

Heart Rate Exercise Basics



Q: What is heart rate?

A: Heart rate is the number of heart beats per minute; the times per minute that the heart contracts.

Q: What is average heart rate?

A: The average of heart rates measured during an exercise period.

Q: What is recovery heart rate?

A: This is the heart rate that our body will decrease to after an exercise session. For example, you exercise for a 1/2 hour at 155. Two minutes after you stop exercising, your heart rate decreases to 95.

The 95 would be your recovery heart rate. It is used to evaluate your fitness level after exercise. It is good to set a two minute time frame and see how many beats you recover in that time frame. Compare this recover heart rate between exercise sessions.

Q: What is resting heart rate?

A: Resting heart rate (Resting HR) is the number of beats in one minute when you are at complete rest. Your resting heart rate indicates your basic fitness level. The more well-conditioned your body, the less effort and fewer beats per minute it takes your heart to pump blood to your body at rest.

Q: How do I determine Morning Resting Heart Rate?

A: Immediately after awakening and before you get out of bed, measure your heart rate using your heart rate monitor or from the palpating pulse from artery, counting the beats for 15 seconds and multiplying by four. You can sleep with your heart rate monitor on and in the morning read it first thing. Be aware of the fact that, if your bladder is full in the morning, you didn't sleep well, or you're feeling stressed, you might have a slightly elevated resting heart rate. Take these measurements for five consecutive days and find the average. This average is your actual resting heart rate. Resting heart rate is dependent on your living habits and a number of factors such as quality of sleep, stress level, and eating habits.

Q: What is maximum heart rate?

A: Maximum Heart Rate (Max HR) is the highest number of times your heart can contract in one minute. Max HR is the most useful tool to be used in determining training intensities, because it can be individually measured or predicted.

Q: How to determine maximum heart rate?

A: You can define your maximum heart rate by

- 1) having it measured in an exercise test
 - 2) using age-predicted maximum heart rate formulas.
- 1) Measured Max HR

The most accurate way of determining your individual maximum heart rate is to have it clinically tested (usually by treadmill stress testing) by a cardiologist or exercise physiologist. You can also measure it in field conditions supervised by an experienced coach. If you are over the age of 35, overweight, have been sedentary for several years, or have a history of heart disease in your family, clinical testing is recommended.

- 2) Predicted Maximum HR There is a mathematical formula that allows you to predict your Max HR with some accuracy. It is called the "age-adjusted formula". The age-adjusted Max

HR formula can come in very handy when you're not prepared to pay for the physician-supervised stress test.

WOMEN: $226 - \text{your age} = \text{age-adjusted Max HR}$

MEN: $220 - \text{your age} = \text{age-adjusted Max HR}$

If you are a 30-year-old woman, your age-adjusted maximum heart rate is $226 - 30 \text{ years} = 196 \text{ bpm}$ (beats per minute).

These formulas apply only to adults. The generally accepted error in age-predicted formulas is $\pm 10-15$ beats per minute, which is due to different inherited characteristics and exercise training.

You should remember that there may be some discrepancy when using the age-adjusted formula, especially for people who have been fit for many years or older people. The formula will give you a ballpark estimate to work from, but if you want to exercise/train at your most effective levels, your Max HR should be measured.

Q: What is the heart rate reserve?

A: Heart Rate Reserve is the difference between your Maximum Heart Rate and your Resting Heart Rate. If your maximum heart rate is 196 bpm (beats per minute) and your resting heart rate 63 bpm, your heart rate reserve is $196 \text{ bpm} - 63 \text{ bpm} = 133 \text{ bpm}$.

The greater the difference, the larger your heart rate reserve and the greater your range of potential training heart rate intensities.

Q: What is safety heart rate?

A: This is the heart rate that is prescribed for beginning exercises - whether a walker, runner, swimmer, snow shoer, or a participant in any aerobic activity. It is also the term used in some cardiac rehabilitation programs in which physicians prescribe moderate, supervised training for recovering heart attack patients. This range is usually 60% (or less) of the maximum heart rate and represents the least amount of stress you can place on your heart and still receive a beneficial exercise effect.

Q: What is Max VO2 heart rate?

A: This is the heart rate at which you hit your maximal oxygen uptake effort. On the average, you hit your Max VO2 HR at 95% of your Max HR.

Q: What is the anaerobic threshold?

A: The physiological point during exercise at which muscles start using up more oxygen than the body can transport, i.e. muscle work produces more lactic acid/lactate than the body can process.

Q: What is biofeedback?

A: Visual/numerical information on what is happening inside the body, for instance heart rate.

Q: What does ECG stand for?

A: It stands for electrocardiogram which is a unit that is used in the medical community to measure and analyze heart rate. The Polar heart rate monitors all have the same accuracy rating as the ECG machine.

Q: What is the target zone?

A: A target zone is a heart rate range that guides your workout by keeping your intensity level between an upper and lower heart rate limit. There are various target zones that are suggested for an individual to follow that correspond with a specific exercise goal. IE: Improved Fitness Zone 70-80% of Max Heart Rate.

Ideal For	Benefit Desired	Intensity Level (% Maximum heart rate)
Light Exercise	Maintain Healthy Heart/Get Fit	50% - 60%
Weight Management	Lose Weight/ Burn Fat	60% - 70%
Aerobic Base Building	Increase Stamina Aerobic Endurance	70% - 80%
Optimal Conditioning	Maintain Excellent Fitness Condition	80% - 90%
Elite Athlete	Maintain Superb Athletic Condition	90% - 100%

For example, if you want to Lose Weight/Burn Fat: do your favorite exercise at 60%-70%

of your maximum heart rate, based on your age, for at least 30 minutes a day, three times a week. To program your Heart Rate Monitor into your Ideal Weight Management Zone, use the Target Heart Rate Chart above.

Select which level of condition represents your current physical condition and locate the Lower and Upper Heart Rate Zones for your age from the Target Heart Rate Chart.