

## Target Heart Rate Zone Training

Target Heart Rate Training is a systematic method of improving your cardiovascular fitness. The body's organs and muscles change in response to the demands placed on it. By exercising at sufficiently intense levels, you can overload your cardiovascular system. During rest, your body adapts to strengthen the cardiovascular system. Over time, your heart becomes more efficient at delivering the oxygen and fuel required by the muscles to maintain this higher level of performance. The skeletal muscles also become better at extracting oxygen from the bloodstream. With continued consistent exercise, the cardiovascular system continues to consistently improve.

**How do you know how hard you are working out?** Physiologists have discovered that the rate of oxygen used by the muscles during exercise is the best measure of aerobic work. An individual runs on a treadmill while the heart rate and the volume of inhaled and exhaled air are sampled and measured. The difference between the volume of oxygen inhaled and exhaled during the test is what the muscles used to burn fuel (mostly carbohydrates and fat). The rate of this oxygen consumption, in liters per minute, is called VO<sub>2</sub>. The test is performed at progressively more difficult levels until the individual reaches his or her maximum capability. This maximum rate of oxygen consumption is called the VO<sub>2</sub>(max).

**The VO<sub>2</sub> method is the most accurate way to determine exercise intensity. However,** it is not without some serious drawbacks. It requires expensive equipment, trained personnel, and specialized facilities... These tests are expensive. Another drawback is that you can't take this specialized and bulky equipment with you when you work out. (This stuff ain't portable.)

**This brings us to the second best way to measure exercise intensity - your heart rate during exertion.** The heart rate is much easier to measure than VO<sub>2</sub> but it is a very good approximation of VO<sub>2</sub>. It has been observed that the relationship between the percentage of VO<sub>2</sub>(max) and the percentage of maximum heart rate is very predictable. Studies consistently show the 55% VO<sub>2</sub>(max) corresponds to approximately 70% maximum heart rate for most individuals. This means that if you know your maximum heart rate (the fastest your heart rate is capable of pumping), you'd have a convenient method of monitoring your workouts.

**To accurately determine your maximum heart rate,** there are specialized facilities with bulky and expensive equipment that require trained personnel available to you for a price. You can determine your maximum heart rate by undergoing an exercise stress test. If you choose this route, it is important that you undergo a physical examination prior to the test, especially if you are over 35. Many trainers have also developed tests that you can perform to estimate your maximum heart rate. For instance, one test could involve having you step up and down on a stool at a certain rate for pre-determined durations while the trainer monitors your heart rate.

**Knowing your maximum heart rate will allow you to estimate where you can train to bring about cardiovascular improvements.** But since a stress test isn't practical for most individuals, physiologists have developed a number of formulas for estimating maximum heart rate without actually requiring you to take your heart rate up to

potentially dangerous levels. The maximum heart rate formulas provide an approximation of your true maximum heart rate. But by estimating conservatively, you can use these estimates as the foundation for monitoring your exercise intensities.

**Once you've determined your estimated maximum heart rate, you can construct a "target zone" for your workouts.** Normally, trainers specify "zones" for you to work in. This is because the human heart rate changes continuously. It would be virtually impossible to maintain any selected heart rate. In addition, it takes a while for the heart to "come up to speed." For these reasons, a "target heart rate zone" has evolved to become the most practical method of measuring exercise intensity.

**Target heart rate zones are expressed as a percentage range based on your maximum heart rate.** Your trainer (or your software) will convert these percentages into a target heart rate ranges specific to you. For instance, your goal may be to maintain your heart rate of between 124 and 144 bpm (beats per minute). For tracking purposes, you would most often only track the duration of your exercise in which you were between your minimum and maximum heart rate goals (your duration "in the zone").

**Most training schedules incorporate different types of workouts** (e.g. long, slow distance, high intensity intervals). You can construct different target zones depending upon the type of workout you are performing. Heart rate monitors can help you stay in that zone so that you can achieve your goal for that workout. Modern heart rate monitors can tell you "duration in zone" - the amount of time you were in your target heart rate zone. Some will even beep when you are above or below your selected training zone. This makes it far more convenient to track your workouts. These heart rate monitors usually have a sensor that mounts around your chest and a computer that mounts in a watch-like case on your wrist.

**Target heart rate training lets you track improvement over time.** This is indicated by a gradual reduction in your resting heart rate. Another indicator of improvement is that you'll need to perform at higher levels to perform the same exercise at the same heart rate range as before. For instance, you may find that you need to run on a treadmill at say, 4.5 mph to stay in your target heart range when you first start out. You will find that over time you will have to run at, say, 4.8 mph to get your heart to stay inside your target heart range. Paradoxically, over time, you have to perform at higher levels to exercise the same amount.

**Target heart rate training provides a scientific approach to tracking your improving levels of fitness.** With a decent heart rate monitor, it becomes easier to monitor your workouts. It allows you to measure exercise intensity independently of what activity is being performed by focusing on heart rate as the measure of exercise intensity. If you haven't been making the kind of progress you know you are capable of, you might consider this methodical approach to improving fitness.