As both a personal trainer and nutrition coach, my clients are always infatuated by the idea of seeing the number on the scale go up or down, dependent upon their goal, as the staple measurement of progress. So much so, that after working with me for 8, 12, and even 24 weeks they somehow feel they have failed, or that I have failed, if the number on the scale isn’t drastically different. I mean, can you blame them? We all work so hard and even though we may see physical changes in our body throughout our regiment, we want that quantitative measurement of reassurance that our efforts had paid off. Well maybe the number on the scale shouldn’t be your end measurement for real progress. Maybe it should just be used as a unit to a more important number; body fat percentage.

 Body fat percentage is the amount of fat mass to lean mass your body holds. This crucial number can help eliminate multiple confounding variables that the scale fails to consider and is a great tool to use to set baseline and future body compositional goals. For example, if you were to take two males that were of equal height and of equal weight, you could have two drastically different looking body compositions if body fat percentage was significantly different. Therefore, can it not be concluded that body fat percentage is a much more reliable source of progress than simply what the scale tells you? You may find that for your body, you look amazing at a weight that is much higher than what you initially set out to achieve through the process of added muscle and less body fat. So how do you measure body fat?

A quick online search will reveal that there are a plethora of ways to measure your body fat; ranging from quick methods commonly found at your local gym or supplement store to extensive measurements that may require you to go to a lab and cost you quite a bit of money. Another consideration you must take in, is the effectiveness of being accurate and consistent. While some quicker methods might be free, their ability to be accurate can range much more than extensive methods. In efforts to help you navigate through your options, read through the 5 most popular techniques explained how they work as well as the pros and cons of each!

**Skin Calipers:**

Assuming you can handle a few pinches, skin caliper testing is one the most popular and accessible methods of testing body fat. It can be performed by yourself or a personal trainer at your local gym using a skin caliper tool. The skin calipers usually test 3, 4 or 7 sites of skin by measuring the thickness of each pinched site. Specific areas that are measured include; thighs, triceps, abdominals, mid-back, and chest. The measurements are then tallied into a formula that will calculate your body fat percentage.

**Pros:**

Cost of use & accessibility:

Skin calipers are extremely cheap at about $10, or even free, if you ask the front desk at your local gym! Testing yourself or having a personal trainer test you is simple and takes no longer than 5 minutes

Quick and effective:

With the cheap cost and accessibility, skin calipers are great to test body fat if you are starting a diet regiment where you plan on testing body fat on a regular basis.

**Cons:**

Increased risk of user error:

 If you or the person assisting you pinches differently each time, or not at the exact same spot, you could have inconsistent readings.

Body fat distribution error:

 Since the calipers only take into consideration specific sites on the body, your percent total can read high or low depending where you genetically store fat.

**Bioelectrical Impedance:**

With the word “electrical” in the name, you might be hesitant to utilize this method, but rest assured you are not going to feel a thing! This method works by sending small electrical pulses throughout the body to measure how much resistance of flow is received and based on how quickly they return, will analyze your body fat percentage based on total body water. So how does that tell me my body fat percentage? Muscle conducts a faster response time than fatty tissue, so the quicker the electrical impulses returns, the more muscle, relative to fat mass, the person has. You may have seen this method at your local gym in the form of handheld sensors or even your scale at home has metal plates where you place your feet.

**Pros:**

Affordable:

 While not as cheap as skin calipers, both handheld and weight scales with bioelectrical impedance are very affordable at about $30.

Ease of use:

 As long as you know your height, weight, age, and gender, most bioelectrical impedance devices are very straightforward to use and can be checked in mere seconds.

**Cons:**

Inaccurate readings:

 While the bioelectrical impedance method can be extremely quick to check your body fat, be weary of encountering the issue of possible variables that disrupt accuracy. Since water conducts electricity, hydration, or lack thereof, can affect the reading as well as meal frequency, and physical activity. Bioelectrical impedance tends to give understates of body fat percentage so in order to combat these variables, it’s best to utilize this method first thing in the morning and to consistently check at the same time.

**Hydrostatic Weighing:**

If you see the word “hydro” and associate it with water, you are correct. Hydrostatic weighing is a method used where the participant is submerged under water and weighed. This weight is compared to their normal weight and calculated with considerations of the density of water. The procedure is based on [Archimedes' principle](https://en.wikipedia.org/wiki/Archimedes%27_principle), which states that: The buoyant force which water exerts on an immersed object is equal to the weight of water that the object displaces. Since body fat is less dense than lean body mass, a person with a higher percent of body fat will be more buoyant than an individual with more muscle.

**Pros:**

Extremely accurate:

 Often considered the “gold standard” of measuring body fat percentage

**Cons:**

Inconvenient:

 Hydrostatic weighing is a method that involves a lab, hospital, or specialty center so unless you are in absolute need of a very accurate reading, this method might not be worth the time

Costly:

Unlike the two previous methods, hydrostatic weighing can cost you $50 or more dollars for a single reading

Uncomfortable:

With great accuracy, comes great discomfort. In order to yield accurate results you have to forcefully exhale before being completely submerged in a tank of water. For those who are fearful of water, this option might not be for you.

**DEXA (Dual-Energy X-Ray Absorptiometry):**

DEXA scanning involves the use of X-Ray technology through measuring the absorption of high and low energy ray beams. A participant lays still on a table as a machine arm passes over the body. Since the machine arm scans each body part individually, segmental body fat percentage is available based on amount of absorption.

**Pros:**

Extremely accurate:

 Similar to hydrostatic weighing, DEXA scanning is superior in accuracy to skin calipers and bioelectrical impedance.

Procedurally quick:

 The entire procedure of DEXA scanning takes only a few minutes and unlike hydrostatic weighing, does not require submersion of water.

**Cons:**

Inconvenient:

 Similar to hydrostatic weighing, DEXA scanning requires special equipment that can require scheduling an appointment at a special facility

Costly:

 DEXA scanning can range in pricing, but is not uncommon to cost around $100 or more for a single reading

**Air-Displacement Plethysmography:**

Very similar to hydrostatic weighing, air-displacement plethysmography utilizes air, opposed to water, as its medium of measurement. Participants sit in a spaciously enclosed pod and air-displacement, hence the name, is measured.

**Pros:**

Accurate:

The accuracy of air-displacement is equal to hydrostatic weighing, allowing for optimal readings

More comfortable hydrostatic weighing:

Air-displacement replaces the need of water as the medium to measure body composition, allowing for a much more comfortable experience for the user. No holding your breath and no water submersion!

**Cons:**

Hard to find:

 Similar to the two previously mentioned methods, air-displacement is a more advanced method of measuring body composition which makes it sparser to find.

Costly:

 Air-displacement will cost roughly $50 to have performed, which may turn away those who plan to check their body fat on a regular basis.

The Bigger Picture:

While having the ability to test your body composition through body fat measurement techniques such as the five listed above, it’s important to be realistic with any goals and expectations you may have in changing your body composition. Body fat percentage is not always directly correlated with overall health. Simply because an individual has a low body fat does not mean they are healthier than someone with a higher value. Yes, we should aim to be within a healthy range as it reduces the risk of heart disease, heart attacks, strokes, and nearly any medical complication, but overall health includes both physical and mental health. Similar to the risks of consuming yourself with the number on the weight scale, if you become obsessed to see a specific percentage of body fat, you jeopardize mental health. It’s important to note as a final comment, that as does excessive high body fat can cause health issues, having too low of a body fat can be detrimental in its own right. Utilize body composition measurement techniques responsibly by discussing your ideal range with a healthcare professional and set healthy and realistic goals to achieve them! For additional help in finding your ideal body fat composition as well as creating a healthy and balanced diet, feel free to reach out to me or any of our ambassadors on Healthost.