

Body Composition: Healthy Under the Skin

Contributed by Bodytrends Health and Fitness
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The cover of a book is not always accurate, and just looking at the scale does not always tell you what is in those pounds. While weight is important to many people, a better measure of how healthy and fit you are is body composition, or the basic ratio of muscle to fat.

Most experts recommend fat calipers, body fat scales, food scales and blood pressure and personal care products as tools to achieve their individual goals.

Body Composition Not Weight

Your total weight is a combination of bone, ligament, tendon, organs, fluids, muscle and fat. When you lose or gain weight due to either optimal fitness programs or not taking care of yourself, then both your overall weight will probably change, as well as the ratio of these components to one another. Exercise scientists have coined the term "body composition" to define the relationship between all the lean tissue in the body and fat. One of the most difficult yet important concepts that help you on your wellness and fitness journey is the relationship of lean mass to fat mass. It is not uncommon for someone to begin a nutrition and exercise program and not see a change in total weight, but to see an increase in muscle and see a decrease in fat and inches. You may find that how you look has a strong correlation with how much muscle you have and not what you weigh! Because muscle weighs three times more than fat per unit of volume, as you exercise, you gain muscle, and could be smaller physically, but easily weigh more.

As you pursue a personal health and fitness program, the distinction between being overweight and over-fat is important. Standard height and weight charts are based upon averages and ranges for age and sex. As an active person if you lift weights three times per week or go on regular hikes you will gain more muscle from these vigorous activities. If you maintain the same diet, both in total calories or energy and what's in those calories, but don't add that vigorous exercise, then your body composition will be different. In all likelihood, you will have a much higher level of fat, and lower level of muscle.

Psychologically, this is difficult for new exercisers to understand as the scale in modern society has so much mental impact. Remember, while total weight may be important, it does not tell the relationship between the two most important components, muscle and fat.

Technically, a normal-sized person has between 30 and 35 billion fat cells. When a person starts losing weight, the fat cells decrease in size but the number of fat cells generally stays the same. Once weight is gained, it is difficult to lose because the fat cells essentially shrink in size. However, some studies published seem to imply that fat cells can be destroyed as a result of certain medications and that a decrease in fat cell number may occur if a lower body weight is maintained for a prolonged period of time. The habit of maintaining a healthy body composition level may lead to a permanent body composition level.

Body Composition Determines Health

From the impact on your health, excess fat is not only unsightly, but it also lowers your self esteem. More important than being over-fat, or having a higher than desirable ratio of fat to muscle, fat has a demonstrated negative effect on your health. According to current estimates, at least 40-45% of the population is significantly overweight, and this increasing number indicates that the battle of the bulge is not being won but lost. By some estimates, a significant percentage of the population is obese, the clinical term which simply means that body fat percentage is at a level where significant physical and health effects occur. Many health experts define obesity as being 20% above your desired weight, or as a body fat percentage of 20% or higher for men, and 30% or higher for women. While not all health experts agree upon what level is exactly obese, at least 30% of the population falls within these clinical definitions of obesity.

At this level of body fat percentage, a person will have difficulty with basic exercise, such as walking or performing domestic chores. The problem is intensified because the person who needs the exercise most can't complete significant, physical exercise, which is regular and sustainable for physical benefit. High body composition levels also impact injury potential. At this level of body fat percentage, the incidence of injuries and maladies to knees, backs, and ankles, the major support structures, is almost three times that of people with just average body fat percentages. The impact of excess body fat is important to your health as both a direct and indirect cause of serious medical conditions.

Being significantly over-fat is a demonstrated, single risk factor for Coronary Heart Disease (CHD), still the number one

killer. Being over-fat is also a significant risk factor in type II diabetes, which is a significant and debilitating health problem. Being over-fat relates to general lifestyle and activity patterns, as the exercise patterns of individuals in this group are generally significantly less than those with just average body fat. If you don't get regular and vigorous exercise, you simply don't build your HDL or good cholesterol, which in turn leads to a reduction of the risk of heart disease. Without regular exercise, stress levels don't decrease, and not only is that a risk factor for heart disease, but other stress-related diseases and conditions such as high blood pressure and cancer.

Clearly, being over-fat has a tremendous impact on people mentally, physically and medically. The good news is, like blood pressure, it is now easier than ever for you to accurately and regularly check your body composition level. Medically. The good news is, like blood pressure, it is now easier than ever for you to accurately and regularly check your body composition level.

Don't make the mistake of thinking that if less body fat is generally good, then a zero % percentage is ideal. The body uses fat for a number of essential functions including insulation, organ cushioning and nerve conduction. For men, below three percent is considered a health risk, and for women, less than seven percent has negative health implications.

The Scale Tale

When you jump on the scale next time, you are looking at your total weight, not the relationship of fat to muscle. Most new exercisers are surprised to learn that muscle per unit of volume is three times more dense, or heavier than the same amount of body fat. Muscle is also active tissue, in that any muscle you build from exercise will be active all day long in burning more calories. If you are serious about weight loss, then maintaining and building muscle from exercise needs to be a priority. If you are pursuing a weight loss program at the urging of your physician or other health professional, this concept, and the measurement of body composition may be key to your long-term success. If you go by just the scale, as you continue with your exercise program, you may not see a change, yet internally you may be gaining muscle and losing fat weight. It is not uncommon for men to report going down a pants size and women going down two dress sizes while their total weight actually increased.

The type of exercise program you pursue is also important. Aerobic or distance exercise is to maintain lean body mass or muscle. Anaerobic or higher intensity exercise such as weight training tends to build muscle. If you trying to lose weight, it may be the best thing you can do initially is build more muscle from higher intensity activities so you have a bigger muscular engine to burn more calories.

The Body Composition Scale

When you measure your body composition, and begin to study the numbers, and make lifestyle changes, remember these important concepts:

- Being "average" in body composition is not necessarily healthy, as the overall population is more over-fat than 25 years ago, so a desirable situation is to have slightly less than an "average" body fat percentage.
- There are individual variations in what is ideal body fat for any given person with regard to heredity, lifestyle and activities/sports.
- Body composition can change without total pounds changing, you simply add muscle with exercise while losing fat weight.
- When people diet without exercise, a large part of the weight loss is from the loss of muscle, which is both unhealthy and temporary since it leads to weight gain once the diet is over, so it's important on any type of weight loss program to monitor the ratio of fat weight to lean weight as well as the amount of both fat weight and muscle weight. o Body composition changes from an exercise and nutritional modification program generally take almost two weeks to be measurable, so remember body composition that changes slowly is more likely to be maintained than rapid weight loss.
- Body composition or body fat scores normally trend upward with age, yet that is the result of our adult population being less physically active than in the past, and in actuality, many health experts feel the age-related rise is unhealthy.
- Always check with your physician or other health professional before starting any exercise program, including a weight loss program, especially if you are over 40, have significant risk factors for heart disease, or have symptoms of heart disease.

Normal body fat percentages, or those associated with no increased risk for disease are generally 12-20% for men, and

16-25% for women. Athletes in endurance sports-or those sports where total weight versus muscular strength or power is important, such as gymnastics have much lower desirable body fat percentages. It is important to note that no two people look the same even though they have the exact same percentage of body fat. Some people maintain more of an elongated muscular look, while others with the same body fat percentage may look more muscularly defined. Individual body make up and genetics mediate how you will look at any certain percentage of body fat.

Measuring Your Composition

Exercise scientists have devised a number of means to estimate the amount of fat-free mass versus fat mass. Remember, each type of measurement is only as good as the observation of the rules/guidelines associated with that particular testing procedure.

One of the methods used extensively on athletes over the last 15 years is that of hydrostatic, or underwater weighing. Because fat is less dense than bone or muscle, it is possible with weighing the subject in water, and knowing the density of muscle and fat compared to water, to estimate the amount of body fat. However, there are drawbacks to this system including time, finding a tank and a trained technician, and feeling comfortable emptying your lungs of air so you can be weighed. Some studies have demonstrated that for people with comfort in the water, this test can be accurate, whereas for those without comfort in the water, the test loses validity.

Another common method used in weight loss centers and health clubs is that of measuring skin fold thickness on certain parts of the body, and then estimating body fat from those measurements. While relatively accurate, these readings work best with a trained technician, the same technician who performs repeated tests, and with subjects with average t or less-than-average body fat. Two more recent developments, that of waist to hip ratio and body mass index (BMI) have promise, yet in certain cases can be difficult to self-administer and interpret.

Electrical impedance estimates body fat from body water, as different tissues such as muscle and fat, have different amounts of water, and therefore cause a difference resistance to this very weak current sent by the analyzer. This is the principle used in the Omron Body Logic Body Fat Analyzer. Like other estimation/measurement methods, if you adhere to the simple rules for analysis, this technique can be extremely accurate. In addition, since you are using technology which is fixed, and don't have to rely on a test technician, you can repeat this test in the test in the comfort of your home, office or athletic club on any schedule you determine.

Getting the Most From Your Body Logic Analyzer

Like other forms of technology, you will obtain more accurate results if you observe the following principles:

- Keep the equipment clean, away from abrasive chemicals and excessive heat or cold to ensure proper functioning.
- Always turn the unit off when not in use to preserve battery life.
- If you have a pacemaker, medical support equipment or any other electronic equipment attached to your body, operation of the analyzer may cause a malfunction of the equipment.
- Take measurements at the same time of day, not when you have finished exercising, or are over- or under- hydrated.
- Conditions such as alcohol consumption, pregnancy, bathing, respiratory illness, being elderly and other conditions listed in the Body Logic Analyzer instruction booklet change the amount of water content in the body and demonstrate varying bone density. This will not change the relative value obtained from the Analyzer, yet may not provide a true indication of body composition for these reasons.
- Record your body composition scores and use those in conjunction with your physician and supervising health professional to monitor the effects of your exercise and nutritional program.

Changing Your Body Composition

To see positive changes in your body composition requires a change in your lifestyle, not a one-time dose of exercise and good nutrition. Changes that occur slowly are generally those that you will then maintain for the rest of your life. Many health experts feel that a total weight loss of one to two pounds per week is best in order to maintain a healthy body fat percentage once you have reached your target goal.

As you exercise, you are likely to gain weight at first as muscle weighs three times more per unit of volume than fat. From a long-term health and weight loss perspective, building more muscle is ideal because muscle is active tissue that burns more calories at rest or during exercise. No matter which form of measurement you use for body composition, it's important to periodically check your progress and results. Shop for body fat measuring tools now at Bodytrends.com.

Always check with your physician or other health professional before starting any exercise program, especially if you are over 40, have significant risk factors for heart disease, or have symptoms of heart disease. Also, if you experience any of the following conditions, even once while starting an exercise program, stop and consult with your personal physician before continuing. These conditions include but are not limited to any abnormal heart action such as an irregular pulse; pain or pressure in the middle of chest, arm or throat; dizziness, lightheadedness, sudden loss of coordination, confusion, fainting or blueness.