



CLARIFYING HEART RATE

Using your heart rate monitor on your fancy new speed and distance system

When you strap on that heart rate monitor, how well can you interpret the data that you're going to see? Here are four important points every athlete should first understand about heart rate:

1. Heart rate is not a goal; it's only one indicator of your exertion level.
2. As an isolated number, don't judge the quality of your workouts by your heart rate.
3. Maximum heart rate is not a useful number for determining training intensity.
4. A maximum heart rate of 200, or 170, or any number, isn't good or bad. It's a number that will vary by individual and is not a useful predictor of athletic performance.

Before going into more detail, consider some

factors that will influence your heart rate. Factors that decrease heart rate are age, fatigue, higher training volume and improved fitness; while those that may increase heart rate are training in hot weather, caffeine, dehydration, illness and some medications. Your racing heart rate will be higher than your training heart rate and your morning heart rate lower than other times throughout the day. Also consider that an increase in altitude raises heart rate for submaximal efforts and decreases heart rate for maxi-

mal efforts. Heart rate is also higher when your body is vertical as compared to horizontal. Not all these points are absolutes—an athlete could see the opposite effect—but they're good reference points.

HEART RATE IS NOT A GOAL

It's not uncommon for athletes to judge the quality of their workouts by their heart rates, saying, "I felt good, but I was disappointed because I just couldn't get my heart rate up." We have seen that there are many reasons why your heart rate may be lower on a given day, but your workout should be judged based on your pace in relation to effort—not heart rate. The best athletes are in tune with their bodies and a low (or high) heart rate, by itself, won't determine their perception of the quality of a workout. If you dropped your best Olympic-distance triathlon time from 2:40 to 2:30, isn't that more important than whether your heart rate was 5 beats higher or lower in that race?

SETTING TRAINING ZONES

If you want to use your heart rate monitor effectively, start by determining your lactate threshold heart rate (LTHR). Your LTHR is the point at which your body produces lactic acid faster than it can clear it. As a result, lactic acid accumulates in your body, and you can only maintain your effort for about 60 to 75 minutes. A simple way to determine your LTHR is with a 30-minute time trial (running or cycling). When well rested, do this time trial on a flat course with minimal stops. Record your average heart rate over the last 20 minutes. This is an estimate of your LT heart rate.

Once you have that number, your training can be based upon your LTHR. You can set your 5 training zones using the charts in *The Triathlete's Training Bible*. Note that many labs also do testing to determine LTHR. Due to different methods of identifying LTHR, a lab test may result in a different LTHR. While a lab test may provide interesting information, it's not a necessary test. The 30-minute test provides the best number for determining your training heart rates based on the method described in this article.

Let's take an example of an athlete who did a 30-minute run test and found an average heart rate of 160 for the last 20 minutes. Using the chart on the following page, he would set his training zones based on his 160 LTHR.

ZONE DESCRIPTIONS

ZONE 1 - RECOVERY This is the easiest type of

Example (If HR was 160bpm over last 20 minutes of LTHR test)

Zone 1	Zone 2	Zone 3	Zone 4	Zone 5a	Zone 5b	Zone 5c
106-136	137-145	146-153	154-159	160-163	164-169	170-177

training. This is done most often between hard workouts and in base training. Fitness is maintained or even improved in zone 1.

ZONE 2 - EXTENSIVE ENDURANCE This is the most common training zone. Aerobic endurance is improved or maintained while the effort is relatively easy.

ZONE 3 - INTENSIVE ENDURANCE This could be described as a medium effort. For short-course athletes, this training zone is used most during base training and not beyond that period. Long-course athletes may do zone 3 efforts throughout the year.

ZONES 4 & 5A - THRESHOLD Training here is done at or just below lactate threshold. These zones are more difficult to maintain for long periods of time. The pace of these workouts is comparable to the pace of an Olympic-distance race. This type of training begins during the base period and may be continued throughout the season.

ZONE 5B - ANAEROBIC ENDURANCE Intensity in this zone exceeds lactate threshold. Intervals, which may last for 2 to 5 minutes, are done in

this zone. Too much of this training can lead to injury and overtraining. Experienced athletes will do zone 5b workouts in the 8 weeks before peak races.

ZONE 5C - POWER Effort is maximal and training in this zone is measured in seconds. This type of training has little value to most multi-sport athletes.

It is important to re-test your LTHR throughout the season and reset your training zones as necessary. As your knowledge of perceived effort in relation to heart rate grows, you will be less concerned about daily variations in heart rate. Once you've established your training zones, it's much easier to set up a training plan and peak at the right times.

OTHER KEY POINTS

Early in the season when fitness is lower, it is much easier to see higher heart rates. As fitness improves and training load increases, most athletes will see their heart rates drop by 10 to 15 beats at the same perceived effort.

After 3 to 6 days of lower volume training,

such as when you are peaking, your heart rate will increase by 5 to 10 beats during intense workouts.

The terms anaerobic and aerobic training are often used to describe a workout. Training above LT is often referred to as anaerobic, and training below LT is referred to as aerobic. However, one is never fully aerobic or anaerobic. As intensity increases from easy to difficult, energy production shifts from mostly aerobic to mostly anaerobic. But at all times energy production is partly aerobic and partly anaerobic. Running LTHR is generally 6 to 12 beats higher than cycling LTHR. However, some athletes will see a difference of as much as 25 beats. Experienced cyclists could have a cycling LTHR that is higher than their running LTHR.

So, turn on your wristtop computer, set your zones and start training. o

Joe Friel is the author of The Triathlete's Training Bible. Eric Schwartz is an Ultrafit coach (ultrafit.com) and a national champion in duathlon. Contact him at enduranceone.com.

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