

## Cardio Respiratory Endurance

Usually considered, by most fitness professionals, to be the most important component of physical fitness. Basically it involves the cardiovascular and respiratory systems and their ability to adapt to and recover from stress and physical activity. This function is extremely important because low levels of cardio respiratory endurance (CRE) have been linked to a marked increase in risk of premature death due to several causes, but primarily heart disease. Performing CRE type exercises has also been linked with reducing the risk of getting life threatening diseases, such as heart disease and type two diabetes.

For you the beginner, the best way to maintain or increase your cardiovascular fitness is to find a form of aerobic exercise that you enjoy. This can be swimming, running, walking, biking, or another activity that raises your heart rate to a sufficient level.

The next question you probably have is exactly what level should I be working at. Well the easiest way to do this is to figure out your maximum heart rate and work out at a percentage of that rate. To find you maximum heart rate, just take your age and subtract it from 220.

$$220 - \text{AGE} = \text{Maximum Heart Rate}$$

Now that you have your maximum heart rate you can determine your intensity, duration, and frequency levels. The American College of Sports Medicine recommends a workout at 55% - 90% of maximal heart rate for 15 to 60 minutes, 3 to 5 days a week. For a beginner the lower ends of these recommendations are ideal and can be increased as your cardiovascular fitness improves. So that means that a workout at 60% of maximal heart rate for 20 minutes, 3 days a week is a good place to start for beginners. The safest way to start cardiovascular training is to start out at low levels and increase gradually until you find the appropriate level for you. In order to figure out what a percentage of your maximal heart rate is, just take your maximal heart rate and multiply it by the percentage.

$$\begin{aligned} \text{Maximal Heart Rate} \times \text{Percentage} &= \text{Workout Intensity (beats/min)} \\ 197 \times 0.60 \text{ (60\%)} &= 118.2 \text{ beats/min} \end{aligned}$$

One last hint on maintaining cardiovascular fitness is that you should always monitor your heart rate during your exercise. Just check your pulse once and a while, and see if you are where you are supposed to be. If your heart rate is too high you may be putting too much stress on your heart, and should adjust accordingly. However if it is too low, then that means your body has adapted to the exercise and its intensity needs to be increased.