

Training with heart rate (HR) can help ensure that you don't train too hard or take it too easy! However, to achieve effective training, you need to know that you are working with accurate HR information.

Depending on the training session, your target heart rate will be anywhere from 60% – 95% of your maximum heart rate (MHR). To know your target heart rates, you'll need to know your MHR.

The traditional way to calculate MHR is to use this formula: 220 minus your age for men, or 226 minus your age for women. For example, if you are a man of 40 then your estimated MHR is 180. You can then calculate training heart rates from this by using a formula such as 70% MHR, which in this case is 126. This formula is simple and convenient but unfortunately it is not accurate for up to 30% of runners, so your training could be set at completely the wrong HR level.

There are other ways to find your true MHR. For example, you can undergo a physiological test at a sports science lab which combines treadmill run results with blood lactate samples to establish your MHR and HR zones.

An alternative way of self-assessing your MHR is to run as fast as you can on the level for three minutes, take 2—3 minutes recovery with gentle running, then repeat your three-minute max run. During the second run you should reach your MHR. Use your HR monitor to record your heart rate as you may peak just after you finish the effort.

Before carrying out any test it's important to make sure that you're in good health, with no injuries or infection. If you're in any doubt at all, we suggest you get a medical check-up. It's also important to make sure you warm up thoroughly for 15 minutes before starting any training session. Obviously you need to be fresh to perform at your true max and you will not achieve this if you have trained hard on the previous couple of days. Make sure you have eaten well during the day and are well hydrated too.

You may prefer to carry out your MHR assessment on a treadmill rather than outside as this can help you maintain a controlled pace during your three-minute effort and prevent you setting off too fast and overdoing things.

Your training plan should have a number of phases that include a range of training sessions. These should be carried out in a variety of HR zones and you will start to understand how your body feels and responds during these sessions. Too much steady running at too high an intensity is a common error because it ends up leaving you feeling fatigued for the harder sessions during your training week and you'll end up losing motivation or over-training. This can result in you getting injured or ill.

Keep a check on your resting HR and if you find that your heart rate is slightly higher than normal, it may be the onset of fatigue caused by a couple of days' hard training or the start of a cold or illness. Take this as a sign to go easy for a couple of days until your normal heart rate returns and you know you are fully recovered.

Over-training and the fatigue associated with it is more serious. If you have been suffering tiredness for a few weeks, you may find that you struggle to get your heart rate up to the normal levels in your training sessions. You have probably been overdoing things and you need rest and recovery time. Take a few days off straight away before your condition deteriorates.

Your heart rate is an excellent guide if you have accurate information and use it properly. Used in tandem with common sense, good practice and listening to your body and its signals, your HR will help you train effectively and consistently, which is one of the secrets of improving your training and race performance in the long term.