

## **Using a heart rate monitor to improve fitness**

By Bryan Tomek, For Active.com December 09, 2006

### **Understanding your heart rate**

Your heart rate is measured by the amount of times it beats per minute. During a rested period, a lower heart rate is actually optimal. This is because a stronger heart pumps more blood to your system per beat than a weaker heart, thus requiring less beats per minute.

Because your heart is a muscle -- it becomes stronger as you exercise it. During an aerobic workout, large groups of your body's muscles are used over an extended period of time in a consistent, rhythmic manner.

When being worked this way, your muscles demand oxygen. The harder you work your muscles, the more oxygen they require. This oxygen is supplied to your muscles from your lungs via the bloodstream. As a result, your heart pumps faster during a workout in an effort to deliver the additional oxygen that your muscles are demanding.

Measuring your heart rate using a heart rate monitor is a good way to gauge the effectiveness of your workout because as you strengthen your body through exercise, you also strengthen your heart. Measuring the rate of your heart during exercise can help you determine when you're pushing your body too hard or need to push it harder to achieve the level of fitness you are seeking.

In order to understand how to condition your body by analyzing your heart rate, it's important to understand the four different types of heart rate. They are as follows.

### **Resting heart rate**

Your resting heart rate is the rate that your heart beats per minute during periods of the day when you are most relaxed. Your RHR can be measured after you get out of bed or during a period of the day when you're sitting or relaxing comfortably.

Although heart rates vary between individuals, the average RHR for a man is between 60 to 80 beats per minute. The average for a woman is between 70 to 90. An adult in good shape can have an RHR of in the low 60's while an unhealthy RHR can be as high as 100. A very well conditioned athlete can have an RHR in the 40's. To get an accurate measurement of your resting heart rate by using a heart rate monitor you should take measurements at different rested periods of the day over the course of a week -- and then average them out.

### **Maximum heart rate**

Your maximum heart rate is the peak amount of beats that your heart has the potential to reach. You'll reach your MHR when you've pushed your heart as far as it can go during an aerobic workout.

It's extremely difficult to accurately measure your MHR. Experienced endurance athletes do so at fitness laboratories using an electrocardiogram (ECG). Because this measurement is so sophisticated, scientists have developed a formula that everyone can use.

To get an idea of your maximum heart rate, subtract your age from the number 220. With this formula, if you're 35, your MHR would be 185. This formula is not an exact science and does not ensure complete accuracy. Furthermore, it's important to understand that it can be dangerous attempting to measure your maximum heart rate, as you can cause serious damage to your body if you push it too hard.

### **Training heart rate**

Your training heart rate is the rate that you maintain during aerobic workouts in an effort to improve fitness. In order to properly train with a heart rate monitor, you should work out at a steady, rhythmic pace. This will allow you to capture consistent measurements.

The right number to train at depends on your fitness goals and is widely debated among professionals. To promote general fitness you can train as low as 50 percent or as high as 70 percent of your maximum heart rate.

For more experienced athletes, it's argued that this number can be above 70 percent and as high as 80 percent of your MHR. The lower numbers are recommended for beginners. You'll likely reach the 50 - 60 range while briskly walking. You'll likely reach the 60 -- 70 range while running for a steady period of time. And at 70 -- 80 you are running at a quick pace for extended periods of time.

### **Recovery heart rate**

It's important to give your body proper rest after a workout. Your recovering heart rate is the rate that you should bring your heart down to after a workout. A good number to go by is 20 beats within your pre-workout resting heart rate.

### **How heart rate monitors work**

Using a heart rate monitor is very simple. The most effective monitors measure your heart rate with a transmitter that is placed over the heart and held in place by an adjustable strap that wraps around your chest. Just like an electrocardiogram (ECG) the transmitter detects electrical activity. This activity is relayed by a cord connected to a wristwatch with a graphic display.

There are a variety of heart rate monitor models on the market. The most basic monitors simply display your heart rate. More advanced models have features that include alarms that sound when you've gone above or below your pre-programmed number. Other features can include pre-programmed workouts, countdown timer, calories burned and more.

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