

Free eBook

MEASURING FITNESS



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WEIGHT VS BODY FAT

"YOUR WEIGHT IS NOT YOUR HEALTH."

When most people consider beginning an exercise plan or diet, they usually do this in an effort to lose weight. However - although there is nothing wrong with losing a few extra pounds - it is important to remember that your weight is not your health.

Body Fat Percentage

Body fat percentage is the total mass of fat divided by total body mass, multiplied by 100. Basically, how much of your body is fat. The word "fat" has a bad reputation, so you might think we want this number to be as low it can be. Well, no. Your body contains three main categories of fat: essential fat, subcutaneous fat and visceral fat.

Essential fat is exactly that — essential for your life and a healthy body. This is found in your brain, bone marrow, nerves and even the membranes that protect certain organs. We don't want this to go away. It is the other two that we want to keep in check.



Subcutaneous refers to the fat stored under the skin. This makes up the majority of our body fat. It's the stuff that you can squeeze or pinch on your arms, belly, thighs and butt. This fat is normal and healthy, in the right amounts, but too much can cause some issues.

Visceral fat, aka "belly fat," is stored in your abdomen and around major organs like the liver, kidneys, pancreas, intestines, and heart. Too much of this can leave you at risk for diabetes, heart disease, stroke, artery disease, and some cancers.

According to the American Council on Exercise, an adult woman's percentage should be somewhere between 20-30% (10-13% comprised of essential fat), and an adult man should be somewhere between 10-20% (2-5% comprised of essential fat).

But, a heavier scale doesn't mean a higher BFP.

Weight vs Body Fat

Although they are typically correlated, it is possible to increase weight and lower body fat percentage - and vice versa. As an extreme example, imagine a body builder. They may be tipping the scales well above their recommended body weight, but that isn't because of fat. Most likely, they have a lower body fat percentage than a lot of gym goers.



On the other extreme, imagine an inactive individual on a radical diet. Perhaps they avoid most proteins and carbs, eat on a wildly irregular schedule and rely on this to keep their weight down. They may see low numbers on the scale, but that doesn't mean they have lost fat. They most likely see this outcome from losing muscle. This is why it is important to remember that your weight is not your health, and it is certainly not your BFP.

HEART RATE

"FOR A MEASUREMENT TO BE TRULY HELPFUL, WE NEED TO UNDERSTAND IT."

Your heart rate. You may remember learning how to find it gym class, but how much do you really know about it? Maybe your Fitbit, Apple Watch or other smart device tracks it for you - but so what? For a measurement to be truly helpful, we need to understand it. Luckily, I do, and I am here to help.

Resting Heart Rate

Your resting heart rate is just that, the rate of your heart while you are inactive. Studies have shown that an elevated resting heart rate can double, and even triple your risk for death. With such strong correlations, it is certainly something to pay attention to. So what are the numbers we want?

- Between 60 and 100 beats per minute is normal
- A healthy, relaxed adult should be under 90
- An adult that exercises regularly or an athlete will likely be between 40 and 60 (40 being high-level fitness)

Max Heart Rate

The maximal heart rate estimation is a tool used by health and fitness professionals to effectively prescribe aerobic exercise. This variable is needed for calculating your target heart rate that we will touch on in a few moments.

There are several formulas used to calculate your estimated max heart rate based on your level of fitness and/or age, but the most common method is to subtract 220 by your age.

Target Heart Rate

Your target heart rate, simply put, is the value or range that you should be aiming for in your aerobic exercise in order to workout at different intensities. Target heart rate is generally expressed as a percentage (usually between 50 percent and 85 percent) of your maximum safe heart rate.

A combination of moderate (40%-59% intensity) and/or vigorous (60%-84% intensity) exercise is recommended for most healthy individuals.



BLOOD PRESSURE

"HIGH BLOOD PRESSURE IS THE MAIN RISK FACTOR FOR CARDIOVASCULAR DISEASE."

You have most likely heard the term “high blood pressure” at least once in your life, whether it was coming from a family member, physician or maybe in a drug commercial. High blood pressure, or hypertension, is the main risk factor for cardiovascular disease. With over 600,000 Americans dying from cardiovascular disease every year, it is critical to understand the importance of your numbers and how they can be improved.

Simply put, blood pressure is the pressure of the blood within the arteries. It is produced primarily by the contraction of the heart. Its measurement is recorded by two numbers: 1. Systolic Pressure (The top number) and 2. Diastolic Pressure (The bottom number). Problems usually arise when blood pressure levels deviate too far from a healthy normal highlighted below.





High Blood Pressure

Your blood pressure needs to be at a balance. When it is too high, the lining of your arteries becomes damaged and less elastic. This causes a decrease in blood flow and oxygen to the heart. A symptom of this decrease is angina, known as chest pain. High blood pressure can also cause atherosclerosis, the clogging of your arteries that can result in a heart attack or a stroke. Some factors that can cause high blood pressure include : lack of physical activity, too much salt in your diet, sleep apnea, smoking, drinking, age or being overweight.

Low Blood Pressure

While hypertension is a very serious concern, we must also keep in mind that hypotension can be problematic as well. Most doctors consider blood pressure too low only if it causes symptoms. Symptoms include dizziness or a lightheaded sensation, nausea, fainting, dehydration and unusual thirst. Some experts define low blood pressure as readings lower than 90 mm Hg for your top number or 60 mm Hg for your bottom number. What is considered low blood pressure for you may be normal for someone else.

According to the American College of Cardiology your blood pressure readings can fall between the following categories:

- Normal: Less than 120/80 mm Hg;
- Elevated: Systolic between 120-129 and diastolic less than 80;
- Stage 1: Systolic between 130-139 or diastolic between 80-89;
- Stage 2: Systolic at least 140 or diastolic at least 90 mm Hg;
- Hypertensive crisis: Systolic over 180 and/or diastolic over 120

VO₂ MAX

"UNDERSTANDING YOUR LIMITS AND MAIN SOURCES OF ENERGY CAN BE CRITICAL."

VO₂ Max may or may not mean anything to you, depending on your exercise and fitness background. If you're a person who is just starting an exercise program or has been exercising casually, the term might be new. If you're a current or retired athlete, you probably already know VO₂ Max is an important number that reflects how efficient your cardiovascular system is.



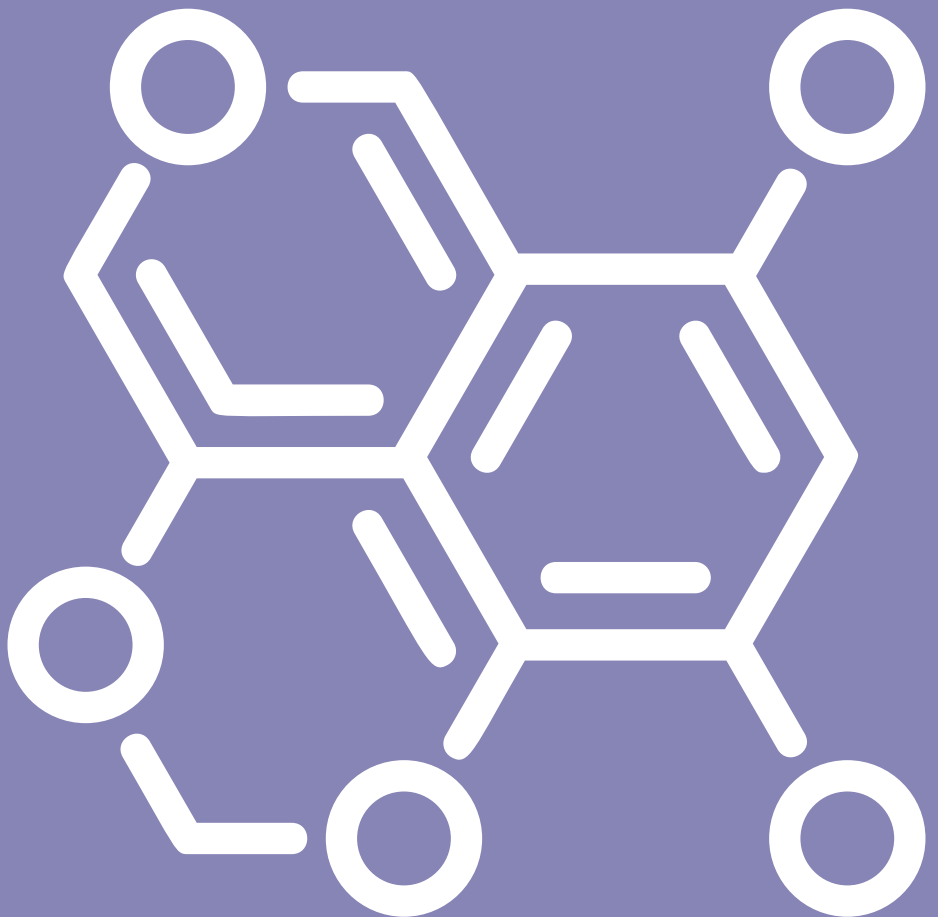
VO₂ Max Background

The most reliable way to obtain your VO₂ Max results is by having a Max Test done. Commonly conducted in an academic lab by an Exercise Physiologist like myself, the Max VO₂ test measures the volume and content of each breath while exercising at maximum intensity. The test defines the upper limits of your cardiovascular function, measuring variables such as your ventilation, maximum breathing capacity, oxygen uptake and carbon dioxide produced.

Intensity and Energy Source

The coolest part about the VO_2 Max Test is that it can determine which macronutrient substrate (fat, protein, carbohydrate) your body is using for fuel during physical activity based on intensity. Carbohydrates, fat and protein are all necessary in energy metabolism. The macronutrient used for energy at a given time, depends on the intensity of the exercise and changes from person to person.

The VO_2 Max test allows us to estimate which particular fuel (carbohydrate, fat or protein) is being oxidised by calculating the Respiratory Exchange Ratio (RER). RER is the ratio of carbon dioxide produced to oxygen consumed, and is known as the Respiratory Quotient. An RER of .7 indicates that fat is the main source of energy, and an RER of .85 indicates that the protein substrate is being used, and finally, an RER of 1.0 indicates that carbohydrates are the main source of energy.



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