

Determining Exercise Intensity For Endurance Training

There are several ways to measure your exercise intensity.

- As a particular speed or power output
- As a percentage of VO2max
- As a percentage of maximum heart rate
- As a multiple of metabolic equivalents (METs)

Most coaches and players use **heart rate** because it is by far the most practical and easy to measure. In order for you to get the most out of your endurance training a **heart rate monitor** is essential. In fact, a heart rate monitor is one of the best investments you can make!

The first step you must take is to establish your **maximum heart rate**. The simplest way to do this is to use the following simple equation;

Maximum heart rate = 220 - Age

So for example if a 25 year old wanted to train at 70% of their maximum heart rate...

HRmax = 220 - 25
= 195bpm

70% HRmax = 195 x 0.7
= 137bpm

With both continuous and interval training your body will begin to adapt after several weeks. In order to continue exercising at 70% of your maximum heart rate, you must increase the exercise intensity (the speed you are running or cycling etc).

Another method to calculate your training threshold is the **Karvonen equation**. It's a bit more complicated but offers a more specific training zone. The equation takes into account your working heart rate (calculated as the difference between maximum heart rate and resting heart rate).

To calculate a training zone at **70%** for a **50 year old** with a resting heart rate of **70 bpm**...

Target HR zone = (Maximum HR - Resting HR) x 70% + Resting HR
= (180 - 70) x 0.7 + 70
= 77 + 70
= 147bpm

More on Heart Rate Monitors

The above calculations assume you have a heart rate monitor of course. Yes, you can stop and take your pulse manually but if you're a serious athlete or runner it's far from ideal.

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