As a result, obese persons are frequently the object of prejudice and discrimination. They may be viewed as lazy and unlikeable by their leaner counterparts--and very often by themselves as well.

As a physician, you are in a unique position to help reduce this distress. Some guiding principles you can use to foster a positive and supportive therapeutic relationship with your overweight and obese patients include:

- Examine your own feelings about obesity and the obese. You may unknowingly harbor some feelings that may color your interactions with your patients.
- View each patient as a unique, competent individual worthy of your time and respect. Not all overweight individuals are the same. How their obesity has affected their lives and the factors that have contributed to their weight gain will differ from patient to patient.
- Encourage your patients to discuss their feelings about their weight, weight reduction or weight maintenance efforts. Listen to them when they share their concerns and empathize with their frustrations.
- Encourage your patient to work in partnership with you to make decisions about treatment strategy and options. This will help the patient be more involved in the treatment process.
- Make every effort to recognize and comment on positive changes in health status, weight loss, and eating and exercise efforts.

Striving to forge a supportive therapeutic relationship with each of your overweight patients throughout the treatment process will help them feel they have been treated with dignity and respect. This is absolutely essential to the successful treatment of obesity and maintenance of weight loss.

Sincerely,

C. Everett Koop, M.D.
Chairman and Founder
Shape Up America!

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This guidance is designed primarily as an educational resource for physicians, to help them identify and treat adult obesity. It is not intended to guide treatment of children, adolescents, or of the elderly who are frail and sedentary.

Adherence to this guidance is completely voluntary and does not necessarily assure a successful outcome. This document is an overview and is not intended to be used as a definitive guide for treating individual patients. In determining the propriety of any specific treatment, procedure or test, each physician should apply professional judgment to the specific circumstances.

Physicians are encouraged to document the reasons for the choice of a particular treatment, procedure or test, whether or not they conform with this guidance. They also are advised to consider other medical and scientific information that becomes available after the adoption of this guidance.

This guidance document is not for use in connection with matters involving reimbursement, credentialing or utilization review. Such uses involve considerations that are beyond the scope of this document.

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INTRODUCTION

WHY THIS GUIDANCE INITIATIVE?

As a physician, you are probably aware that we are experiencing an epidemic of obesity in both adults and children in the U.S. Approximately 35 percent of women and 31 percent of men age 20 and older are overweight or obese, as are about one quarter of children and adolescents ages 6 - 17. And these rates, which are already among the highest in the world, are increasing rather than decreasing. From a public health perspective, this is alarming.

- Obesity is directly linked to many chronic diseases--such as heart disease, Type 2 diabetes, hypertension, stroke, certain cancers and osteoarthritis--that are disabling and lead to premature illness and death. As the obesity rate continues to climb, these related comorbid disease rates will continue to rise as well.
- Obesity extracts a high toll on human suffering. In addition to increased incidence of associated disease, the psychosocial effects of obesity can range from lowered self-esteem to clinical depression. Obese individuals may suffer job discrimination and other forms of social stigmatization.
- The costs associated with obesity are extremely high. The Institute of Medicine has calculated the health care cost of obesity to be more than \$70 billion annually. This figure includes direct costs such as hospital care and physician services as well as lost productivity caused by death and disability from weight-related diseases.
- Historically, physician involvement in the treatment of obesity has been limited. The achievement of a successful outcome has been difficult. Limited studies reveal that people who complete nonsurgical weight loss programs and lose approximately ten percent of their body weight gain one-third of it back within one year and almost all of it back within five years.

Despite this history, scientific evidence strongly suggests that, in many cases, obese individuals who lose even relatively small amounts of weight find that an accompanying comorbid disease or condition is improved, its progression is slowed, or its symptoms disappear. The evidence further suggests that improvement in these comorbid conditions will persist if such modest weight loss is maintained.

The American Obesity Association and Shape Up America!, two nonprofit organizations whose missions include combating obesity through education and treatment, have undertaken this joint public health initiative in an attempt to reverse this upward trend in obesity and obesity-related disease rates. It is our position that:

- Obesity is a chronic disease.
- The underlying causes of obesity are not fully understood, though obesity appears to be a

complex, multifactorial disease involving genetics, physiology, metabolism, and appetite regulation by the brain, as well as environmental, psychosocial, and cultural factors. Obesity develops when energy intake consistently exceeds energy output.

- Obesity can seldom, if ever, be cured, and it should be managed much the same as any other chronic illness--through treatment that provides long-term support, education, monitoring, and reinforcement.
- Physicians are in an excellent position to identify and intervene with patients who are clearly at risk and who could benefit from either prevention of weight gain or a modest weight reduction.

The result of this joint initiative is Guidance for Treatment of Adult Obesity. We hope this document will provide the tools you need to identify and intervene as appropriate, and provide treatment guidance and support for those patients who are interested in and can benefit from such intervention. We also envision that it will provide guidance to insurance companies, companies which contract with insurers for health insurance, and local, state, and federal governmental organizations--thereby increasing the percentage of patients who can obtain responsible and affordable medical treatment of obesity.

Patricia Choban, M.D.

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RATIONALE

GUIDANCE FOR TREATMENT OF ADULT OBESITY

PURPOSE:

- To encourage physicians to intervene with their adult obese patients.
- To provide responsible, state-of-the-art guidance for such intervention.

GOALS:

- To minimize or reduce health risks in obese individuals through weight reduction.
- To prevent further weight gain.
- To initiate weight reduction when appropriate.
- To support the adoption of a healthy lifestyle and improve quality of life.
- To encourage appropriate follow-up of your patient, for the purpose of maintaining a healthy or reduced weight.

DEVELOPMENT PROCESS:

The obesity treatment model and corresponding guidance were constructed by the following team of experts in the field of obesity:

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The model and guidance are based on an extensive review of the current literature (1966 - 1996 MedLine) on obesity and obesity treatment. The strength of the evidence in the references has been coded. The code appears in parentheses after each citation in the reference section of the document. The codes follow.

Evidence has been obtained from:

- Ia. Meta-analysis of randomized controlled trials
- Ib. Meta-analysis of controlled trials
- Ic. Prospective, randomized, placebo-controlled (if appropriate), preferably blinded trials which included follow-up
- Id. Prospective, nonrandomized, controlled studies with follow-up, or large retrospective studies
- Ie. Prospective controlled studies (preferably blinded) with no follow up and/or high attrition rates (with analysis of dropouts)
 - Iia. Large prospective studies with a quasi-experimental design or descriptive in nature
 - Iib. Smaller, prospective studies with a quasi-experimental design, a case study or descriptive format
- III. Abstracts or studies of short duration (two months or less) with no follow-up. Both double-blind placebo controlled and non-placebo controlled studies included
- IVa. Comprehensive review
- IVb. Limited review
- V. Committee reports, consensus statements and opinions.

This guidance was sent to all members of the North American Association for the Study of Obesity (NAASO). It was also sent to representatives of the professional organizations listed below for their critical review:

- American Academy of Family Physicians
- American Association of Clinical Endocrinologists
- American College of Obstetrics and Gynecology
- American College of Physicians
- American Diabetes Association
- American Dietetic Association
- American Heart Association
- American Medical Association
- American Psychological Association
- American Society for Clinical Nutrition
- American Society for Bariatric Physicians
- American Society for Bariatric Surgeons
- American Society for Nutrition Sciences formerly American Institute of Nutrition
- American Society for Parenteral and Enteral Nutrition
- Society for the Study of Ingestive Behavior

Endorsement by these organizations was not sought, nor is it implied by listing them above.

On October 5 and 6, 1996, a consensus conference was held in Washington, D.C. for any reviewers who might choose to attend. Based on written feedback and discussion at the conference, the document was revised by the committee.

WHEN TO USE THIS GUIDANCE

Consider using *Guidance for Treatment of Adult Obesity* whenever your patient:

- Initiates a discussion about losing weight
 - Has a condition (such as hypertension) that worsens or improves with weight gain or loss
 - Seeks your help in weight maintenance from a previously obese state
- or
- You believe your patient's weight may pose a health risk.

HOW TO USE THIS GUIDANCE

- The Treatment Model provides you with a one-page overview of the entire treatment process from assessment through treatment and evaluation for both weight reduction and prevention of weight gain.
- A summary of the Treatment Model highlights the contents of this guidance document.
- Each section of the Treatment Model is then discussed in greater detail. The information is broad enough in scope to inform and guide you in selecting treatment options and resources so you can judge their suitability for your patient on an individual basis. It is not intended to provide treatment mandates. Only you, in partnership with your patient, are in a position to decide what treatment option is appropriate.
- The appendix contains a compendium of information that may be helpful to you and your patients and includes:
 - BMI charts
 - The Treatment Option Analysis Chart
 - A step-by-step guide for calculating the energy deficit
 - Anthropometric measurements and waist-to-hip ratio
 - Educational materials
 - A food and fitness diary
 - Referral numbers
 - Non-commercial weight loss/support organizations
 - Commercial weight loss programs
 - Clinical weight loss programs
 - Biographical sketches of the authors and other contributors to this guidance document.

ABSTRACT

THE TREATMENT MODEL

TO REDUCE HEALTH RISK AND DISEASE BURDEN
THROUGH WEIGHT REDUCTION AND PREVENTION OF WEIGHT GAIN

(See accompanying chart)

SUMMARY OF THE TREATMENT MODEL

The control of obesity is not an easy task. Realizing that, we have tried to make it as easy as we can for you by providing this summary of the Treatment Model and associated guidance. The goal of this document is to encourage you to intervene with your adult overweight and obese patients and to provide practical information and guidance for such intervention.

We have tried to structure the "dialogue" that takes place between you and your patient at the first visit and throughout subsequent treatment and follow-up. The Treatment Model has three fundamental components:

- I. Assessment of the Patient's Health Risk**
- II. Decision: Is the Patient Eligible for and Interested in Weight Reduction?**
- III. Prescription of Appropriate Treatment and Follow-up**

This document aims to reduce the health risk associated with an elevated BMI by prescribing either 1) weight reduction treatment and maintenance of weight loss or 2) treatment that prevents weight gain.

PART I: ASSESSMENT OF PATIENT'S HEALTH RISK

1. Determine Body Mass Index (BMI)

What is your patient's BMI?

- Measure height (in inches)
- Weigh patient (in pounds)
- Use BMI table

BMI, an indirect measure of body fat, indicates a patient's relative health risk. The BMI table we have provided should not be used to assess patients who have high muscle mass, are pregnant or lactating, are elderly, frail and sedentary, or are growing children.

2. Assess Comorbid Conditions

Does your patient have any of the following conditions?

- Hypertension
- Cardiovascular disease
- Dyslipidemia
- Type 2 diabetes
- Sleep apnea/obesity hypoventilation syndrome
- Osteoarthritis
- Infertility
- Other conditions, including:
 - Idiopathic intracranial hypertension
 - Lower extremity venous stasis disease

- Gastro-esophageal reflux
- Urinary stress incontinence.

These conditions are associated with obesity and usually worsen as the degree of obesity increases and improve as the obesity is successfully treated. Presence of one or more condition raises the health risk that is associated with BMI alone.

3. Identify Other Risk Factors

Does your patient have any of the following additional risk factors?

- Waist-to-hip ratio >1.0 in males or >0.8 in females
- Waist circumference ≥ 40 inches (102 cm) in males or ≥ 35 inches (88 cm) in females
- Factors requiring clinical judgment:
 - Progressive weight gain since adolescence
 - Individual history of obesity
 - Family history of obesity
 - Bulimia nervosa
 - Binge eating disorder
 - Depression, anxiety, and stress
 - Relevant medical or physical conditions, including:
 - hyperinsulemia
 - breast, colon, or endometrial cancer
 - menopause
 - overall disease burden
 - Quality of life issues
 - Physical inactivity.

Increased risk for obesity-related comorbidities is associated with an increased waist-to-hip ratio or waist circumference. The other clinical conditions and individual considerations listed above may also impact and possibly increase risk. They require individual evaluation and clinical judgment.

4. Determine Patient's BMI-Related Health Risk

What is your patient's BMI-related health risk? How is that risk modified by the presence of comorbid conditions and/or other risk factors?

BMI Category	Health Risk Based on BMI	Risk Adjusted for Presence of Comorbid Conditions and/or Other Risk Factors
18 - <25	Minimal	Low
25 - <27	Low	Moderate
27 - <30	Moderate	High
30 - <35	High	Very high
35 - <40	Very High	Extremely high
≥ 40	Extremely High	Extremely high

This health risk assessment helps you:

- Identify patients who may benefit from intervention
- Determine if weight reduction treatment is warranted
- Identify the treatment option(s) for which the patient is eligible.(See Part III.)

5. Determine Weight Reduction Exclusions

Does your patient have any conditions that warrant a temporary or permanent exclusion from weight reduction treatment?

Temporary Exclusions:

- Pregnancy
- Lactation
- Unstable mental illness
- Unstable medical conditions

Possible Exclusions (require clinical judgment):

- Cholelithiasis
- Osteoporosis

Permanent Exclusions:

- Anorexia nervosa
- Terminal illness

Weight reduction treatment is not recommended for pregnant women or for patients with unstable mental or medical conditions. Weight reduction can be attempted in lactating women without compromising milk production, provided milk production is well established and the intervention is not aggressive. Since osteoporosis and cholelithiasis can be aggravated by weight loss, the risks and benefits of weight reduction need to be weighed on a case-by-case basis for these patients. Patients with anorexia nervosa or a terminal illness should be permanently excluded.

6. Assess Patient Readiness

Is your patient READY to lose weight?

Lack of patient interest or readiness is an indication that weight reduction treatment is not appropriate--even if such treatment is warranted based on the patient's health risk. For these patients, prevention of weight gain should be the treatment goal. If the patient denies treatment, it is important to ensure an informed refusal.

PART II:

Decision: Is Patient Eligible for and Interested in Weight Reduction Treatment?

- If yes, proceed to *weight reduction* section of the model (IIIA)
- If no, proceed to *prevent weight gain* section of the model (IIIB).

PART III: Prescription of Appropriate Treatment Strategy and Follow up

A. Weight Reduction

If weight reduction treatment is appropriate, the process is as follows:

1. Prescribe: Weight Reduction through Energy Deficit

What is fundamental to weight reduction treatment?

- Select an appropriate target BMI.
- Create an energy deficit.
- Establish permanent changes in lifestyle.

For most patients--especially those with a BMI ≥ 30 --a target BMI that is 2 BMI units below their current one is realistic and practical.

An energy deficit can only be achieved by consistently expending more energy than consumed in food. Treatment options which support such a strategy include attention to diet, increased physical activity, pharmacological intervention, and surgery. Each of these options is described in detail in the guidance document. *Lifestyle change strategies should be routinely used in combination with any other treatment option.*

2. Select Weight Reduction Treatment Option

Based on health risk, what treatment options are available for this patient?

<u>Health Risk</u>	<u>Treatment Options(s) Available</u>
Minimal and Low	Healthful eating and/or moderate deficit diet Increased physical activity Lifestyle change strategies
Moderate	All the above plus low calorie diet
High and Very High	All the above plus pharmacotherapy and very low calorie diet
Extremely High	All the above plus surgical intervention

The treatment options available to each patient are based on his/her health risk assessment. (See Part I, Step 4.)

Any comprehensive treatment plan should include healthful eating and/or a moderate deficit diet combined with increased physical activity and lifestyle change strategies. Additional treatment options can be combined with this foundation, and the Treatment Option Analysis Chart in the appendix can help you and your patient study the merits, risks, and costs of each option.

3. Identify Treatment Provider and Location

What weight reduction treatment programs or services meet your patient's treatment needs?

<u>Treatment Option:</u>	<u>Who May Provide:</u>
Moderate deficit diet, Physical activity, + Lifestyle change	Self-help Non-clinical programs Health care professionals
Low-calorie diet (LCD), Physical activity, + change	As above (Professional monitoring may be needed Lifestyle for LCD)
Very low calorie diet, Physical activity, + Lifestyle change	As above + physician Clinical program + physician
Above + pharmacotherapy	As above
Surgery, individually prescribed diet, physical activity, + lifestyle change	Surgical clinical program

Consider with your patient which treatment programs and services available within your community would be appropriate for the patient's treatment plan AND best meets his/her individual weight reduction needs. Phone numbers and descriptions of various programs and services can be found in the appendix.

4. Monitor Progress

Is your patient losing weight? What are the next steps?

Satisfactory Progress? (Patient is losing weight.)

- Encourage and recognize success.
- Begin prevention of weight gain strategy.

Unsatisfactory Progress? (Patient is not losing weight or is gaining weight.)

- Reassess patient readiness. Then decide whether to:
 - Begin prevention of weight gain strategy?
 - Re-evaluate weight reduction treatment option?
 - Re-evaluate service provider?

B. Prevention of Weight Gain

If BMI-related health risk does not warrant weight reduction treatment, or it does but the patient is not ready for or interested in treatment, a strategy to prevent weight gain is appropriate (discussed below). This section is also appropriate for individuals who have successfully lost weight and are ready to maintain their weight loss.

1. Prescribe: Prevent Weight Gain Through Energy Balance

- In partnership with the patient, select a target BMI that the patient is willing to maintain.
- Create an energy balance between energy consumed in food and daily physical activity.
- Establish permanent lifestyle change strategies.

2. Re-evaluate Weight Reduction Need and/or Progress

- If the patient is temporarily excluded until a condition stabilizes or resolves, re-evaluate in three to six months.
- If patient is not ready or interested in weight reduction treatment, re-evaluate in six to 12 months or if the patient initiates. Obesity-related health risk should be recalculated at interval visits or in six to 12 months if there are no interval visits related to other health concerns.
- If the patient is at goal, re-evaluate periodically as you would for any other chronic medical condition. Continue to recognize and support any period of weight maintenance, as it is far more difficult to sustain weight loss than it is to lose weight.

THE TREATMENT MODEL -- PART I

DETERMINE BMI

What is your patient's BMI?

- Measure height (in inches)
- Weigh patient (in pounds)
- Use BMI table

What is BMI?

BMI is a relationship between weight and height that is used to assess your patient's health risk. It is a mathematical formula that correlates with body fat in adults and is expressed as weight in kilograms divided by height in meters squared ($BMI = kg/m^2$).

When is use of BMI appropriate?

BMI tables provided in the appendix are appropriate for use in adults between 19 - 70 years of age. These numbers are somewhat arbitrary, although BMI can be useful once growth has stopped in younger individuals and throughout adulthood.

Exceptions to use of BMI

Do not use the BMI tables in this document as the basis for assessing treatment in patients who are competitive athletes and body builders, (i.e., in patients whose BMI is high due to relatively great muscle mass¹) and/or in women who are pregnant and/or lactating. They are not intended for use in growing children or in elderly patients who are both frail and sedentary.

Why use BMI?

Obesity is defined as an excess of body fat, but direct measurement of body fat is usually not practical. BMI indicates a patient's relative health risk. Most studies designed to evaluate health risk, including studies of both morbidity and premature mortality, rely on BMI values. For example, prospective studies have related BMI to the subsequent development of cardiovascular disease, cancer, and other morbidities, as well as premature death²⁻⁹.

How often to assess BMI?

BMI should be determined at each visit. (You only need to weigh the patient; repeated height measurements are unnecessary more than once a year.) If you do not see a patient on a routine basis, an assessment every six months to a year is appropriate.

In some patients who are not being treated for weight reduction, a weight gain which changes BMI classification may occur rather quickly. Routine determination of your patient's BMI will help you intervene at the earliest opportunity.

It is also important to note BMI decreases in patients undergoing treatment, since this information signals you to provide valuable support of your patient's efforts and encourages continued progress.

How to determine your patient's BMI

Start by measuring your patient's height (to the closest inch) and weight (to the closest pound). A protocol for measuring height and weight is provided in the appendix.

Do not use self-reported height and weight information, as it may be inaccurate¹⁰.

Next, determine your patient's BMI using the tables in the appendix. These tables, complete with metric conversions, apply to both male and female patients. All necessary calculations have already been done.

Note:

- BMI cannot be calculated for patients with scoliosis, kyphosis, or other ailments that preclude accurate height measurement. These patients' risks must be estimated using best clinical judgment.
- BMI can be calculated for patients whose height or weight falls outside those included on the table. (See table for conversion formula.)

ASSESS COMORBID CONDITIONS

Does your patient have any of the following conditions?

- Hypertension
- Cardiovascular disease
- Dyslipidemia
- Type 2 diabetes
- Sleep apnea/obesity hypoventilation syndrome
- Osteoarthritis
- Female infertility
- Other conditions, including:
 - Idiopathic intracranial hypertension
 - Lower extremity venous stasis disease
 - Gastroesophageal reflux
 - Urinary stress incontinence

What is a comorbid condition?

A comorbidity is any condition associated with obesity that 1) usually worsens as the degree of obesity increases and 2) often improves as the obesity is successfully treated.

Why identify comorbidities?

The presence of any comorbid condition(s) leads to an increased health risk for that patient and compounds the risk associated with BMI alone^{11,12}.

Benefits of weight loss

Comorbid conditions increase the risk of disability or premature mortality. An increased risk for all-cause mortality has been shown for BMI > 27.³ Obese individuals who lose even small amounts of weight (five to ten per cent of initial body weight) are likely to improve their health in the short run by reducing the severity of certain of the comorbidities associated with obesity¹³⁻²¹. Recent data demonstrate the effects of sustained weight reduction and the consequent amelioration of comorbidities on decreasing the risk of premature mortality in a group of surgically treated obese patients²².

Comorbid conditions described

- Hypertension

Epidemiological studies have demonstrated an association between body weight and hypertension²³⁻²⁶, usually defined as a systolic blood pressure of ≥ 140 mmHg, a diastolic blood pressure of ≥ 90 mmHg, or both. An increased risk for the incidence of hypertension has been shown for BMI ≥ 23 ²⁷. Experimental evidence is conclusive that hypertension improves in overweight persons who lose weight^{13, 14, 23, 28-34}.

- Cardiovascular disease

Obesity is associated with cardiovascular disease including coronary artery disease, peripheral vascular disease, and congestive heart failure^{5, 11, 26, 29, 35}.

Positive Risk Factors for Coronary Artery Disease [CAD]

(Adapted in part from J Am Med Assoc 269:3015-3023, 1993, by the American College of Sports Medicine. Used with permission.)

- | | | |
|----|---|---|
| 1. | Age | Men >45 years; women >55 years; premature menopause without estrogen replacement therapy |
| 2. | Family history | Myocardial infarction (MI) or sudden death before 55 years of age in father or other male first-degree relative, or before 65 years of age in mother or other female first-degree relative |
| 3. | Current cigarette smoking | |
| 4. | Hypertension | Blood pressure \geq 140/90 mmHg, confirmed by measurements on at least 2 separate occasions, or on antihypertensive medication |
| 5. | Hypercholesterolemia | Total serum cholesterol >200 mg/dL (5.2 mmol/L) (if lipoprotein profile is unavailable) or HDL <35 mg/dL (0.9 mmol/L) |
| 6. | Diabetes mellitus | Persons with type I diabetes who are >30 years of age, or have had type I diabetes for >15 years, and persons with Type 2 diabetes who are >35 years of age should be classified as patients with disease |
| 7. | Sedentary lifestyle/
physical inactivity | Persons comprising the least active 25% of the population, as defined by the combination of sedentary jobs involving sitting for a large part of the day and no regular or active recreational pursuits |

Negative Risk Factor for Coronary Artery Disease

- | | | |
|----|----------------|------------------------------------|
| 1. | High serum HDL | >60 mg/dL (1.6 mmol/L) cholesterol |
|----|----------------|------------------------------------|

Note: It is common to sum risk factors in making clinical judgments. If HDL is high, subtract one risk factor from the sum of positive risk factors, since high HDL decreases CAD risk.

An increased risk of mortality specifically associated with cardiovascular disease has been shown for BMI >22^{3,27}. Positive risk factors for coronary artery disease are listed below. Weight reduction leads to an improvement in various cardiovascular parameters^{13-15, 17, 36}.

- *Dyslipidemia*

Blood lipid levels are often abnormal in obese persons^{8, 14, 37, 38}. The protective high density lipoprotein (HDL) cholesterol is lower in obese persons³⁹⁻⁴¹. In one study, every ten percent increase in relative weight was associated with a 12 mg/dL increase in plasma cholesterol⁴². Triglycerides are generally higher in obese persons⁴³ and are associated with weight gain⁴⁴.

Abnormal lipid values that warrant weight reduction therapy⁴⁵ because they are associated with coronary artery disease (CAD) include:

Total cholesterol \geq 200 mg/dL which indicates that a full lipid profile is necessary:
HDL $<$ 35 mg/dL (strongest predictor of CAD)
LDL $>$ 100 mg/dL with existing CAD
LDL \geq 130 mg/dL with two or more CAD risk factors
LDL \geq 160 mg/dL with fewer than two risk factors
Fasting triglycerides $>$ 250 mg/dL⁴⁶

Abnormal lipid values can sometimes have genetic causes and, in this case, may not respond to weight loss.

- *Type 2 diabetes*

Obesity is associated with Type 2 diabetes^{5, 26, 30, 31}. An increased risk has been shown for BMI \geq 20⁴⁷. Clinical values associated with abnormal carbohydrate metabolism that warrant weight reduction in overweight persons are⁴⁸:

- Fasting plasma glucose between 115 - 140 mg/dL or random plasma glucose 140 - 199 mg/dL during the oral glucose tolerance test, considered *impaired glucose tolerance*
- Fasting plasma glucose \geq 140 mg/dL or random plasma glucose \geq 200 mg/dL during the oral glucose tolerance test, considered *diabetes*.

- *Sleep apnea/obesity hypoventilation syndrome*

Obesity is the single most important cause of this syndrome, which is characterized by brief periods during sleep when breathing ceases and, in some cases, hypoxemia. It contributes to impaired alertness during the day and is a risk factor for premature death^{16, 31, 49, 50}. Weight reduction can be very effective in controlling sleep apnea^{16, 49, 50}.

A strong predictor is upper body obesity, especially in males⁵³. Other clinical predictors are: Patient reports of the presence of snoring, witnessed apnea, and daytime hypersomnolence^{51, 52}. Confirmation of this diagnosis is made by a formal sleep study⁴⁹.

- *Osteoarthritis*

Osteoarthritis of the knee, hip, and back is strongly associated with obesity^{5, 26, 31, 54}. An increased risk in the incidence of osteoarthritis has been shown at BMI \geq 25⁵⁴. Confirmation is made with radiographic evaluation. Osteoarthritis becomes a comorbidity when lifestyle is impaired or treatments are required. Weight loss decreases symptoms and improves the management of osteoarthritis in weightbearing joints^{30, 54}.

- *Infertility*

There is an association between both male and female infertility and obesity⁵⁵⁻⁵⁷. In the male, abnormal reproductive hormone levels have been reported⁵⁸. If other causes of infertility have been ruled out, proper treatment of infertility may include weight loss^{56, 58, 59}.

- *Other Conditions*

Several other comorbid conditions are associated with obesity. These include:

- Idiopathic intracranial hypertension^{60, 61}
- Lower extremity venous stasis disease⁶²
- Gastro-esophageal reflux⁶³
- Urinary stress incontinence⁵⁶.

These four medical problems become comorbid conditions when they impair or diminish quality of life or require chronic treatment.

IDENTIFY OTHER RISK FACTORS

Does your patient have any of the following ADDITIONAL RISK FACTORS?

- Waist-to-Hip Ratio (WHR):
 - Males: >1.0
 - Females: >0.8
- Waist Circumference:
 - Males: \geq 40 inches (102 cm)
 - Females: \geq 35 inches (88 cm)
- Factors Requiring Clinical Judgment:
 - Progressive weight gain since adolescence
 - Individual history of obesity
 - Family history of obesity
 - Bulimia nervosa
 - Binge eating disorder
 - Depression, anxiety and stress
 - Medical or physical conditions, including:
 - Hyperinsulinemia
 - Certain cancers
 - Menopause
 - Disease burden
 - Quality of life
 - Physical inactivity

Risk factors identified

An increased waist-to-hip ratio or waist circumference is associated with increased risk for obesity-related comorbidities. A number of other clinical conditions and individual considerations may also impact on obesity-related risk. The magnitude of associated risks for these conditions alone or in combination for an individual patient is unclear. For this reason, clinical judgment is needed to evaluate each patient thoroughly and determine if sufficient risk exists to raise the BMI-determined risk level. The risk factors to consider when assessing your patient's need for weight reduction treatment are identified in the box above.

Waist-to-hip ratio (WHR)

The WHR is a tool for assessing fat distribution. Fat tends to collect in two primary areas: The abdomen (an apple shape or android obesity, common in males) or hips and buttocks (a pear shape or gynecoid obesity, common in females)⁶⁴. Some health risks of obesity are more likely to occur when fat is concentrated in the abdominal, rather than the gluteal, area^{12, 26, 28, 29, 31, 37, 64-67}. A ratio >1.0 in males and >0.8 in females suggests a fat distribution that poses increased risks to health, as compared with the risk of excess weight alone^{25, 68}.

Menopause is a developmental stage that places a significant proportion of women at risk for weight gain of approximately five pounds⁶⁹. Such gains are associated with an undesirable increase in central adiposity and other risk factors for cardiovascular disease^{13, 31, 69}. A woman's waist-to-hip ratio, which may have previously been within normal limits, may change dramatically^{37, 70}.

For information on measuring the patient and determining WHR, refer to the appendix.

Waist measurement

The waist measurement is another way to assess fat distribution. Though there are more data in the U.S. on waist-to-hip ratio, recent data indicate that a waist measurement may be an adequate indicator of intra-abdominal fat and a better indication of health risk if it is ≥ 40 inches (102 cm) in males and ≥ 35 inches (88 cm) in females⁷¹.

All patients with a BMI ≤ 40 should be measured. Above a BMI of 40, waist measurement is unnecessary because the patient's health risk is already extremely high based on BMI alone.

Factors requiring clinical judgment

Each patient should be individually evaluated to determine if factors exist that increase health risk above that associated with BMI alone. These factors, listed below, must be weighed by the physician.

- Progressive weight gain

A weight gain of 22 pounds (10 kg) or more since age 18 for women and age 22 for men is associated with increased risk of mortality in middle adulthood³. If available, examine your patient's weight records since age 22 in males or 18 in females. In the absence of reliable records, your patient can self-report weight history. To aid this recall, ask the patient to recall his/her weight at the time of a major life event associated with these ages; e.g., at high-school or college graduation, at marriage, during military service, when playing a serious sport in early adulthood,

or, for a woman, during pregnancy or at the birth of her first child.

- Individual history of obesity

- Has your patient (especially those with a BMI <27) experienced a ten-pound weight gain over the past year? If so and the patient is interested in changing eating or activity habits or adopting a more healthful lifestyle (which might include dealing with psychological stress of their job or living situation), intervention can prevent the development of severe obesity, which is very refractory to therapy.
- Has your patient lost weight and does the patient currently have a reduced BMI? If so, the patient may be eligible for certain weight-reduction treatment options that would not be appropriate if based solely on the BMI-related health risk. For example: A patient with a previous BMI of 31, mild hypertension, and a family history of premature death due to heart disease loses weight voluntarily and now has a BMI of 25 with normal blood pressure. The patient has been struggling to maintain this weight loss for the past three years and is now starting to regain weight. This patient is very different from the patient who has a BMI of 25 with normal blood pressure and who wants to lose a few pounds that s/he recently gained. The former patient may be eligible for a treatment program that would otherwise be available only to persons at a higher health risk, while the latter would not.

- Family history of obesity

Are there diseases and/or risk factors in your patient's family history that would indicate a high risk of obesity-associated problems or comorbidities in the future? Patients with obese (or formerly obese) family members are at increased risk for developing obesity^{72,73}. The BMI of these patients should be monitored, especially if their health risk assessment indicates increased risk. Awareness of family history of risk factors may also lead to increased readiness and motivation to lose weight.

- Bulimia nervosa

Does your patient have any of the bulimia nervosa⁷⁴ symptoms listed below? Weight reduction treatment may be postponed until the bulimia has been stabilized and the patient is ready to undertake weight reduction.

- Recurrent episodes of binge eating, characterized by both eating more food within an approximate two-hour period than most people would eat during a similar time under similar circumstances AND a sense of lack of control over the eating episode.
- Inappropriate compensatory methods to prevent weight gain such as self-induced vomiting, misuse of laxatives, diuretics, enemas, or other medications, fasting, or excessive exercise.
- Both the binge eating and inappropriate compensatory behaviors occur on average, at least twice a week for three months.
- The patient's self-evaluation is excessively influenced by body shape and weight.

- Binge eating disorder

Does your patient manifest symptoms of binge eating disorder⁷⁴ listed below? Treatment for binge eating disorder and weight reduction may occur simultaneously, although the binge eating disorder may influence the weight reduction treatment approach.

- Recurrent episodes of binge eating, characterized by consumption of more food within an

approximate two-hour period than most people would eat during a similar time under similar circumstances.

- A sense of lack of control over eating during the episode.
- The binge eating episodes are associated with at least three of the following characteristics:
 - Eating much more rapidly than normal
 - Eating until feeling uncomfortably full
 - Eating large amounts of food when not feeling physically hungry
 - Eating alone because of being embarrassed by how much one is eating
 - Feeling disgusted with oneself, depressed, or very guilty after overeating.
- The patient experiences marked distress regarding binge eating.
- Binge eating occurs, on average, at least two days a week for six months.
- Binge eating is NOT associated with regular use of inappropriate compensatory behaviors (see bulimia nervosa).

- Depression, anxiety, and stress

Is your patient suffering from depression, anxiety, or stress? The depression sometimes seen in obese patients may result from increased body weight or failed weight loss attempts¹⁵. Weight loss itself can also exacerbate depression^{15, 75, 76}, as can fenfluramine, a prescription weight-reduction drug⁹¹⁻⁹⁴. Stress is also frequently associated with increased body weight and is a predictor of relapse following weight loss^{72, 77, 78}.

To help determine if the patient is depressed, ask the patient if s/he has experienced any changes in mood, sleep patterns, general satisfaction with work, and/or general satisfaction in relationships with significant others. It should be noted that weight loss may precipitate psychological unease, especially in women, in that it may draw unwanted sexual attention to a slimmer figure or disturb relationships with significant others. Patients may need to be referred for treatment of these disorders while undergoing weight reduction treatment if they appear to interfere with progress.

- Medical or physical conditions

Certain conditions and medications promote weight gain and make weight reduction more difficult. Does your patient have any conditions which cause obesity such as hypothyroidism or Cushing's disease? Is your patient on any medication (e.g., steroids or tricyclic antidepressants) that might interfere with weight loss or even promote weight gain? Additional encouragement and support during the weight loss process may be important for these patients.

Hyperinsulinemia --

Does your patient have hyperinsulinemia? Obesity, especially upper-body obesity as indicated by an elevated waist-to-hip ratio, is associated with increased insulin resistance and hyperinsulinemia¹⁴. Resistance to insulin-stimulated glucose uptake is present in the majority of patients with Type 2 diabetes⁷⁹. Elevated insulin levels are also associated with hypertension, heart disease, and syndrome X (increased insulin resistance, hyperinsulinemia, hypertension, and dyslipidemia)^{37, 79-81}. Significant insulin resistance exists when fasting serum insulin is >15:U/ml.

Certain cancers --

An increased likelihood for breast cancer occurs in obese postmenopausal women^{82, 83}.

Colon cancer is somewhat related to obesity but remains controversial^{30, 31, 84}. The endometrium, prostate, and kidney become more susceptible to cancer in the obese^{31, 82, 85}. One study shows an increased risk for mortality risk for colon, breast, and endometrial cancers at BMIs ≥ 27 ³. Another study shows an increased risk of breast (in postmenopausal women) and endometrial cancers at BMIs ≥ 28 ⁸².

Menopause --

Menopause is a developmental stage that places a significant proportion of women at risk for weight gain of approximately five pounds⁶⁹. Such weight gains are associated with an undesirable increase in central adiposity and other risk factors for cardiovascular disease^{13, 31, 69}. Hormone replacement therapy does not affect this weight gain.

Disease burden --

What is the overall state of your patient's health? This influences the decision to undertake weight reduction treatment, as well as the treatment approach. As a patient's health status worsens, guarding against further erosion of health may become the primary motivation for weight loss. This can lead to increased readiness and motivation.

- *Quality of life*

Is your patient's degree of obesity such that it is impacting quality of life? Quality of life issues will vary from patient to patient and may influence readiness to lose weight.

- Excessive weight can lead to various degrees of impaired mobility which weight loss may improve.
- Prejudice and discrimination toward obese individuals occur in our society^{21, 75, 86-89}. College admissions, job interviews, and promotions are adversely affected by moderate degrees of obesity^{21, 75, 90}. Many patients' self-esteem is intimately associated with their body weight, and a reduction of mild to moderate obesity may significantly alter their self-perceptions.
- People with certain occupations--such as dancers, military personnel, and news broadcasters--may require a lean appearance for continued employment.

These quality of life issues may also influence readiness and motivation:

- The amount of weight your patient desires to lose (which may be more than is necessary to reduce BMI-related health risk to the minimal level).
- The patient who faces a minimal weight-related health risk but who has recently gained ten or more pounds. Such an individual may be interested in weight loss irrespective of health risk.

- *Physical inactivity*

Inactivity has been identified by the American Heart Association as a risk factor for coronary vascular disease. The 1996 *Surgeon General's Report on Physical Activity and Health* underscores the threat to health that a sedentary lifestyle represents⁹¹. Inactivity contributes to overweight and compounds the risk associated with overweight. Conversely, an overweight person who chooses to adopt a more physically active lifestyle can, in fact, improve health risk even in the absence of weight loss⁹².

Determine if your patient engages in any leisure-time physical activities and/or structured exercise

programs. Determine the intensity (does the patient break a sweat, talk?), duration (how many minutes?), and frequency (how many times a week?) of the activities.

Certain patients are unable to increase physical activity due to associated medical or physical conditions such as neuromuscular disorders or paralysis. These patients may need to be placed in a higher risk category. Without the option to create an energy deficit through exercise, these patients may be more likely to gain weight progressively.

DETERMINE PATIENT'S BMI-RELATED HEALTH RISK		
<i>What is your patient's BMI-related health risk? How is that risk modified by the presence of comorbid conditions and/or other risk factors?</i>		
BMI Category	Health Risk Based Solely on BMI	Risk Adjusted for Presence of Comorbid Conditions and/or Risk Factors
18-<25	Minimal	Low
25-<27	Low	Moderate
27-<30	Moderate	High
30-<35	High	Very high
35-<40	Very high	Extremely high
≥ 40	Extremely high	Extremely high

Why determine health risk?

Your patient's BMI alone will give you a good indication of weight-related health risk. This risk, however, may be increased by the presence of one or more comorbid conditions and/or additional risk factors. Take all of these factors into account to gain a more complete picture of your patient's BMI-related health risk and help identify those patients for whom intervention is appropriate and weight reduction treatment may be warranted.

Your patient's adjusted risk level will be used later in the model to help you and your patient decide on treatment option(s). (See page 37.)

How to determine your patient's risk?

Use the chart above to determine your patient's BMI-related health risk. First, find the appropriate BMI category. If the patient has no comorbid conditions or other risk factors, determine the health risk based solely on BMI. Adjust the patient's risk if either comorbid condition(s) and/or other risk factors are present.

Risk categories discussed

For patients at risk, additional weight gain can be hazardous to their health and may increase their risk of premature mortality and/or additional morbidity^{3, 9, 29, 31}. The patient with a BMI of ≥ 35 is likely to have at least one comorbidity already present. Even modest weight loss can contribute to improved health and improvement of symptoms if comorbid conditions are present¹³⁻²¹.

The following will help you assess the need for intervention.

- Health risk: Minimal

There is no health-associated reason for weight reduction treatment, but there may be other reasons, such as appearance or improved self-confidence, that justify a weight-reduction strategy.

This category is associated with the lowest rates of all-cause mortality.³ There is no evidence that weight reduction for patients who face only minimal risk can appreciably reduce their risk to nil⁹. However, discussion of strategies to prevent weight gain may be warranted.

- Health risk: Low

Patients in this range should avoid further weight gain, since they are at slightly increased risk for all cause-mortality³. Discussion of strategies to prevent weight gain are warranted.

Despite the lack of evidence suggesting patients in this category warrant weight reduction treatment²¹, they should not be denied weight reduction treatment should they request it. The treatment options for which they are eligible will reflect their health risk.

- Health risk: Moderate

A weight reduction strategy that addresses the quality of the diet and physical activity is warranted for these patients. If the patient is not interested in weight loss, a discussion about weight gain prevention is warranted.

Patients in this category are at increased risk for cardiovascular disease, Type 2 diabetes, hypertension, stroke, and certain types of cancer^{3, 13, 47, 82}. These diseases represent five of the ten leading causes of death in the U.S. today⁹³. These patients are also more likely to suffer premature mortality⁹. It is estimated that at least 300,000 premature deaths occur annually as a consequence of a combination of overweight, poor diet, and inactivity⁹³.

- Health risk: High

Weight reduction treatment is appropriate for these patients. Life expectancy is reduced^{13, 20, 26}, and quality of life is markedly reduced once mobility and self-sufficiency are compromised by the obesity.

- Health risk: Very high/extremely high

Weight reduction treatment is recommended. Patients in this category are highly likely to have at least one comorbidity^{11, 15, 94}, and they are at increased risk for developing additional comorbidities, especially as they get older^{5, 21}. Life expectancy is reduced^{3, 9, 13, 20, 95}, and quality of life is markedly reduced once mobility and self-sufficiency are undermined.

DETERMINE EXCLUSIONS

Does your patient have any conditions that warrant a temporary or permanent exclusion from weight reduction treatment?

Temporary Exclusions:

- Pregnancy
- Lactation
- Unstable mental illness
- Unstable medical conditions

Possible Exclusions (require clinical judgment):

- Cholelithiasis
- Osteoporosis

Permanent Exclusions:

- Anorexia nervosa
- Terminal illness

Why Exclusions?

Regardless of a patient's need or desire to lose weight, the presence of certain medical or psychological conditions may exclude weight reduction treatment, either temporarily or permanently. These conditions and guidance are described below.

Temporary exclusions

- Pregnancy

Is the woman pregnant? All women of childbearing age should be advised that weight loss during pregnancy is not recommended during pregnancy. A small proportion of white women and a larger proportion of African American women are at increased risk for significant weight gain associated with pregnancy⁹⁶. Hispanics and other ethnic groups have not been studied to assess risk of pregnancy-related significant weight gain. This weight gain should be addressed postpartum after milk production is well established in women who choose to breast feed.

- Lactation

Is the woman breast-feeding? If yes, breast-feeding is an exclusion until milk production is well established, as breast-feeding women have an increased need for calories to support milk production (approximately 500 additional kcal per day)⁹⁷. If a lactating woman is overweight, a weight loss of up to four to five pounds per month (2 kg) is unlikely to adversely affect milk volume, but such women should be alert for any indications that the infant's appetite is not being satisfied. Weight loss exceeding four to five pounds per month (or > 2 kg/month) after the first postpartum month is not advisable for these patients⁹⁸.

- *Unstable mental illness*

Does the patient suffer from a mental illness that needs to be stabilized (e.g., schizophrenia, bi-polar disorder)? If yes, the patient should be referred to a psychiatric/psychological evaluation and treatment before attempting to lose weight. Stabilization is important for efficacy of weight loss treatment.

- *Unstable medical conditions*

Does the patient have a medical condition that needs to be stabilized (e.g. , any previous or current medical condition or surgical procedure that might interfere with, or be exacerbated by, weight loss efforts)? For weight loss treatment for be safe and effective, any significant medical condition that will interfere with the effort required for weight loss needs to be resolved or stabilized before treatment begins.

Possible exclusions

- *Cholelithiasis (gallstone formation)*

Does your patient have cholelithiasis? If yes, this condition can be aggravated by weight loss. You must decide if the risks and benefits of weight reduction warrant excluding this patient from weight reduction treatment.

An increased risk for the incidence of gallstone formation has been shown at BMI ≥ 25 ⁹⁹. Gallstone formation is more common among obese persons as compared with their lean counterparts^{100,101} and is more prevalent as the degree of obesity worsens⁴, especially in women⁷. The yearly symptomatic gallstone rate is one percent in women with a BMI >30 and is approximately two percent in women with a BMI >45.¹⁰² Weight loss, especially rapid weight loss, can precipitate or exacerbate gallstone formation and is therefore not a condition that improves as BMI is reduced^{98,103}. Patients undergoing surgical treatment of obesity may require simultaneous removal of gallbladder.

- *Osteoporosis*

Does your patient have osteoporosis? If yes, this condition can be aggravated by weight loss¹⁰⁴. You need to decide if the risks and benefits of weight reduction warrant excluding this patient from weight reduction treatment.

There is evidence that increased body weight and body fat¹⁰⁵ protects bone mineral density, and that weight loss may result in decreased bone density, thereby increasing the risk of fracture. The benefits of weight loss in such a patient--improved mobility, reduced osteoarthritis, and decreased tendency to fall--must be weighed against the risk of fracture that may be associated with the weight loss. If weight reduction treatment is undertaken, specific recommendations regarding diet, nutritional supplements, physical activity, pharmacological and/or hormonal therapy need to be made to protect bone mineral density in this patient¹⁰⁵.

Permanent exclusions

- *Eating disorder: Anorexia nervosa*

Does the patient exhibit any of the following signs or symptoms? If yes, voluntary weight loss for these patients is inappropriate and not recommended.

A referral for a psychological/psychiatric evaluation and appropriate medical attention is indicated. (Note: Patients with anorexia nervosa would automatically be excluded from weight reduction treatment based on their BMI. Inclusion in this document is deliberate, as it is not uncommon for such patients to seek treatment for weight reduction, despite lack of need).

Essential features of anorexia nervosa include⁷⁴:

- Refusal to maintain a minimally normal body weight and a BMI ≤ 17.5 *
- Intense fear of gaining weight or becoming fat even though underweight
- Significant disturbance in the perception of body shape or size
- Amenorrhea (if postmenarcheal).

(*Note: The BMI < 17.5 is a suggested cutoff, since it is unreasonable to specify a single standard for minimally normal weight that applies to all individuals of a given age and height. Consider the patient's BMI as well as body build and weight history.)

- *Terminal illness*

Is the patient terminally ill? If yes, voluntary weight loss is inappropriate. Such requests are exceedingly rare.

An individual evaluation for patients in the earlier stages of illness is important to determine if nutritional counseling for healthful eating is appropriate.

ASSESS PATIENT READINESS

Is your patient READY to lose weight?

What is readiness?

Readiness means that a patient is interested in weight reduction, understands that weight management is a lifelong commitment, and is willing to do what is appropriate and necessary to support success¹⁰⁶. As with any form of medical treatment, the patient has a right to deny treatment. Just as you should solicit an informed consent, you should also attempt to assure an informed refusal. It is important to communicate an accurate assessment of health risk to the patient.

Why assess readiness?

This assessment can help complete your understanding of the patient's weight treatment needs, attitudes, and preferences by determining the patient's medical, physical, and psychological abilities to lose weight. Lack of readiness--even if weight reduction treatment is warranted to reduce health risk--may negatively impact both short- and long-term success⁸⁶ and is an indication that weight reduction treatment is not the appropriate strategy.

Factors to consider

Some questions you can use to help determine patient readiness:

- Does the patient say s/he is interested in losing weight?
- If the patient is a veteran of many attempts to lose weight, how motivated is s/he to lose weight compared with previous attempts?
- Is it an appropriate time to lose weight or are there other significant life issues that will interfere with the effort required?
- Does the patient sound as if s/he is ready to make a long-term commitment to a new lifestyle of healthful eating and regular physical activity?

DECISION:

Is patient eligible for and interested in weight reduction treatment? YES/NO

Reasons for "no" decision:

- BMI-related health risk does not warrant treatment, and the patient is not requesting treatment
- Exclusions
- Patient is not ready or not interested in weight reduction treatment.

THE TREATMENT MODEL -- PART II

You and your patient are now ready to have an informed discussion and determine the fundamental treatment strategy:

- Weight reduction
- or
- Prevention of further weight gain.

While the patient's BMI-related health risk may provide the foundation for such a discussion, the patient's readiness to lose weight and any exclusionary conditions should influence your final decision. The treatment strategy should be determined jointly.

THE TREATMENT MODEL -- PART III

PRESCRIBE: WEIGHT REDUCTION TREATMENT THROUGH ENERGY DEFICIT

What is fundamental to weight reduction treatment?

- Select an appropriate target BMI
- Create an energy deficit
- Establish permanent changes in lifestyle ^{75, 78, 107-110}

STEP 1: SELECT AN APPROPRIATE TARGET BMI

How to select a weight loss goal

For a patient with a BMI <30 who is otherwise healthy and interested in such a goal, selecting a target within the BMI range of 20-27 is appropriate since this is the range is associated with the lowest all-cause mortality ^{3, 9}.

For all other patients--especially those with an initial BMI ≥ 30 who may have a long history of overweight--it may be neither realistic nor practical to target a goal more than 2 BMI units below their current BMI.

Selecting a target BMI should be approached from two perspectives:

- Is this goal realistic?
- Can this goal be maintained permanently?

To answer these questions, your patient must consider the following:

- Have I ever weighed within this BMI category in my adult life?
- If yes, how many years ago?
- Why can I achieve it now?
- Can I sustain this goal (e.g., If 1.5 hours of physical activity five to seven days a week is required to sustain this weight, can I afford and am I willing to invest this amount of time)?

Medically significant weight loss can be as modest five percent of initial body weight ^{13, 14, 18, 19}.

The vast majority of patients with a BMI ≥ 30 do not lose more than ten to 12 percent of initial body weight. Most, however, want to lose 20 to 30 percent yet feel discouraged when they fail to achieve (or maintain) this loss ^{111, 112}. Such discouragement does not bode well for the maintenance of weight goals.

You can play an important role by helping the patient evaluate the value of an aggressive goal that cannot be maintained against a modest but sustainable goal that will appreciably impact health, mobility, independence, and quality of life.

STEP 2: CREATE AN ENERGY DEFICIT

Pharmacological intervention

Pharmacological agents are a useful adjunct to, but not a substitute for, the necessary changes in eating and physical activity described previously^{122,123}. The effectiveness of any pharmacologic intervention depends on its use with appropriate dietary intervention, increased physical activity, and lifestyle change.

Pharmacological interventions are designed to contribute to energy deficit through a variety of mechanisms¹²⁴. Currently available medications act on neurotransmitters in the brain to partially suppress appetite and thereby reduce food consumption. A possible thermogenic role in addition to its effect on appetite suppression is currently being explored for sibutramine, a selective noradrenaline and serotonin reuptake inhibitor (SNRI) approved by the Food and Drug Administration (FDA) in November, 1997. Over-the-counter, bulk-producing products fill the stomach to suppress appetite. Other medications with novel pharmacologic mechanisms include agents such as orlistat that act on the gastrointestinal tract to selectively interfere with fat absorption and agents that increase energy expenditure for metabolism.

Generally, commonly used pharmacologic interventions to suppress appetite are prescription agents that fall into the categories of CNS Acting Agents and Non-CNS Acting Agents. The former category includes catecholaminergic agents, serotonergic agonists¹²⁵, and a combination of the two. The latter category includes orlistat.

- CNS Acting Agents

Catecholaminergic agents decrease appetite and food intake primarily by increasing the availability of norepinephrine in the brain¹²⁵. Unlike DEA Schedule II anorexics like dextroamphetamine, commonly used Schedule IV catecholaminergic agents have low potential for abuse. The following table outlines the generic and brand names of these agents, their schedules, and the recommended daily dosage.

AVAILABLE CATECHOLAMINERGIC AGENTS

Agent	Trade Name	Daily Dosage (mg)*
<u>Schedule III Agents:</u>		
benzphetamine Hcl	Didrex	25-50 to 75-150
phendimetrazine tartrate	Bontril	105
	Slow-Release Bontril	105
	Prelu-2	105
	Plegine	105
	X-Trozine	105
	Extended Release X-Trozine	105
<u>Schedule IV Agents:</u>		
mazindol Hcl	Sanorex	1 to 3
	Mazanor	1 to 3
phentermine Hcl	Adipex-P	37.5**
	Fastin	30
	Obenix™	37.5
	Oby-Cap™	30
	Oby-Trim	30
	Zantryl	30
phentermine resin	Ionamin	30**
<u>Unscheduled (OTC) Agents:</u>		
phenylpropanolamine	Dexatrim	75
	Acutrim	

* Represents recommended daily intake. Ranges represent initial dose - maximum dose.

Titration may be indicated depending on each patient's therapeutic response.

**Usual dosage. Some patients may respond to half this dosage.

Serotonergic agonists act primarily by increasing serotonin levels in the brain. On September 15, 1997, at the request of the FDA, manufacturers voluntarily removed from the market two drugs in this category, fenfluramine HCL and dexfenfluramine HCL, after concerns were raised regarding the possible side effect of cardiac valvulopathy.

Combination Catecholaminergic/Serotonergic agents. Sibutramine (trade name, Meridia), a β -phenethylamine which inhibits reuptake of serotonin and noradrenaline, is functionally similar to using a combination of a catecholaminergic and a serotonergic drug²²⁷. A dose-dependent reduction in body weight has been observed in groups treated with sibutramine. A double-blind randomized placebo-controlled trial demonstrated that groups given doses of 10, 15, 20 and 30 mg sibutramine exhibited significantly greater weight loss than a placebo group²²⁷. Unlike fenfluramine and dexfenfluramine, sibutramine does not cause the release of monoamine neurotransmitters, but appears to act through monoamine reuptake inhibition. Its beneficial effects on weight loss are caused by synergistic interactions between noradrenaline and 5-hydroxytryptamine²²⁸. Classified as a DEA Schedule IV drug, sibutramine has a low potential for abuse and dependence²²⁹.

The BMI can serve as one clinical measure for determining the appropriateness of pharmacotherapy, specifically, $BMI \geq 30$ in persons without comorbidities and $BMI \geq 27$ in the case where one or more comorbidities is present. Coexisting conditions that contraindicate pharmacotherapy, such as pregnancy/lactation, uncontrolled cardiovascular disease, and concurrent use of certain agents, must also be considered when evaluating pharmacotherapy. The addictive potential, particularly of the Schedule II and Schedule III agents, is also an important clinical consideration. The Treatment Option Analysis Chart in the appendix summarizes the recommended BMI guidelines, cautions, concerns, risks, side effects, benefits, and short-term outcome associated with antiobesity pharmacotherapy in general.

When initiating pharmacotherapy, treatment must be evaluated during the early stage; i.e., four to six weeks after initiation of the drug, to determine if there is a beneficial effect on weight loss. Pharmacotherapy can be associated with an initial weight loss of up to one pound per week in responders, although weight loss tends to plateau after six to eight months of therapy^{126-135,230}. Not all patients respond to pharmacotherapy, however, and it has been suggested that patients who are insensitive to appetite suppressants in the initial three to six weeks of treatment are likely to remain unresponsive to pharmacotherapy^{127-135,231}.

When the agent does have a beneficial effect, pharmacotherapy can help maintain weight loss. As with most therapies, there is no sustained benefit once medication is discontinued^{122,123}. When antiobesity pharmacotherapy is stopped, patients tend to regain weight^{127-135,227}, **and the maintenance of weight loss depends on the degree to which the patient has improved diet and activity patterns**^{132,133}. Drug treatment must be continuously evaluated to determine if there is a beneficial effect on weight maintenance.

The drugs, dexfenfluramine and fenfluramine (which were withdrawn from the market September 15, 1997), sibutramine, phentermine, and mazindol were clinically evaluated for at

least one year, either independently or in combination^{126-137,230}. Phentermine should be prescribed only with caution in patients with even mild hypertension.

The use of anorexic drugs (primarily fenfluramine and dexfenfluramine) for more than three months was associated with a small risk of primary pulmonary hypertension (PPH)¹⁴⁷. Additionally, according to information provided by FDA, preliminary echocardiographic data noted that some patients who took fenfluramine and dexfenfluramine had valvular abnormalities.

Studies on the relationship of fenfluramine and dexfenfluramine with valvular abnormalities are underway. Recommendations for the medical management of people who took these drugs were released by the American College of Cardiology (ACC) in October, 1997 and by The U.S. Department of Health and Human Services (DHHS) in November, 1997²³². These recommendations may change as new information becomes available. ACC's interim statement is available on its web site (www.acc.org). The ACC is developing Guidelines on Valvular Heart Disease in conjunction with the American Heart Association (AHA). Release of the guidelines is expected in the summer of 1998. For the most current version of the DHHS recommendations, visit FDA's web site (www.fda.gov) or call FDA's "Fax on Demand" (1-800-342-2722). Useful information can also be found on AHA's web site (www.amhrt.org).

Sibutramine is the second antiobesity drug approved by FDA for weight loss and maintenance of weight loss. As with the serotonergic agonists, clinicians can make a judgement of clinical efficacy early, four weeks after starting treatment with sibutramine. Improvement in the waist to hip ratio was noted in a clinical study²³⁰.

Due to its noradrenergic effects, sibutramine has effects on blood pressure and heart rate. Sibutramine elevates both systolic and diastolic blood pressure by a mean of 2 mm Hg at daily doses of 10-15 mg in normotensive individuals²³¹. However, a 12-week study using 10 mg sibutramine daily in mildly hypertensive obese patients showed that the benefit of weight loss on blood pressure was seen in both the placebo and sibutramine treatment groups. Sibutramine also increases heart rate by 3-6 beats per minute²³¹. Carefully observing blood pressure and pulse in patients on sibutramine is strongly recommended.

Amphetamine and phenmetrazine HCl, both DEA Schedule II agents, have high potential for abuse and are not recommended for obesity treatment. Clinical data are limited for benzphetamine and phendimetrazine tartrate, and these DEA Schedule III agents also pose abuse potential that should be considered seriously before prescribing short- or long-term therapy. Phenylpropanolamine (PPA) has been shown safe and effective for early weight loss, although a meta-analysis of seven double-blind, placebo-controlled studies has demonstrated that the efficacy of PPA is lower than that of prescription anorexics when treatment exceeds four weeks¹⁴⁸.

As of November, 1997, orlistat (trade name Xenical), was being reviewed by FDA. It is not an appetite suppressant. The drug is non-systemic and acts directly at the level in the gastrointestinal tract to selectively inhibit fat absorption²³³. The recommended dose of 120 mg tid (360 mg daily) with mildly hypocaloric meals results in a 30% reduction in fat absorption²³³. Double-blind, randomized, placebo-controlled multicenter studies demonstrated that treatment with orlistat resulted in a greater weight loss than diet alone^{234,235}. The average weight loss for six studies totaled 9% at one year. Maximum weight loss occurred at about six months and weight loss was sustained for one year with continued drug treatment. In four 2-year studies, orlistat maintained weight loss better than diet alone²³⁵. Fat soluble vitamin levels generally remained within the normal range in patients treated with orlistat. A small percentage of patients on orlistat showed levels of vitamins D and E, and beta-carotene outside the reference range compared to diet alone; these corrected with vitamin supplementation. Vitamin E levels were normal when adjusted for plasma LDL levels²³⁴.

A meta-analysis conducted in all subjects enrolled in seven phase III trials showed that participants in the orlistat treatment group experienced a statistically significant reduction in LDL cholesterol, LDL/HDL ratios and blood pressure compared to diet alone²³⁵. Orlistat has also been found to improve glycemic control and lower insulin levels in obese patients²³⁵.

Surgery

Surgical treatment for obesity contributes to the establishment of an energy deficit by restricting caloric intake and by other mechanisms that appear to affect the nutrient utilization. Surgical treatment for obesity should be considered for patients with a BMI ≥ 40 or a BMI ≥ 35 with comorbidities or other risk factors¹⁴⁹. Most multidisciplinary programs include appropriate dietary intervention, increased physical activity, and lifestyle change strategies¹⁵⁰.

The Roux-en-Y gastric bypass (RYGB) and the Vertical Banded Gastroplasty (VGB) are the most commonly performed and widely accepted procedures currently in use¹⁴⁹⁻¹⁵². These procedures were discussed at the 1991 National Institutes of Health (NIH) Consensus Conference and are supported by long-term data^{149, 153}. Modifications of the gastric bypass which appear to increase the malabsorptive component of the procedure, such as distal gastric bypass and

bilio-pancreatic diversion, are being performed by some surgeons¹⁵⁴⁻¹⁵⁷. The NIH conference members concluded that, although these procedures did increase weight loss, there was a substantial increase in nutritional and metabolic complications as compared to RYGB and VGB. Such procedures can be considered only for selected patients under appropriate circumstances. Gastric banding using prosthetic plastic bands has been developed and tested since the mid-1980s. Though there is potential for reduced complications and cost because the bands have been in continual evolution, it is not clear what weight loss will be long-term (five to ten years). All of the bands have required revision rates of at least ten percent. Surgical procedures require lifetime follow-up and should be done by experienced surgeons and health care teams prepared to make this commitment¹⁴⁹. After sufficient training, surgeons committed to a program of surgical treatment of obesity should maintain sufficient volume to allow the team, which includes dietitians, nurses, and those who conduct follow-up, to maintain their skills.

STEP 3: ESTABLISH PERMANENT CHANGES IN LIFESTYLE

Lifestyle change strategies

Lifestyle change strategies support decreased food intake and increased physical activity, in that they support an individual's ability to comply with the energy deficit prescription^{75, 107, 158, 159}.

Their use in combination with all other treatment modalities (medications, surgery, moderate, low, and very low calorie diets) *should be routine practice*^{75, 107, 127, 150, 158}.

Current behavioral programs use several key lifestyle change strategies together with nutritional training. These strategies help the patient translate healthy eating and increased physical activity into action^{111, 158}. These strategies are:

- Self-monitoring of eating and activity. The patient usually completes a thorough food and activity diary.
- Stress management, which involves the use of problem-solving strategies to reduce or cope with stressful events. Examples include meditation and relaxation techniques.
- Stimulus control helps patients identify and address cues in their environment that are associated with underexercising and unhealthy eating. Buying food when not hungry and laying out exercise clothing to support regular physical activity are examples of cue modification.
- Reinforcement of helpful lifestyle change includes the use of rewards (contingency management) for appropriate behavior changes, as well as social support from family and friends.
- Cognitive restructuring, which focuses heavily on modification of self-defeating thoughts and feelings. This helps the patient change attitudes and beliefs about unrealistic goals and expectations of body image.

There are three key ideas among these strategies: Self-monitoring, stress management, and increased physical activity. Physical activity, in addition to helping expend energy, reduces stress and anxiety.

More than 150 studies have evaluated the effectiveness of lifestyle change for the treatment of obesity. On average, such interventions produced weight loss of approximately 18.7 pounds (8.5 kg) and a nine percent reduction in initial body weight^{20, 111}. These positive results are tempered by the finding that program participants often abandon their behavioral strategies and gradually regain weight once treatment has ended¹¹¹. **Structured post-treatment (weight maintenance) programs can effectively help participants sustain weight loss¹⁶⁰, underscoring the concept of obesity as a chronic condition that requires continuous care and follow up.**

SELECT WEIGHT REDUCTION TREATMENT OPTIONS

Based on health risk, what treatment options are available for this patient?

<u>Health Risk</u>	<u>Treatment Options(s) Available</u>
Minimal and low Increased physical activity	Healthful eating and/or moderate deficit diet Lifestyle change strategies
Moderate	All the above plus low calorie diet
High and very high	All the above plus pharmacotherapy and very low calorie diet
Extremely high	All the above plus surgical intervention

Which treatment options are available to the patient?

The level of health risk facing your patient determines the treatment option(s), which are identified in the above table. Very low-calorie diets and pharmacotherapy, for example, are available only to patients at sufficiently high health risk^{118, 161, 162}. For surgical intervention, the health risk must be extremely high¹⁴⁹.

To achieve an appropriate energy deficit and permanent lifestyle change, several treatment options should be combined. Wherever possible, education about healthful eating and portion control and/or a moderate caloric deficit should be combined with increased physical activity and lifestyle change strategies. Additional treatment options can be combined with this foundation to create a comprehensive treatment plan for the patient. This strategy results in improved eating and exercise habits, even in the absence of weight loss.

Treatment Option Analysis Charts

The Treatment Option Analysis Charts are designed to help you and your patient study the merits, risks, and costs of each weight reduction treatment option. Some factors to consider when reviewing these charts with your patient include:

- Patient interest

Your patient may not wish to pursue a treatment option, even if eligible. Such options should be excluded from those being considered.

- Risk/benefit ratio

You and the patient are looking for the least invasive therapy that will produce the best possible outcome. The potential risks and side effects need to be weighed against the outcome and potential benefits for your patient.

- *Weight reduction treatment history*

Your patient's treatment history may influence the current treatment option. Determine the patient's diet history, attempts to increase physical activity, or efforts to make lifestyle changes. The physician should also explore drug and surgical therapy histories.

- Some treatment options may still be appropriate for the patient because they've worked in the past (five to ten percent of initial body weight loss without an immediate weight regain).
- Some options may need to be excluded because they have not worked in the past and are not likely to work this time either.
- An alternative form of the same treatment option might be a viable option (e.g., a different dietary alternative or a different drug).
- An entirely new option might be required this time.

Other treatment referrals

Once a treatment option is selected, you and your patient may wish to discuss any additional treatment that may be needed. Examples include binge eating disorder, dealing with a past history of sexual abuse, or dealing with unwanted attention to a decreased body weight. Has your patient ever been the victim of sexual, physical, or verbal abuse?

Referral for psychological treatment may be needed prior to or during weight reduction treatment--particularly if weight loss is attracting unwelcome sexual attention or precipitates negative emotions or experiences.

IDENTIFY TREATMENT PROVIDER AND LOCATION

What weight reduction treatment programs or services meet your patient's treatment needs?

Treatment Option:

Moderate deficit diet,
Physical activity, +
Lifestyle change

Low-calorie diet (LCD),
Physical activity, +
Lifestyle change

Very low calorie diet,
Physical activity, +
Lifestyle change

Above + pharmacotherapy

Surgery, individually
prescribed diet,
physical activity, +
lifestyle change

Who May Provide:

--Self-help
--Non-clinical programs
--Health care professionals

--As above (Professional
monitoring may be needed
for LCD)

--As above + physician
--Clinical program + physician

--As above

--Surgical clinical program

Who may treat the patient?

Once the most appropriate treatment option has been selected, you and your patient need to decide who is in the best position to provide or deliver that treatment. Major categories of treatment programs and services have been identified above for each treatment option and are also described below.

Key questions to keep in mind when selecting a treatment program include:

- What treatment programs and services are available within your community that would be appropriate for the treatment plan you and your patient have decided upon?
- Which of these programs and/or services best meets the patient's weight reduction needs?

Treatment providers identified

Treatment programs and services fall into several different categories based on who is actually providing the weight reduction treatment¹¹⁵.

- Self-help

Any effort that a patient makes to lose weight by him/herself qualifies as self-help. The patient either purchases weight loss materials and/or products or receives them from the physician or other health care provider and implements them individually at home.

- Non-clinical programs

These programs include both informal and formal weight loss programs which can be delivered one-on-one, in groups, or as a combination. They may be offered by non-commercial organizations such as TOPS (Take Off Pounds Sensibly) or OA (Overeaters Anonymous), or they can include the more formal programs offered by commercial organizations such as Diet Workshop, Jenny Craig, and Weight Watchers.

- Health care professionals

These include professionals such as registered dietitians (RD), exercise physiologists with at least a masters degree in exercise physiology, social workers (MSW or CSW), clinical psychologists (PhD), nurse practitioners (RN), and weight loss specialists certified by the International Association of Eating Disorder Professionals or the American Society of Bariatric Physicians.

- Clinical programs

Any programs that are delivered in a hospital, clinic, or public health setting, or research facilities. Clinical programs are usually delivered by a multi-disciplinary team and include medical supervision. Programs that offer surgery fall in this category.

Factors to consider

Factors which influence the selection of a particular weight loss program and which need to be discussed with your patient as part of the selection process include:

-Distance/convenience

Availability of a program may influence your patient's treatment decision. In general, proximity to either home or workplace is recommended. Questions to consider include:

- Is the program easy for your patient to attend on a regular basis or is it inconvenient?
- Does your patient have the means to travel to the treatment site as often as necessary?

- Cost

Some treatment options cost more than others. Affordability often influences the decision about which treatment option to undertake.

- Does your patient have the financial resources (personal and/or insurance) for the weight loss program or service being considered?

- Time

Weight loss involves making and taking the time to do all that is required. Some patients are unwilling or unable to invest significant amounts of time to support the necessary changes.

- Is your patient able and willing to take the time to attend meeting and follow through with doctor's appointments, physical activity, and food preparation?

Support

- Need for professional support and monitoring

Indicators such as disease burden, success with prior treatment programs, and medical problems may indicate if professional support and monitoring are needed. For example, self-help is probably not an appropriate option for a patient who has never successfully lost weight in any non-commercial or commercial program. A health care professional may be a more appropriate choice.

More detailed information in appendix

The appendix contains more detailed information on some non-commercial and commercial programs. Phone numbers for locating clinical programs and professional weight reduction services offered by health care professionals in your area are also in the appendix, or you can refer to your local phone book for community-based service providers. Educational materials for patients and providers can also be found in the appendix.

MONITOR PROGRESS

Is your patient losing weight? What are the next steps?

Satisfactory Progress? (Patient is losing weight)

- Encourage and recognize success
- Begin prevention of weight gain strategy

Unsatisfactory Progress? (Patient is not losing weight or is gaining weight.)

- Re-assess patient readiness. Then decide whether to:
 - Begin prevention of weight gain strategy?
 - Re-evaluate weight reduction treatment option?
 - Re-evaluate service provider?

Why is evaluation of progress so important?

Monitoring your patient's progress on a regular basis is perhaps one of the most important elements of the weight reduction process. It allows:

- Weight loss progress to be recognized and supported
- Medical conditions to be monitored
- Any problems or issues to be addressed at the earliest opportunity.

- Support for weight loss progress

You can help support your patient's weight loss progress by:

- Identifying what the patient is doing right and recognizing success
- Identifying and discussing problems and challenges
- Identifying and evaluating sources of support. (See the appendix.)

- Monitoring of medical conditions

As weight loss progresses, aggressive monitoring and follow-up is essential for patients on medications that may require adjustment as body weight decreases.

- Addressing of problems or issues

If weight loss is unsatisfactory, you need to offer support and understanding while re-examining the treatment plan:

- Consider another weight reduction option
- Reassess readiness
- Seek additional professional support to resolve psychological, social, or economic problems as the patient pursues weight loss efforts
- Consider a strategy for preventing weight gain.

- *Who should do the follow-up?*

Who does the follow-up depends on the treatment option and provider:

- A patient who has elected the self-help method will require regular follow-up with you
- For all other patients, monitoring will likely be a team approach with you in the lead
- Patients on medication will need ongoing care from you; i.e., medication adjustments, weight reduction monitoring
- If you have referred your patient for obesity surgery, you need to decide what role you will play in the follow-up care. Will you be turning over follow-up responsibility entirely to the surgeon or will you continue to play a role in this patient's treatment? The distance between the patient's home and the surgical treatment center will be a major factor in this decision.

Next steps

A patient who has achieved the weight loss goal needs to take steps to maintain that weight loss. A prescription for preventing weight gain through energy balance is appropriate.

WEIGHT GAIN PREVENTION

PRESCRIBE: WEIGHT GAIN PREVENTION

Fundamental steps of treatment:

- Select a realistic target BMI which the patient can maintain
- Create a balance between energy consumed in food and daily physical activity
- Establish permanent lifestyle change strategies

Who is this patient?

A patient for whom the prevention of weight gain is appropriate might be one who:

- Has successfully achieved the BMI goal and is now ready to sustain it
- Is not ready for or interested in weight reduction at this time
- Is temporarily excluded from weight reduction until a medical, physical or psychological problem stabilizes.

STEP 1: ESTABLISH A REALISTIC TARGET BMI

The BMI selected will likely be the patient's current BMI. Discuss the level of health risk associated with that BMI, taking into account any comorbidities or risk factors that may apply to your patient. Each BMI category spans approximately six pounds, which should be sufficiently wide to allow for normal fluctuations in body weight (e.g., associated with the menstrual cycle).

STEP 2: CREATE A BALANCE

You are in a unique position to influence the behavior of your patients and help them help themselves. Emphasize the importance of engaging in 30 minutes of (continuous or intermittent) moderate physical activity each day¹²⁰. The Physician-Based Assessment and Counseling for Exercise (PACE) materials described in the appendix can help you with this discussion. At a minimum, explain the value of expending energy and maintaining weight and of physical activity as reported in the *1996 Surgeon General's Report on Physical Activity and Health*⁹¹:

- Reduction of depression, stress, and anxiety
- Beneficial effects on the cardiovascular, respiratory, and musculoskeletal systems
- Weight maintenance.

The food intake of your patient needs to be balanced against the level of physical activity your patient is willing to undertake on a consistent basis. A registered dietitian (R.D.) (see appendix) is uniquely trained and qualified to help establish this balance. For the patient who has lost weight, food intake may have to increase slightly to achieve this balance. For other patients who are interested in stemming recent weight gain, food intake may need to decrease slightly. In either case, educate the patient about the principles of healthy eating, as this may improve weight maintenance. These principles stress the consumption of less fat and more grains, fruits, and vegetables, a prescription which often results in a net reduction in daily calories (although not necessarily less food). The educational materials in the appendix can offer some assistance in communicating this prescription.

Support

- Identify support services

Although many weight loss services offer weight maintenance counseling, clients often drop out after weight loss. You can encourage your patients to stay enrolled in these weight maintenance programs.

If you have a number of patients requiring such a service you could help them establish an informal group or direct them to local resources (see appendix).

Education

- Provide educational materials

Provide educational materials to the patient who does not have access to a support service. Resources and educational materials are listed in the appendix.

STEP 3: ESTABLISH PERMANENT LIFESTYLE CHANGE STRATEGIES

The following factors have been identified as critical for successful weight maintenance^{77, 78}:

- Self monitoring: The use of a diary for logging food intake and activity each day. A sample is provided in the appendix.
- Physical activity: Adoption of daily physical activity is key to successful weight maintenance.
- Problem solving: Learning to identify problems that threaten to undermine success and pursue strategies that will resolve those problems. Groups organized to help your patient problem solve will encourage success. (See appendix.)
- Stress management: Identifying sources of stress and using techniques to reduce or at least manage stress are essential. Physical activity is known to reduce stress.
- Relapse prevention: Being able to identify high-risk situations (dining out, parties, entertaining, etc.) and develop/implement plans to avoid or minimize the risk. It is important for the patient to forgive him/herself and view lapses as a learning experience.
- Social influence procedures: Learning to elicit support from others and identify saboteurs (who may be friends or relations) and convert them into supporters.

RE-EVALUATE WEIGHT REDUCTION NEED AND/OR PROGRESS

If Patient Is . . .

Temporarily excluded
until a condition stabilizes
or resolves

Not ready

At goal

. . . Then Re-evaluate

in three to six months.

in three to six months or sooner
if the patient initiates.

as for any other chronic
medical condition

Temporary exclusions and lack of readiness

A patient whose condition prompted a temporary exclusion should be re-evaluated every three to six months.

A patient whose treatment was deferred due to lack of readiness may be re-evaluated sooner if this patient decides s/he is now interested. Refer to the information on readiness assessment in the *Assess Patient Readiness* section of this document. The weight reduction process should begin with determining BMI and assessing health risk.

Successful maintenance

Frequent follow-up is critical to continued maintenance of lost weight¹⁶⁰. A schedule of regular check-up visits needs to be established. The follow-up column in the Treatment Option Analysis Chart in the appendix may help you and your patient determine how frequently such follow-up visits should occur.

Studies show that successful weight loss maintenance programs require frequent contact (weekly or biweekly) of participants and health care providers over the course of the program. These contacts include personal, telephone, and written communications, or the use of peer support groups that meet weekly¹⁶⁰.

One final note

It is recommended that you comment on your patient's successful weight maintenance and offer words of continued encouragement and support for this achievement. Maintenance--especially in patients who have lost weight and are trying to maintain it--loses its glamour when compliments stop. A word of support, encouragement, and understanding from you may go a long way in supporting your patient in this difficult *but possible* endeavor.