

OBESITY in USA

The 1999 results of the National Health and Nutrition Examination Survey (NHANES) indicate that an estimated 61% of U.S. adults are either overweight or obese. Between 1980 and 1999, the number of overweight U.S. adults aged 20-74 increased an estimated 2%, rising from 33% to 35% of the population. (based on NHANES II and NHANES 1999 data). In the same population, obesity has nearly doubled from approximately 15% in 1980 to an estimated 27% in 1999.

With such large increases in the numbers of overweight and obese people, it is no wonder that the American government is concerned. The two top national health objectives for the year 2010 are:

- 1- To increase the proportion of adults who engage regularly, preferably daily, in moderate physical activity for at least 30 minutes per day.
- 2- To reduce the proportion of adults who are obese.

But, do we really understand what overweight and obese mean?
Are we aware if we weigh too much (or too little) for our height? Are we really too fat or too thin?
Have we allowed ourselves to enter a "danger zone"?

WHAT IS OBESITY?

But, do we really understand what **overweight** and **obese** mean? Are we aware if we weigh too much (or too little) for our height? Are we really too fat or too thin? Have we allowed ourselves to enter a "danger zone"?

The truth is, many of us don't have the answers to these questions. Sure, our doctors have tried explaining it to us - in medical terms (which, we all know, the average person doesn't quite grasp in the same way a doctor does!). We hope that by the end of this section, you will better understand the definitions of these words, as well as the differences between a healthy weight and an unhealthy weight.

Probably, the easiest way to begin is by introducing you to the basics:

Body Composition is the make up of lean body mass and body fat in the body.

Lean body mass refers to your arm, leg, back, neck and abdomen muscles. It also includes your heart muscle, and the tissues of your other internal organs as well as water, and bone. Lean body mass is the part of your body you want to preserve or expand.

The quantity of lean body mass you have is the most important factor in determining your metabolism (the rate at which you burn the calories). The greater your lean body mass, the higher your metabolic rate and the more calories you will burn while sitting or lying down. A higher metabolic rate makes it easier to maintain your weight.

A regular program of strength training ("resistance" training) can increase the amount and the strength of your muscles. This, in turn, will also increase your metabolic rate.

Body fat is one of the basic components that make up the body's structure. Body fat has many important functions, including:

- 1- acting as a "storage site" for energy that is used when your body is active or in

times of illness or injury,

- 2- protecting your organs from injury, and
- 3- insulating your body, keeping it warm.

There are two categories of body fat: **Essential fat** and **Storage fat**.

Essential fat is necessary for normal, healthy functioning. It is stored in small amounts in your bone marrow, organs, central nervous system and muscles.

In men, essential fat is roughly 3% of body weight. In women, the percentage of essential fat is about 12%. This higher percentage also includes some sex-specific fat (believed to be critical for normal reproductive function) found in the breasts, pelvis, hips, and thighs.

Storage fat is the other type of body fat; it accumulates beneath your skin, in certain specific areas inside your body, and in your muscles. It also includes the deep fat that protects your internal organs from injury. Men and women have similar amounts of storage fat. Storage fat increases when you gain weight. It is what you want to lose when you lose weight.

Everyone requires a certain amount of body fat. It is desirable to have some storage fat due to the protective role it plays in your body, but most is considered "expendable". Too much or too little storage fat is unhealthy, and may lead to serious health risks.

What is the Healthy Range of Body Fat?

Ranges differ for men and women depending on their age. For the average adult, the healthy range of body fat is:

AGE (Years)	HEALTHY RANGE OF BODY FAT FOR FEMALES	HEALTHY RANGE OF BODY FAT FOR MALES
18-39	21-32%	8 - 19%
40 - 59	23 - 33%	11 - 21%
60 - 79	24 - 35%	13 - 24%

Professional and superior amateur athletes, however, often have a body fat percentage much lower than the average person. Body fat has been as low as 3.3 % in male marathon runners and as low as 14.5% in female Olympic swimmers.

OVERWEIGHT & OBESITY

Unfortunately, many people have too much body fat, increasing their risk for many diseases. To most people, the term obesity means to be very overweight. However, there is a distinction between the terms overweight and obese. They actually refer to different degrees of excess body weight.

Overweight - A person with a BMI of 25 to 29.99, or, who is between 25-30 lbs. over the recommended weight for a person's height.

Obese - The condition of being considerably overweight, refers to a person with a BMI of 30 or greater, or, who is at least 30 lbs. over the recommended weight for a person's height.

Important Note - Muscular athletes, i.e. - bodybuilders can be overweight without being obese.

CAUSES OF OBESITY

Obesity happens when a person consumes more calories than s/he burns. Reasons for this imbalance include genetic, environmental, psychological, and other factors.

1- **Genetic Factors** - Obesity tends to run in families, suggesting a genetic cause. Yet families also share diet and lifestyle habits that may contribute to obesity. Separating these from genetic factors is often difficult. Even so, science shows that heredity is linked to obesity.

2- **Environmental Factors** - Environment may also strongly influence obesity. This includes lifestyle habits such as diet and level of physical activity. The American culture tends to eat high-fat foods, and put taste and convenience ahead of nutrition.
And, most Americans do not get enough physical activity.

3- **Psychological Factors** - Many people eat in response to negative emotions such as boredom, sadness, or anger. Most overweight people have no more psychological problems than people of average weight. However, up to 10% of the mildly obese people trying to lose weight have binge eating disorder. This disorder is even more common in people who are severely obese.
During a binge eating episode, people feel they cannot control how much they are eating and eat large amounts of food. Those with the most severe binge eating problems are also likely to have symptoms of depression and low self-esteem. These people may have more difficulty losing weight and keeping it off than people without binge eating problems.

4- **Other Factors** - Some illnesses can lead to obesity or a tendency to gain weight: hypothyroidism, Cushing's syndrome, depression, and certain neurological problems.

Drugs, such as steroids and some antidepressants may also cause weight gain.

Your doctor can tell you if underlying medical conditions are causing the weight gain or making the weight loss difficult.

Who can become overweight or obese?

Just about anyone is at risk for being overweight; this includes men and women of all ages and races. Some people, however, are at greater risk than others.

Other studies have shown that obesity is especially prevalent among women with lower incomes and is more common among African American and Mexican American women than among white women. Among African Americans, the proportion of women who are obese is 80 percent higher than the proportion of men who are obese. This gender difference also is seen among Mexican American women and men, but the percentage of white, non-Hispanic women and men who are obese is about the same.

BODY FAT

And, just how is body fat measured?

A precise measurement of a person's body fat is not easy. The most accurate method is to weigh a person underwater - a procedure limited to laboratories with sophisticated equipment.

Two simpler methods may be used to estimate body fat, but they can yield inaccurate results if done by an inexperienced person or if done on someone with severe obesity.

The first is measuring skin fold thickness in several parts of the body. The second is via bioelectric impedance analysis - sending a harmless amount of electric current through a person's body.

Health clubs and commercial weight-loss programs normally use both of these methods, but results are not as accurate as underwater weighing.

Regardless of the method used, good results depend on the procedures followed, the accuracy of the measurements taken, and the assumptions of each method.

Since body fat measurements are not easy, doctors often rely on other means to diagnose obesity. Two widely used measurements are **weight-for-height tables** and **body mass index**. Both measurements have their pros and cons, but are reliable indicators of a weight problem.

Weight-for-height tables

Many of you may already be familiar with weight-for-height tables. Doctors have used them for decades to determine if a person is overweight or not. These tables usually have a range of acceptable weights for a person of a given height.

PROS

- Easy, simple and fast measurement.
- Tables were widely distributed.
- Millions of people were studied to develop the tables.

CONS

- The weights used are based on a select group of people who bought life insurance. These people tend to live longer, be healthier, and to weigh less than the general population.
- It does not take into account location of body fat.
- The tables do not distinguish body fat and lean body mass; a very muscular person may appear obese, when s/he is not.
- Information used to develop the tables tends to under represent people without insurance: minorities, the elderly and people who earn less money.
- Tables have not been updated since 1983.

Doctors disagree over which is the best weight-for-height table to use; numerous versions are available, all with different weight ranges. Some tables take a person's frame size, age, and sex into account; others do not. Still, weight-for-height tables are used as general guidelines to determine if a person is overweight or not.

BODY MASS INDEX (HOW MUCH SHOULD I WEIGHT?)

A relatively new term to people, **Body Mass Index (BMI)**, is the measurement of choice for many physicians and researchers studying obesity. The BMI is a mathematical formula based on a person's height and weight and is a helpful indicator of obesity and underweight in adults. The BMI is the most popular tool for defining healthy weight, overweight and obesity.

PROS

- Easy to look up on a BMI chart
- Many studies have identified the health risks associated with both high and low BMI's

CONS

- It can misclassify people
- It does not take into account location of body fat
- It can not accurately classify elderly people, who are frail and sedentary
- It can not accurately classify body builders
- It does not distinguish between body fat and lean body mass

The BMI is more highly correlated with body fat than any other indicator of height and weight. The relation between fatness and BMI is influenced by age and gender. For example, women are more likely to have a higher percent of body fat than men for the same BMI. At the same BMI,

older people have more body fat than younger adults.

BMI ranges are based on the effect body weight has on disease and death. BMI is used to screen and monitor a population to detect risk of health or nutritional disorders. On an individual basis, other data must be used to determine if a high BMI is associated with increased risk of disease and death for that person.

IDEAL BODY WEIGHT

The 1998 Clinical Guidelines on the Identification, Evaluation and Treatment of Overweight and Obesity in Adults, developed by the National Heart, Lung and Blood Institute, recommend the following classifications for BMI:

	Class	
Underweight		BMI less than 18.5
Ideal weight		BMI between 18.5 - 24.99
Overweight		BMI between 25.0 -29.99
Obese	I	BMI between 30.0 - 34.99
Obese	II	BMI between 35 - 39.99
Morbid Obesity	III	BMI greater than 40

Determine your BMI

Three ways to determine your BMI are:

1. A mathematical formula

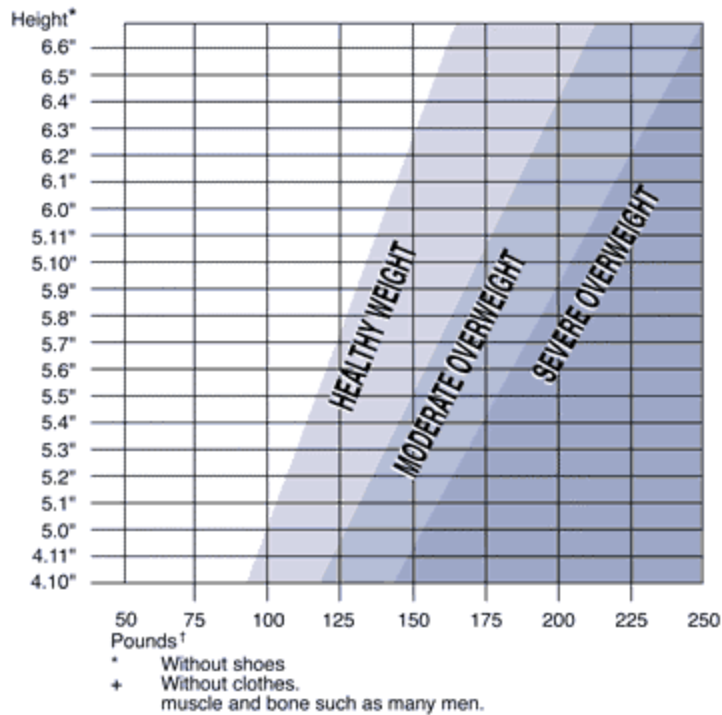
$BMI = [Weight \text{ in pounds} \div Height \text{ in inches} \div Height \text{ in inches}] \times 703$

or

$BMI = Weight \text{ in kilograms} \div [Height \text{ in meters}]^2$

2. Look it up on a BMI chart/table

Use the weight-for-height chart below to see if you are overweight. Find your height in the left-hand column and move across the row to find your weight. If your weight falls within the moderate to severe overweight range on the chart, you are more likely to have health problems. Weights above the healthy weight range are less healthy for most people.



Source: Report of the Dietary Guidelines Advisory Committee on the Dietary Guidelines for Americans, 1995 pgs. 23-24.

What happens when you gain weight?

Fully-grown adults gain both lean body mass and storage fat when they gain weight. The amount of fat gained usually far exceeds the amount of lean body mass gained (about 60 - 80 % fat and 20 - 40 % lean body mass). For instance, if you gain ten pounds, about 6 - 8 pounds would be fat and 2 - 4 pounds would be lean body mass.

This would mean increases not only in your fat tissue but also in your muscles, stomach, intestines and other organs, bone and water. These percentages would vary if you are involved in a training program specifically aimed at increasing muscle mass.

What happens when you lose weight?

When you lose weight, you lose water, lean body mass and storage fat. To prevent dehydration, it is important to drink water. From a health standpoint and to maintain your metabolic rate, it is better to preserve as much lean body mass as possible while you reduce your body fat.

How much fat and lean body mass should you lose when you lose weight?

Experts have determined that:

1. During the early weeks of weight loss, at least 75 % of the weight you lose should be fat loss and not more than 25 % should come from lean body mass.

2. As you continue to lose weight, especially if certain types of exercise are included in your weight loss plan, fat loss should be about 90 % of the weight you lose and lean body mass should be about 10 %.

And, now for a quick recap -

Body composition refers to the amount of lean body mass and body fat in your body. **Lean body mass** is what you want to preserve or expand. The quantity of lean body mass you have is the most important factor in determining your **metabolism** (the rate at which you burn the calories).

Body fat stores energy, protects your organs from injury, and insulates your body, keeping it warm. Everyone requires a certain amount of body fat, but most fat is considered "expendable".

An **overweight** person has a BMI of 25 to 29.99, or is between 25-30 lbs. over the recommended weight for a person's height.

An **obese** person is considerably overweight, with a BMI of 30 or greater, or is at least 30 lbs. over the recommended weight for a person's height.

Reasons for obesity include genetic, environmental, psychological, and other factors.

Just about anyone is at risk for being overweight; men and women of all ages and races.

Obtaining body fat measurements has up to now been tricky so doctors rely on other means to diagnose obesity. **Weight-for-height tables** usually have a range of acceptable weights for a person of a given height. **Body Mass Index (BMI)** is a mathematical formula based on a person's height and weight; it is the most popular tool for defining what is healthy weight, overweight and obesity today. BMI is used to screen and monitor a population to detect risk of health or nutritional disorders.

REFERENCES

<http://www.cdc.gov/nccdphp/dnpa/obesity/trend/index.htm> - Obesity Trends, The National Center for Chronic Disease Prevention and Health Promotion (CDC)

<http://www.cdc.gov/nchs/nhanes.htm> - National Health and Nutrition Examination Survey (a survey conducted by the National Center for Health Statistics - NCHS).

Source: www.Weight-Loss-Medicine.com