The Six Heart Rate Training Zones

Why is it important to learn about the Six Heart Rate Training Zones? You must train at a variety of different heart rates in order to stimulate your body to improve your fitness level. Your training heart rate zone is a critical element in exercise. Taking your pulse and figuring your heart rate during a workout is one of the primary indicators in determining the intensity level at which you and your heart is working.

The Karvonen Formula

This is a heart rate reserve formula and it’s one of the most effective methods used to calculate training heart rate. The formula factors in your resting heart rate, therefore, you’ll need to determine your resting heart rate by doing the following:

- Prior to getting out of bed in the morning, take your pulse on your wrist (radial pulse) or on the side of your neck (carotid pulse).
- Count the number of beats, starting with zero, for one minute. If you don’t have a stop watch or a second hand in your bedroom, you can measure the time by watching for the number to change on a digital alarm clock. Find your pulse and start counting when the minute number changes the first time, stop counting when it changes again.
- To help assure accuracy, take your resting heart rate three mornings in a row and average the 3 heart rates together.

Another element in finding your training heart rate zone is determining the intensity level at which you should exercise. As a general rule, you should exercise at an intensity between 50% - 85% of your heart rate reserve. Your individual level of fitness will ultimately determine where you fall within this range.

Use the following table as a guide for determining your intensity level:

| Beginner or low fitness level | 40% - 60% |
| Average fitness level         | 60% - 70% |
| High fitness level            | 75% - 85% |

Now that we’ve determined and gathered the information needed, you can determine your ideal target heartrates using the Karvonen Formula. You may also determine your ideal target heartrates by completing a variety of exercise tests at your medical fitness center. For example, a sub max or max VO₂ will allow you to determine your current cardiovascular fitness level, and then provide you with the most accurate information to determine your ideal target heartrates. If you are unable to complete any exercise tests you may use the Karvonen formula to determine your age predicted target heartrates:

\[ 220 - \text{Age} = \text{Maximum Heart Rate} \]
\[ \text{Max Heart Rate} - \text{Rest}. \]
\[ \text{Heart Rate} \times \text{Intensity} + \text{Rest}. \]
\[ \text{Heart Rate} = \text{Training Heart Rate} \]

For example, Elaine is 33 yrs old, has a resting heart rate of 75 and she’s just beginning her exercise program (her intensity level will be 50% - 60%). Elaine’s training heart rate zone will be 131-142 beats per minute:

Elaine’s Minimum Training Heart Rate:
220 - 33 (Age) = 187
187 - 75 (Rest. HR) = 112
112 x .50 (Min. Intensity) + 75 (Rest. HR) = 131 Beats/Minute = Elaine’s Training Heartrate at 50%

Elaine’s Maximum Training Heart Rate:
220 - 33 (Age) = 187
187 - 75 (Rest. HR) = 112
112 x .60 (Max. Intensity) + 75 (Rest. HR) = 142 Beats/Minute = Elaine’s Training Heartrate at 60%

Periodically, take your pulse during your exercise session to gauge your intensity level. Typically, the easiest location for taking a pulse is on the side of your neck, the carotid pulse or on your wrist, the radial pulse by placing your first two fingers in the groove of your wrist just below the base of your thumb. Be sure not to press too hard, and always use the first two fingers, never your thumb, on the carotid or radial artery or you’ll get an inaccurate reading. Count the number of beats, always beginning with zero, for 6 seconds (then multiply by 10), or for 10 seconds (then multiply by 6) to get the number of times your heart is beating per minute. If your pulse is within your training heart rate zone, you’re right on track! If not, adjust your exercise workload until you get into your zone.

**Zone 0 – Low Heart Rate Zone: 40% - 50% of your Max HR**
Beginning Exerciser Heart Rate Training Zone
Exercise Benefits: An ideal heart rate training zone if you are a beginning exerciser, or to use on Active Rest, easy or recovery training days.

**Zone 1 – Healthy Heart Zone: 50% - 60% of your Max HR**
Easiest, Most Comfortable Zone
Exercise Benefits: Body fat decreases, blood pressure lowered, cholesterol lowered, muscle mass improvements, decreased risk for degenerative diseases, safety high.

**Zone 2 – Temperate Zone: 60% - 70% of your Max HR**
Cruise Zone – you can train for extended periods of time in this zone
75% - 85% of all calories from fat as fuel, 6 – 10 calories per minute
Exercise Benefits: Gain muscle mass, lose fat mass, strengthen heart muscle, fat utilization zone, training your fat mobilization, fat transportation, your muscles to burn fat, your fat cells to increase the rate of fat release, increase in the number of mitochondria in the muscle

**Zone 3 – Aerobic Zone: 70% - 80% of your Max HR**
Transition Zone – from two health zones to two performance zones
Still feels comfortable, you will break a sweat, but no anaerobic burn sensation
Exercise Benefits: Improved overall functional capacity with increase in the number and size of blood vessels, increased vital capacity, respiratory rate, max pulmonary ventilation, pulmonary diffusion, increase in size and strength of the heart, improvements in cardiac output and stroke volume.

**Zone 4 – Threshold Zone: 80% - 90% of your Max HR**
Max Calorie Burn Zone -
Exercise Benefits: Max fat burn, but you must be fit enough to train with some oxygen present for additional fat burn. No fat burning if exercising above fat burning heart rate. High total calories burned during exercise, high carbohydrates as source of calories. Improved VO 2 and higher lactate tolerance
Zone 5 – Performance RedLine Zone: 90% - 100% of your Max HR
Peak Race Zone – Athlete Only Zone!
Exercise Benefits: Highest total calories burned, but lowest percentage of fat calories. Lactate tolerance zone. This zone is ONLY for the VERY HEALTHY & FIT!!! Spending too much time in this zone, even for elite athletes can be painful, cause injuries and lead to overtraining, which leads to poor performance!