

# Understanding Your Training Heart Rate

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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 ascertaining the intensity level at which you and your heart is working. There are many ways to measure exercise intensity. The Karvonen Formula is one of most effective methods used to determine your heart rate. The Ratings of Perceived Exertion and Talk Test methods are subjective measurements that can be used in addition to taking a pulse.

## 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 . . .	50% - 60%
Average fitness level . . . . .	60% - 70%
High fitness level . . . . .	75% - 85%

Now that we've determined and gathered the information needed, we can pull the information together in the Karvonen Formula:

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

$$\text{Max Heart Rate} - \text{Rest. Heart Rate} \times \text{Intensity} + \text{Rest. Heart Rate} = \text{Training Heart Rate}$$

*For example, Sally 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%.) Sally's training heart rate zone will be 131-142 beats per minute:*

*Sally's Minimum Training Heart Rate:*

$$220 - 33 (\text{Age}) = 187$$

$$187 - 75 (\text{Rest. HR}) = 112$$

$$112 \times .50 (\text{Min. Intensity}) + 75 (\text{Rest. HR}) = 131 \text{ Beats/Minute}$$

*Sally's Maximum Training Heart Rate:*

$220 - 33 \text{ (Age)} = 187$

$187 - 75 \text{ (Rest. HR)} = 112$

$112 \times .60 \text{ (Max. Intensity)} + 75 \text{ (Rest. HR)} = 142 \text{ Beats/Minute}$

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. Be sure not to press too hard on the carotid 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.

### **Ratings of Perceived Exertion (Borg Scale)**

Another method that can be used in conjunction with taking your pulse is the Ratings of Perceived Exertion (RPE). This is a subjective method that allows you to rate how hard you feel you're working. RPE can be the primary means of measuring exercise intensity if you do not have typical heart rate responses to graded exercise. These people include those on beta blocking medications, some cardiac and diabetic patients, pregnant women, and others who may have an altered heart rate response.

On a scale of 0 - 10, rate how you're feeling in terms of exercise fatigue, including how you feel both physically and mentally. You should be exercising between an RPE of 4 (somewhat strong) and an RPE of 5 or 6 (strong). Use the following table to determine the intensity level:

0 . . . .	Nothing at all
0.5 . . .	Very, very weak
1 . . . .	Very weak
2 . . . .	Weak
3 . . . .	Moderate
4 . . . .	Somewhat strong
5 . . . .	Strong
6	
7 . . . .	Very strong
8	
9	
10 . . . .	Very, very strong (Maximal)

### **The Talk-Test Method**

Like the RPE, the talk test method is subjective and should be used in conjunction with taking a pulse. The talk test is quite useful in determining your comfort zone of aerobic intensity, especially if you are just beginning an exercise program. If you are able to talk during your workout without a great deal of strain, you're most likely in your comfort zone. Work at an intensity that allows you to breathe comfortably and rhythmically throughout all phases of your workout. This will ensure a safe and comfortable level of exercise.

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