

# HEART RATE-

## *An Effective Way to Monitor Fitness Intensity*

### *What is Heart Rate?*

*Heart Rate* is the amount of times that the left ventricle contracts per minute. During each contraction, the left ventricle of the heart is sending

blood (Oxygen) to the muscles. The number of contractions depends on a lot of factors. For example, the size and strength of the left ventricle, your

fitness level, your genetic makeup, and the level of intensity during exercise.

### *What is Resting Heart Rate (RHR) and why is it important to know?*

Resting heart rate (RHR) is the number of beats in one minute when you are at complete rest. The best way to determine your (RHR) is to take your pulse immediately after you wake up before you get out of bed.

Your RHR indicates your basic fitness level. The more well-conditioned your body, the less effort and fewer beats per minute it takes your heart to pump blood to your body at rest. Average

resting heart rates range between 60-80 beats per minute, however, in unconditioned, sedentary people, RHR can be 100 beats per minutes and higher.

RHR is important to know because measuring your RHR over time will indicate whether your heart is getting more efficient or not. You can use RHR to see if you are getting more fit, less fit, stressed, etc.

### *Why is knowing HR important during exercise?*

The heart is a *muscle*, The heart is always functioning and therefore has to maintain itself. Unfortunately, in many people, the heart is operating at a relatively low level all day which really means that the muscle is not getting any real exercise. However, as with any muscle, when periods of exercise are applied to the heart on a regular basis (workout stress), the capacity and function of the heart will gradually increase so that it can deal with the stress without straining the body. Just like any other muscle in your body, the more you use it, the bigger and stronger

it will get. By monitoring your heart rate, you can get more benefit out of your time spent exercising. For example, the best way to monitor your intensity of exercise is through your heart rate. It ranges from a minimum value when resting to a maximum level during hard exercise. Monitoring your heart rate gives you a good a "window" into your body's response to the moment-to-moment changes in your physical activity. Knowing your HR can tell you to slow down because you are going to fast or speed up because your heart can work harder.

Knowing HR can serve medical purposes also. It can help to provide evidence for students that might have abnormal heart rate patterns (way too high, way too low, irregular heart beats). If this occurs, then the student can seek medical tests and advice..

## What happens to HR over time when exercising regularly?

Just like other muscles in the body, the more you exercise them, the bigger, stronger and more efficient they get. The left ventricle grows slightly in size which means that it can hold and pump more blood per beat. If the heart can hold and pump more blood, then it does not have to work as hard to get blood to the working muscles. For example, if you do not exercise regularly and do not work your heart muscle very much, it might take 145 beats per minute to walk up a flight of stairs because the heart has a difficult time collecting blood and then pumping it out. It needs to work a lot faster and harder to get that blood to the legs. If you exercise regularly and walk up stairs a lot, your heart

might beat 120 times per minute at the same pace. Why? The heart was able to collect a lot more blood (bigger) and then send it out to the body a lot faster (stronger). It is more efficient.

In a majority of people and in most situations, monitoring heart rate is reliable and valid. However, there is a caution. Heart rate is very susceptible to a variety of factors which may change the results; environment, genetics, type of exercise, hydration, sleep, energy levels, etc.

## What are the different ways to get pulse?

Heart rate can be determined in the field in three basic ways. The most common two are to palpate (press) the *carotid artery* in the neck or the *radial artery* in the wrist. The measure at the carotid artery, students should be taught to place two fingers just below and to the right of the Adam's apple if on the right side and to the left if taking on the left side. Students should press lightly so that they do not slow down the blood flow. To measure at the wrist the students should turn one hand palm up and use the first two fingers from the other hand. Place the fingers just below the base of the thumb and move them around as necessary to locate the best pulse. When you use the carotid or radial pulses to record heart rate, the best way is to count for 6 seconds and add a 0.

The third basic way, and **MOST ACCURATE**, is to use some type of electronic heart rate monitoring device. There are many types; one type you can grip tightly with both hands, the other you can put on your earlobe and another type uses the pulse from your finger. The best and most accurate however is the one that uses a chest strap and watch type receiver. The chest strap transmits an electrical pulse to the watch looking receiver. The receiver will give you an up to the second number which is your heart rate at that exact time.



Radial Pulse



Carotid Pulse

### Sources:

<http://www.nlm.nih.gov/medlineplus/ency/imagepages/19386.htm>

<http://www.ualr.edu/wellness/Resources/exercise/heartate.asp>