CAUSES OF OBESITY AND THEIR CURE MANAGEMENT

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WHAT IS OBESITY?

The foods we eat every day contribute to our well-being. Foods provide us with the nutrients we need for healthy bodies and the calories we need for energy. If we take in more calories than we burn, the extra food turns to fat and is stored in our bodies. If we overeat regularly, we gain weight, and if we continue to gain weight, we may become obese. Being obese means having so much body fat that our health is in danger. Having too much body fat can lead to diabetes, heart disease, high blood pressure,arthritis, sleep apnea, and stroke. Because of these risks, it is important to lose weight even if we don't feel bad now. It is hard to change eating habits and exercise habits. But we can do it if we make a plan.

We can use a measurement called a body mass index, or BMI, along with our waist size, to decide whether our weight is dangerous to our health. The BMI is a combination of our height and weight. If we have a BMI of 30 or higher, unhealthy eating patterns, and too little physical activity, our extra weight is putting our health in danger. People who carry too much fat around the middle, rather than around the hips, are more likely to have health problems. In women, a waist size of 35 in. (88 cm) or more raises the chance for disease. In men, a waist size of 40 in. (101 cm) or more raises the chance for disease.

Obesity results from the accumulation of excess fat on the body. Obesity is considered a chronic (long-term) disease, like high blood pressure or diabetes. It has many serious long-term consequences for our health, and it is a leading cause of preventable deaths in the United States (with tobacco use and high blood pressure). Obesity is defined as having a body mass index (BMI) of greater than 30. The BMI is a measure of our weight relative to our height. See the Body Mass Index Calculator.

CAUSES OF OBESITY

Weight gain occurs when we eat more calories than our body uses up. If the food we eat provides more calories than our body needs, the excess is converted to fat. Initially, fat cells increase in size. When they can no longer expand, they increase in number. If we lose weight, the size of the fat cells decreases, but the number of cells does not. Obesity, however, has many causes. The reasons for the imbalance between calorie intake and consumption vary by individual. Our age, gender, genes, psychological makeup, and environmental factors all may contribute. When we take in more calories than we burn off, we gain weight.

How we eat, how active we are, and other things affect how our body uses calories and whether we gain weight. our family members are obese, we may have inherited a tendency to gain weight. And our family also helps form our eating and lifestyle habits, which can lead to obesity. Also, our busy lives make it harder to plan and cook healthy meals. For many of us, it's easier to reach for prepared foods, go out to eat, or go to the drive-through. But these foods are often high in saturated fat and calories. Portions are often too large. Work schedules, long commutes, and other commitments also cut into the time we have for physical activity.

The distribution of our body fat also plays a role in determining our risk of obesity-related health problems. There are at least two different kinds of body fat. Studies conducted in Scandinavia have shown that excess body fat distributed around the waist ("apple"-shaped figure, intra-abdominal fat) carries more risk than fat distributed on the hips and thighs ("pear"-shaped figure, fat under the skin). Obesity is a complex disease for which no single cause or cure exists. We gain weight when we take in more calories than we burn off. But obesity is influenced by many other things, including:

1. **Habits :** Eating unhealthy foods and overeating are easy in our culture today.Many things influence eating behavior, including emotions, habits, and the availability of food.
2. **Lifestyle :** Modern conveniences—such as elevators, cars, and the remote control for the television—cut activity out of our lives. Obesity tends to run in families. This is caused both by genes and by shared diet and lifestyle habits.
3. **Genes :** If one of our parents is obese, we are more likely to be obese than someone who has parents of healthy weight. Our genes may play a role in efficiency of metabolism and storage and distribution of body fat.
4. **Friends and family :** If they eat a lot of snack foods high in saturated fat, eat at irregular times, and skip meals, we probably will too. And if they are not physically active, we may not be either. Other things influence our weight and whether we are physically active.
5. **Low self-esteem :** Being overweight or obese may lower our self-esteem and lead to eating as a way to comfort ourself. Repeated failure at dieting also can affect our self-esteem and make it even harder to lose weight.
6. **Emotional concerns :** Emotional stress, anxiety, or illnesses such as depression or chronic pain can lead to overeating. Some people eat to calm themselves, to avoid dealing with unpleasant tasks or situations, or to dampen negative emotions. Some people overeat because of depression, hopelessness, anger, boredom, and many other reasons that have nothing to do with hunger. This doesn't mean that overweight and obese people have more emotional problems than other people. It just means that their feelings influence their eating habits, causing them to overeat.
7. **Trauma :** Distressing events—such as childhood sexual, physical, or emotional abuse; loss of a parent during childhood; or marital or family problems—can contribute to overeating.
8. **Alcohol :** Alcohol (beer, wine, and mixed drinks) is very high in calories.
9. **Medicines or medical conditions :** Some medical conditions and medicines may also cause weight gain. Examples include having Cushing's syndrome orhypothyroidism or taking certain antidepressants or corticosteroids. Certain medical conditions and medications can cause or promote obesity, although these are much less common causes of obesity than overeating and inactivity. Some examples of these are as follows:
   - Cushing syndrome
   - Depression
   - Certain medications (examples are steroids, antidepressants, birth control pills)
   - Prader-Willi syndrome
   - Polycystic ovarian syndrome
   - Obesity can be associated with other eating disorders, such as binge eating or bulimia.
10. **Environmental factors**: The most important environmental factor is lifestyle. Our eating habits and activity level are partly learned from the people around we. Overeating and sedentary habits (inactivity) are the most important risk factors for obesity.
11. **Sex:** Men have more muscle than women, on average. Because muscle burns more calories than other types of tissue, men use more calories than women, even at rest. Thus, women are more likely than men to gain weight with the same calorie intake.
12. **Age:** People tend to lose muscle and gain fat as they age. Their metabolism also slows somewhat. Both of these lower their calorie requirements.

13. Pregnancy: Women tend to weigh an average of 4-6 pounds more after a pregnancy than they did before the pregnancy. This can compound with each pregnancy.

THE EPIDEMIC OF OBESITY

The worldwide epidemic of obesity is reaching critical proportions. An estimated 250 million people in the world are obese, and this number is predicted to reach 300 million by 2025.Obesity is a chronic disease that is caused by eating more calories than are expended. Obese people are, therefore, stigmatized. Obesity causes pathologic changes in the body: enlarged or hypertrophic fat cells produce associated clinical complications such as diabetes mellitus, gallbladder disease, hypertension, and some forms of cancer by releasing more free fatty acids, cytokines, and other products of fat cell metabolism.

As a major risk factor for a number of noncommunicable diseases, including diabetes mellitus, coronary heart disease, hypertension, osteoarthritis, gallbladder disease, and some forms of cancer, obesity merits a high priority for strategies for prevention and, where this fails, for clinical management. The increasing prevalence of obesity will have a major effect on health care costs. In addition to the direct costs, there are many indirect economic and social costs that are often forgotten. Obesity has joined the ranks of chronic diseases that have displaced undernutrition and infectious diseases as the major killers of people.

Preventive strategies are the primary tools to slow or reverse the worldwide explosion of obesity. This is where governmental research and demonstration projects are urgently needed. No matter how effective preventive strategies may be, however, there will still be a large pool of people who are already at risk of complications from their obesity and who need treatment. Viewing obesity as a multifactorial disease with distinctive pathologic and pathophysiologic processes provides a medical framework in which to consider treatment.

A major difference exists between obesity and other chronic diseases such as hypertension or atherosclerosis. The presence of obesity is evident to obese people as well as to casual observers—that of hypertension and atherosclerosis is not. Thus, the management strategies for treatment and secondary prevention of weight regain must be appropriate and safe enough for use by all overweight people, even those who may be without clear medical indications for intensive interventions such as drug treatment.

The problem of managing obesity needs to be tackled immediately. Although health care services for obesity exist in many countries, these tend to be located in cities (often in specialist hospitals), where people often have to pay for their treatment. This limits the service to the more affluent, depriving those in rural areas and people of lower socioeconomic status or those belonging to ethnic minorities of these services. Yet, people in lower socioeconomic groups have a high incidence of obesity.This group needs to be targeted for treatment but is being excluded by the health care system.

In some countries, health insurance companies pay for the treatment of obesity, but most insurance carriers in North America do not. Funding is a major consideration in the management of all chronic diseases, but this is complicated further in patients with obesity, a disease that is still not recognized as such in many countries.This is an area that urgently needs public and governmental action. An international obesity management strategy could provide a framework on which to base national guidelines for the management of obesity. Many political, attitudinal, cultural, and geographic factors need to be taken into consideration when implementing guidelines. Many government and health systems have a negative attitude to obesity, which highlights the need to raise awareness of obesity as a serious health condition.

A multinational campaign for people to "Know our body mass index" could be a first step in raising public and professional awareness of this global epidemic. When the ravages of hypertension and atherosclerosis were recognized, governmental programs were aimed at encouraging the public to "Know our blood pressure" and "Know our cholesterol" and to seek treatment when needed. Although many countries are starting to recognize the problem and to

take it seriously, much still needs to be done to prevent and manage obesity effectively. The vital link between the lack of funding and lower socioeconomic status will need special consideration in all strategies to manage obesity.

OBESITY MANAGEMENT

1. **Focus on health, not diets :** Diets are hard to stay on and usually don't work in the long run. It is very hard to stay with a diet that includes lots of big changes in our eating habits. Instead of a diet, focus on lifestyle changes that will improve our health and achieve the right balance of energy and calories. To lose weight, we need to burn more calories than we take in. We can do it by eating healthy foods in reasonable amounts and becoming more active. And we need to do it every day. Little steps mean a lot. Losing just 10% of our body weight can make a difference in our health.

2. **Make a plan for change :** Work with our doctor to create a plan that will work for we. Ask family members and friends for help in keeping with our plan. Ask our doctor to recommend a dietitian to help we with meal planning. When we stray from our plan, don't get upset. Figure out what got we off track and how we can fix it. It's hard to change habits. We have to be ready. Make sure this is the right time for we. Are we ready to make a plan and stay on it? Do we have the support of our family and friends? Do we know what our first steps will be? Becoming healthier and staying that way is a lifelong effort. Most people have more success when they make small changes, one step at a time. For example, we might eat an extra piece of fruit, walk 10 minutes more, or add more vegetables to our meals.

   Studies show that people who keep track of what they eat are better at losing weight. Keep a notebook where we can write down everything we eat and drink each day. We may be surprised to see how much we are eating. Use a calorie counter to add up our calories. (We can find calorie counters online and at bookstores.) As we keep track of calories, look at whether we skip meals, when we eat, how often we eat out, and how many fruits and vegetables we eat. Keep track of when we eat beyond feeling full and if we eat for reasons other than being hungry. This will help we see patterns that we may want to change.

   We may want to write down the amount of physical activity we've had each day and compare the calories we burned to those we took in. The foods we eat every day contribute to our well-being. Foods provide us with the nutrients we need for healthy bodies and the calories we need for energy. If we take in more calories than we burn, the extra food turns to fat and is stored in our bodies. If we overeat regularly, we gain weight, and if we continue to gain weight, we may become obese. Obesity results from the accumulation of excess fat on the body. Obesity is considered a chronic (long-term) disease, like high blood pressure or diabetes. It has many serious long-term consequences for our health, and it is a leading cause of preventable deaths in the United States (with tobacco use and high blood pressure). Obesity is defined as having a body mass index (BMI) of greater than 30. The BMI is a measure of our weight relative to our height.

   Obesity is an epidemic in the United States and in other developed countries. More than two-thirds of Americans are overweight, including at least one in five children. Nearly one-third are obese. Obesity is on the rise in our society because food is abundant and most of us are employed in positions that require little to no physical activity. On the bright side, recent data suggest that childhood obesity, while still high, may no longer be on the rise. Each year, Americans spend billions of dollars on dieting, diet foods, diet books, diet pills, and the like. Another $75 billion is spent on treating the diseases associated with obesity. Furthermore, businesses suffer an estimated $20 billion loss in productivity each year from absence due to illness caused by obesity.

3. **Self-Care at Home :** By decreasing daily calorie intake by 500 calories or expending an extra 500 calories during exercise each day, we will lose about 1 pound per week.

Decreasing our calorie intake by 10 calories a day will equal one pound of weight loss after one year. Any good diet plan will include exercise. It helps to increase metabolism and is one less opportunity to eat during the day. We should exercise for at least 30 minutes, five times a week. Regular exercise also helps our heart and lungs and lowers triglyceride levels that can cause heart disease. It also increases the HDL ("good cholesterol") levels. Even simple measures such as taking the stairs instead of the elevator and short walks eventually add up to a lot of calories burned. Commercial fitness programs such as Boot Camp can help we start or improve upon a fitness program.

4. **Other Therapy:** Behavior modification is a fancy name for changing our attitude toward food and exercise. These changes promote new habits and attitudes that help we lose weight. Many people find they cannot lose weight or keep it off unless they change these attitudes. Behavior-modification techniques are easy to learn and practice. Most involve increasing our awareness of situations in which we overeat so that we can stop overeating.

MEDICAL CARE FOR OBESITY

If we are obese, we should have a primary care physician who follows we closely and monitors we for the known complications of obesity such as diabetes and hypertension.

- If we are overweight or obese and don't know how to lose weight
- If we are concerned about the effects of a weight-loss diet or increased physical activity on our other medical problems
- If we are unsuccessful at losing weight on our own
- If we are concerned about the safety of our weight-loss method

1. **Diagnosis of Obesity (Weight-to-height tables) :** These tables give general ranges of healthy weights and overweight for adult height. The tables do not take into account individual conditions. For one thing, they do not distinguish fat from muscle, water, or bone. They are much less helpful than body mass index in identifying risk of health problems related to weight.

2. **Body fat percentage :** Many health professionals agree that percentage of body weight that is fat is a good marker of obesity. Men with more than 25% fat and women with more than 32% fat are considered obese. Body fat percentage is difficult to measure accurately, however. Special equipment is needed that is not found at most medical offices. The methods used at health clubs and weight-loss programs may not be accurate if not done properly. Inexpensive scales for home use that estimate body fat are now widely available. They may not be entirely accurate, but are generally consistent, so may be used over time to track one's progress. Waist measurement is also an important factor. People with "apple" shapes, who tend to put on weight around their waist, have a higher risk of obesity-related health problems. This includes women with a waist measurement of greater than 35 inches and men with a waist measurement of greater than 40 inches.

3. **Body mass index :** A measure called the body mass index (BMI) is used to assess our weight relative to our height. It is defined as weight in kilograms divided by height in meters squared (kg/m^2). It can also be calculated for weight in pounds and height in inches. Body mass index is closely related to body fat percentage but is much easier to measure. Therefore, it is used by many primary-care providers to identify obesity. The greater our BMI, the higher our risk of developing health problems related to excess weight.

To calculate our body mass index, follow these steps:

- Multiply our weight in pounds by 705
- Then divide by our height in inches
- Divide this by our height in inches again

- What does BMI tell we?
- Normal weight = 18.5-24.9
- Overweight = 25.0-29.9
- Obese = 30 or greater
- Morbidly obese = 40 or greater

Research shows the following health benefits for weight loss:

- Weight loss may improve survival in those who have an obesity-related disease, especially type 2 diabetes.
- Blood pressure decreases with weight loss.
- People with type 2 diabetes who lost weight had lower blood sugar levels and were able to use less medicine to lower their blood sugar levels.
- Sustained weight loss prevented new cases of type 2 diabetes in people who were obese.
- Weight loss makes it easier for we to breathe.
- People with obstructive sleep apnea who lost as little as 10% of their weight improved their sleep patterns and had less daytime sleepiness.

4. **Medical Treatment :** Medical treatment of obesity focuses on lifestyle changes such as eating less and increasing activity level. There are medications that can promote weight loss, although they work only in conjunction with eating less and exercising more. Most medications that promote weight loss work by suppressing the appetite. Some medications used in the past have been shown to be unsafe and are no longer available. The newer appetite-suppressing medications are thought to be safe, but they do have side effects and may interact with certain other drugs. They are used only under the supervision of a health care professional.

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