

## Change Your Body Boot Camp's

### Measurements and Exercise Testing: What does it all mean?

#### Heart Rate:

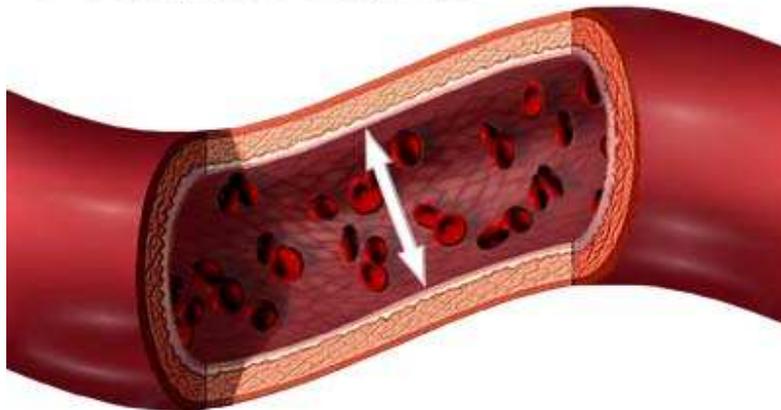
The *normal healthy resting heart rate range is between 60-80 beats per minute*. According to the American Heart Association, resting heart rate usually rises with age and is generally lower in physically fit people.<sup>6</sup>



#### Blood Pressure:

“Blood pressure is the pressure of the blood against the walls of the arteries.

Blood pressure is the measurement of force applied to artery walls



ADAM.

Blood pressure results from two forces. One is created by the heart as it pumps blood into the arteries and through the circulatory system. The other is the force of the arteries as



"Cut down on smoking, drinking, meat, sugar and get out of the stockmarket."

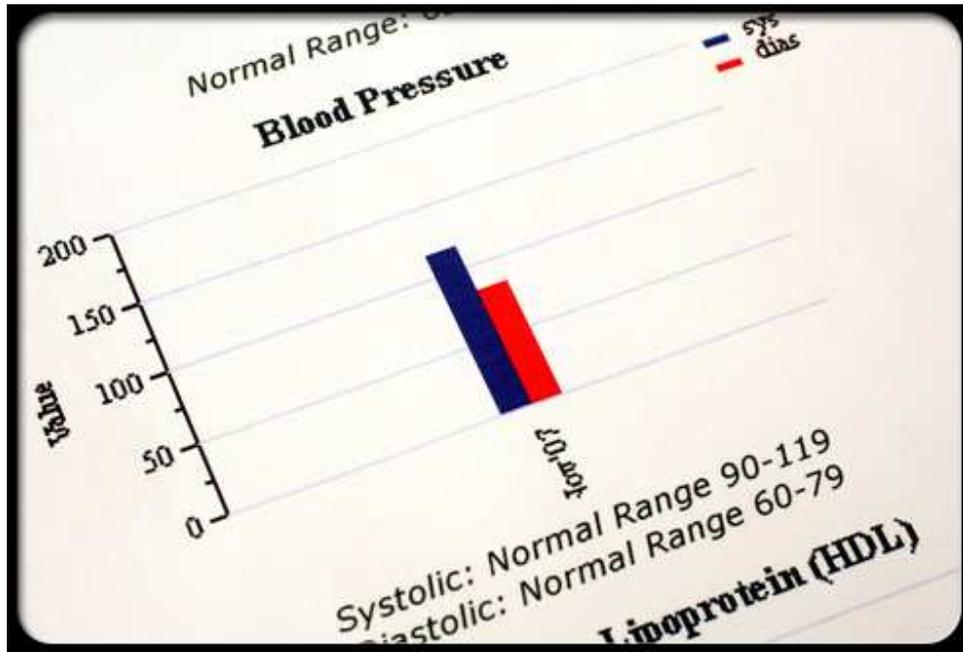
they resist the blood flow.

### What do blood pressure numbers indicate?

- The higher (systolic) number represents the pressure while the heart contracts to pump blood to the body.
- The lower (diastolic) number represents the pressure when the heart relaxes between beats.

The systolic pressure is always stated first. For example: 118/76 (118 over 76); systolic = 118, diastolic = 76.

*"Blood pressure below 120 over 80 mmHg (millimeters of mercury) is considered optimal for adults. A systolic pressure of 120 to 139 mmHg or a diastolic pressure of 80 to 89 mmHg is considered 'prehypertension' and needs to be watched carefully. A blood pressure reading of 140 over 90 or higher is considered elevated (high)."*<sup>4</sup>

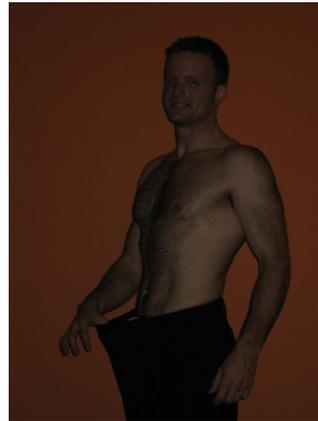
**Photo:**

A photo provides immediate feedback of what you looked like before participation and what you look like after.

**Height:**

Many measurements require a person's height for accuracy. Two examples are body fat percent and body mass index.

**Dress Size / Pant Size**

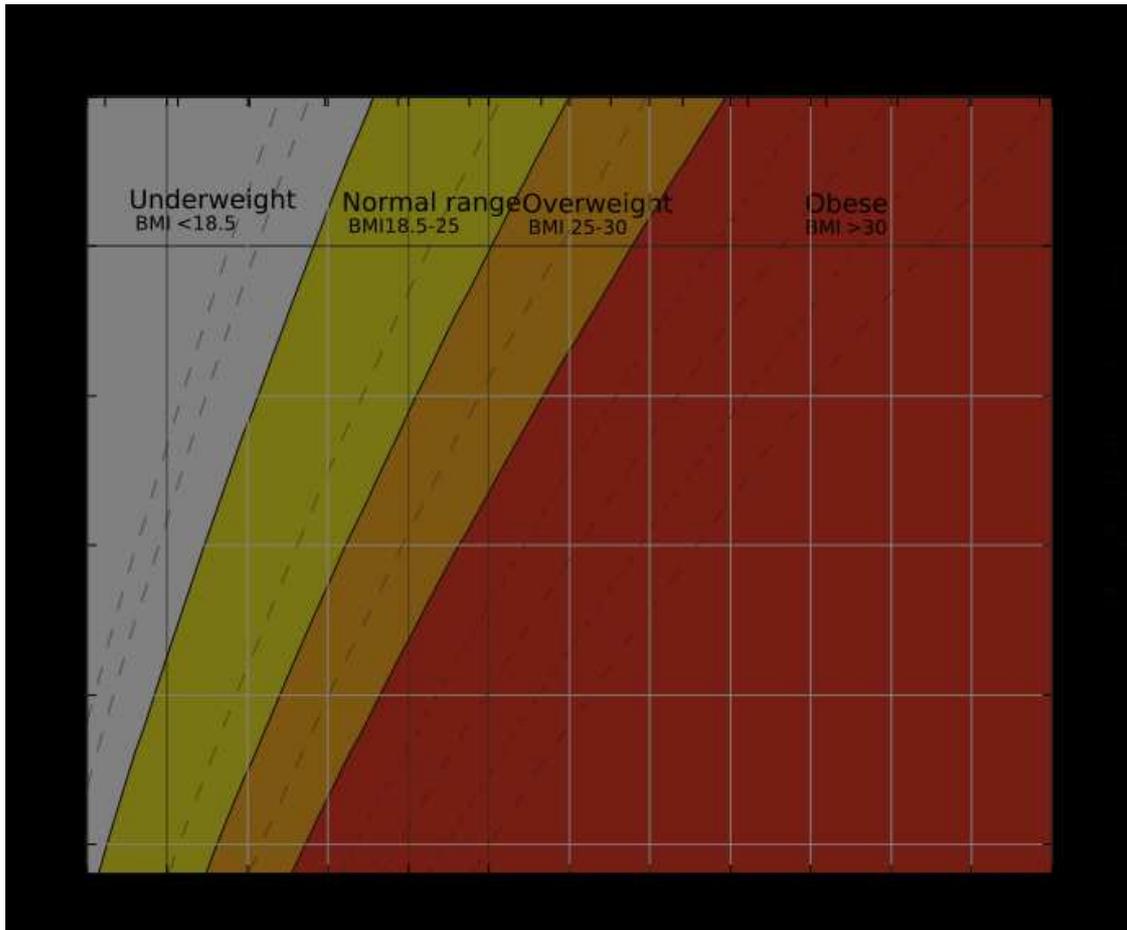


Recording dress size / pant size is a measurement most people can understand and relate to. They remember what their pant/dress size was in high school, in their 20's, 30's... and before participation.

## **BMI**

BMI stands for Body Mass Index. It is a measure of your weight in lbs divided by your height in inches. That number is divided again by your height in inches and then multiplied by 703. BMI is useful because a healthy weight for one person may be an unhealthy weight for another. A body weight of 180lbs would be ok for someone who is 6 feet tall, but not ok for someone who is less tall.

- BMI values less than 18.5 are considered underweight. Chances for death depend on whether you're physically active or not or if your low weight is a result of a diagnosed or undiagnosed disease that could lead to death.<sup>7</sup>
- BMI values from 18.5 to 24.9 are healthy.
- Overweight is defined as a body mass index of 25.0 to less than 30.0. A BMI of about 25 kg/m<sup>2</sup> corresponds to about 10 percent over ideal body weight. People with BMIs in this range have an increased risk of heart and blood vessel disease.
- Obesity is defined as a BMI of 30.0 or greater (based on NIH guidelines) — about 30 pounds or more overweight. People with BMIs of 30 or more are at higher risk of cardiovascular disease.
- Extreme obesity is defined as a BMI of 40 or greater.<sup>2</sup>



### Body Fat Percentage

Body Fat Percentage is the percent of your body mass that is fat mass and not water, muscle or bone (lean mass). Too much body fat, especially around your midsection increases your risk for high blood pressure, high cholesterol and diabetes which can lead to heart disease and stroke.<sup>2</sup> Excess body fat also contributes to a slow metabolism, low energy and a potentially less than favorable aesthetic appearance. Reducing your body fat and body weight can lower your risk for heart disease.

Description	Women	Men
Essential Fat	10-12%	2-4%
Athletes	14-20%	6-13%
Fitness	21-24%	14-17%
Acceptable	25-31%	18-22%

Obese	32%+	22%+
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Note: Body Fat (BF) measurements appear to be of less importance compared to body mass index for general health and disease risk in the medical community and of higher importance in the athletic community. One reason may be because athletes with low BF %'s and high BMI's have lower risk for disease and non-athletes tend to have higher BF %'s even if their BMI is in the healthy range. So choose to get your BMI in check first and your BF % second.<sup>3</sup>

The current way your Body Fat Percentage is measured in class is by using a handheld Omron (model HBF-306C) Bioelectrical Impedance Analyzer. There are various settings to set such as mode, height (feet, inches), weight (pounds), age and gender. The mode stands for normal or athlete. To determine which mode you to set for you please see the below chart.<sup>5</sup>

## CALCULATE YOUR FIT INDEX

The Fat Loss Monitor can be set to either NORMAL or ATHLETE mode.  
Body composition varies based on your FIT Index.

Calculate your FIT index by using the following formula.

$$\text{FIT Index} = \text{Frequency} \times \text{Intensity} \times \text{Time}$$

Based on your FIT Index use the following mode when setting your personal data.

NORMAL FIT Index < 60

ATHLETE FIT Index ≥ 60

EXAMPLE: Running 5 times a week for 30 minutes.

$$\frac{75}{\text{FIT Index}} = \frac{5}{\text{Frequency}} \times \frac{5}{\text{Intensity}} \times \frac{3}{\text{Time}}$$

FIT Index ≥ 60, ATHLETE mode

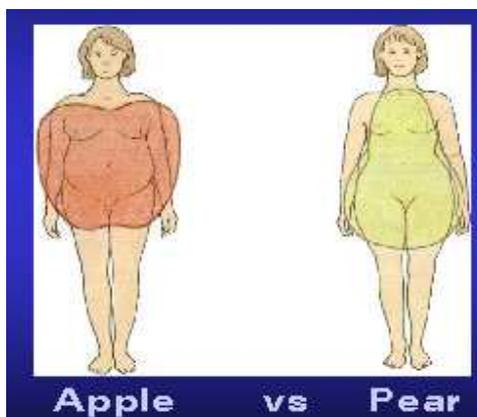
Number	Frequency of Exercise
5	Daily or almost daily
4	3 to 4 times per week
3	1 to 2 times per week
2	A few times per month
1	Less than once per month

Intensity	Conditioning Exercise	Sports
5	Cycling - > 12 mph pace	Basketball - competitive
	Weightlifting - vigorous, powerlifting or bodybuilding	Boxing
	Rowing - moderate to vigorous	Football - competitive
	Rowing machines - moderate to vigorous effort	Handball, racquetball, or squash
	Aerobic dancing - high impact	Ice hockey
	Step aerobics	Karate or kickboxing
	Running -> 5.0 mph	Rockclimbing
	Rope jumping	Rugby
	Rollerblading (roller skating)	Soccer - competitive
	Ski machine	Tennis
	Stairstepping	Swimming - competitive or lap
	Stationary cycling - moderate to vigorous effort	Speed skating - competitive
	BOOT CAMP	Skiing - cross-country Skiing - downhill racing

## CALCULATE YOUR FIT INDEX

Intensity	Conditioning Exercise	Sports & Recreational Activities
4	Cycling - < 12 mph pace	Archery
	Weightlifting - moderate effort	Basketball - shooting baskets
	Stationary cycling - light effort	Bowling
	Rowing - light effort	Fencing
	Calisthenics	Golf
	Stretching / Yoga	Gymnastics
	Rowing machines - light effort	Horseback riding
	Water aerobics or water exercise	Baseball
	Aerobic dancing - low impact	Softball
	Jogging - < 5.0 mph	Tai Chi
	Walking - > 2.5 mph	Volleyball - competitive
	Swimming - leisurely	Wrestling - competitive
	Rollerblading - leisurely	Ice Skating - < 9 mph

Time	Duration
4	45 minutes or more
3	30 to 44 minutes
2	15 - 29 minutes
1	less than 15 minutes

**Waist & Hip Circumferences:**

Heart disease risk can also be measured by abdominal obesity and the ratio of your waist to hip circumference is a better predictor of that risk than waist circumference alone. It's better to have large hips and a small waist than small hips and a large waist.<sup>1</sup>

**60 Sec Anaerobic Shuttle Run**

The shuttle run test measures your anaerobic energy system and more specifically your ability to perform a total body cardiovascular activity that includes stops and starts. The greater your anaerobic energy system, the faster you will move, the more calories you can burn, the greater potential to build and retain lean mass which leads to an increased resting metabolism, resulting in more fat being used for energy at rest and finally a better body composition with improved athletic performance capabilities.



### **60 Sec Push Up Test**

The push up test was chosen to measure upper body strength endurance and to evaluate your ability to execute a correct push up.



### **60 Sec Frog Squat**

The frog squat test was chosen to measure lower body strength endurance and to be sure each squat was performed with as full a range of motion as possible. This is important because we do a lot squats in class, the squat is a fundamental & functional movement in life and a great shaper of the posterior chain or glutes, hamstrings, quads and adductors (butt, back thigh, front thigh and inner thigh).

### 120 Sec Side Plank Hold

The side plank tests local muscle endurance of the internal and external obliques, multifidus, quadratus lumborum and rectus abdominus as well as other accessory muscles. This is important because weak lateral flexors or weak multifidus and quadratus lumborum muscles are often associated with low back pain and can contribute to lower extremity injuries or force loss transfer between the lower body and upper body. Strong lateral flexors can reduce “love handles” and contribute to an aesthetically pleasing midsection.



### 1 Mile Run

The 1 mile run tests the aerobic energy system and helps determine whether or not you did your conditioning outside of class.



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<http://www.americanheart.org/presenter.jhtml?identifier=3052325>. Dec 2007.
2. **Body Composition Tests.** American Heart Association.  
<http://www.americanheart.org/presenter.jhtml?identifier=4489>. May 2009.
3. **Body fat percentage.** [http://en.wikipedia.org/wiki/Body\\_fat\\_percentage](http://en.wikipedia.org/wiki/Body_fat_percentage). May 2009.
4. **Blood Pressure.** American Heart Association.  
<http://www.americanheart.org/presenter.jhtml?identifier=4473>. May 2009.
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6. **Resting Heart Rate.** American Heart Association.  
<http://www.americanheart.org/presenter.jhtml?identifier=4701>. May 2009.
7. Willet, Walter C. "Healthy Weight". *Eat, Drink and Be Healthy*. 2001. pg 37-40.