Heart Rate Monitors: A Training Guide for Better Health and Better Performance

By Kevin Koskella
Before discussing heart rate monitors and training for a race, first let’s take a look at how aerobic exercise is vastly superior to anaerobic exercise, when it comes to training for an endurance race or just fat burning and staying healthy.

**AEROBIC EXERCISE**

Your workout schedule should emphasize your aerobic workouts. Aerobic means *with oxygen*, and refers to activities where your heart rate is on the low side for an extended period.

With aerobic workouts, you are working your heart and burning fat. In time, you will be able to change your body composition and overall endurance with extended periods of aerobic activity. Examples of aerobic activities include walking, biking, running, swimming (with proper technique).

I first heard about focusing on aerobic workouts (as opposed to anaerobic) from Mark Allen, winner of six Ironman triathlons. He was a triathlete in his 30s and seemingly in amazing shape, but he started to lose energy and break down. His coach had him do his workouts with a heart rate monitor and keep his heart rate in a certain range – only in the aerobic, fat-burning range. At first, he felt like he had to slow down way too much and didn’t believe he was even training hard enough to make any gains. At first, he was walking to keep his heart rate down, but over time, as he trained in this lower heart rate, he was able to go faster at the same lower heart rate!

The same thing that applies to an Ironman athlete can be applied to a beginning athlete trying to lose 50 pounds, and everyone in between.

Some of the benefits of making your exercise mostly aerobic include:

- Your muscles will be more resistant to injury
- It is easier to stay hydrated
As you build your aerobic muscles, you will be burning more fat for longer durations. In fact, aerobic workouts allow your body to continually burn fat for hours after you are finished, as you rest.

- Improving circulation

- Enjoying your activity and not getting burned out

**Training doesn’t always have to be reserved for a certain time of the day**, a certain place or even done all at once. Exercise used to be more natural, but has evolved into a more “artificial” activity - in the form of separating it from other parts of your day.

Physical activity in the past meant finding food and providing shelter for and protecting ourselves. Of course, we won’t be going back to those days any time soon (unless gas prices REALLY get out of control!), but here are many ways to fit in aerobic exercise during the day (remember, we are shooting for 30 minutes a day, 5 days a week or more) without treating it as a separate routine.

Here are some changes you can make to bring back some of that “natural” activity. Keep these in mind in addition to your scheduled workouts:

1. When going to the grocery store (or to the gym), purposely park far away from the entrance. This will give you a little walking time to and from the building.

2. Take the stairs. This will not only give you some aerobic exercise, it will probably get you to where you are going faster and help you avoid the annoying (and sometimes stressful) wait for the elevator.

3. If you are waiting for an airplane, take a walk around the airport instead of just sitting and waiting.

4. Spend part of your lunch time walking (or running, as long as you have shower-access!), or at least take the long way to the cafeteria. Getting a workout of any kind in
at lunch can not only boost your energy in the afternoon, but can reduce stress levels and free up more time in the evening.

Adding little bits of activity to your workday can really help with your energy levels and ultimately productivity levels at work! You will also find that you will begin to enjoy these benefits, and want more of them.

HEART RATE MONITORS

As your exercise and training increase, a heart rate monitor will be just the thing you need to keep you in the aerobic zone and always in fat-burning mode. It’s simple to figure out your personal maximum aerobic heart rate. I use the Dr. Phil Maffetone approach:

THE 180 FORMULA

Start with 180 and subtract your age. Take this number and add or subtract using the following guidelines:

1) Subtract another 10 beats for being sedentary, or couch potato-like, or if you have or are recovering from a major illness (disease, any operation, any hospital stay, etc.) or if you are on any regular medication.

2) Subtract another 5 beats for being a recreational weekend athlete, if you have stopped exercising because of an injury, or if you get frequent colds or flu or allergies.

3) Leave the number alone if you work out around 3-4 times a week consistently for several years, and have not had colds or flu more than once or twice a year.

4) Add 5 beats if you have been training at a high level for several years.

5) Now add 5 beats if you are over sixty or under twenty.
The number you end up with will be your maximum aerobic heart rate (MAHR). If you exercise below this heart rate, you will burn fat for energy. If you exercise above it, you will burn carbohydrates.

You may have seen the 220 formula, the more mainstream version. The 220 formula is a little more complicated, and I have not seen the phenomenal results in terms of fat burning that I have from the 180 formula. The 180 formula is also how Lance Armstrong trained after overcoming cancer, getting ready for his 1999 Tour de France victory.

Once you have determined your maximum aerobic heart rate, use a range from that number to 10 beats below that number when you are training or exercising. In other words, if your MAHR is 160, then your aerobic training zone is 150-160 beats per minute.

This may be a little slower pace than you are used to. When I started with this formula, I went from running fast (treadmill up to 8.0 mph!) every time out, to a slow jog to stay in the aerobic zone. As your aerobic system improves, you will have to go faster to stay in this zone.

For example, if you currently jog a mile in 12 minutes at a rate of 150 bpm, your pace may speed up to 10 minutes per mile. Even though you’ll be moving along at a faster clip, you will feel about the same as you did at the 12 minute per mile pace. It’s fun to see the positive changes you are making to your heart and overall health! It’s also a great way to train for a race, whether it’s a triathlon or 5k run.

Trust me on this. I didn’t believe it at first but I’ve been doing this for years now, and going slower to burn more fat really does work!

Stick with aerobic workouts most days of the week. I say most, meaning shoot for doing something aerobically every day. With this goal, you will find that it becomes an enjoyable habit, and you won’t want to miss your workout or exercise session. Of course, there will be days that for whatever reason, it just doesn’t happen. However, no
worries, because missing a day occasionally isn’t a big deal if you are consistent in moving your body every day!

**Also:** make sure you are warming up to your max very slowly. For example, if I’m out for even a 30 minute run, I will not reach my max for that workout until around the 10 minute mark, and somewhere around the 22 minute mark, I will begin to slowly bring it back down.

**TIP:** Tri clubs and other training groups stress the importance of track workouts to gain speed. While I think this can be beneficial on occasion, I recommend only doing these types of sprint workouts once per month or so. Try not to get caught up in the “no pain no gain” group mentality here!

So how do you test yourself to see if you are getting faster?

Simple:
Once per month (or more often if you’d like, but weekly might be a bit too much), do a 3 mile run (or 4 or 5 mile) after an easy warm up.
Do this run at your maximum aerobic heart rate, and check your time for each mile.
During the test, your times within the run will typically get slower. If not, you may not have warmed up enough.
Here’s an example of someone training at a maximum aerobic heart rate of 155:

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Each month, you should see your times get faster, assuming you have been training mostly aerobically in the past month.

If you start to plateau or times start getting slower, something in your routine is off- either you have trained too hard anaerobically, you are likely experiencing a heavy amount of stress, or your diet needs to be adjusted.
Using a heart rate monitor gives you a chance to make little corrections that will save you not only from not being able to improve, but from getting sick or injured.

Try this out! Do your own tests and you can easily prove that this method of training does work.

**Examples of Workouts using the 180 Formula**

Let’s stick with running and swimming.

Running with a heart rate monitor can make things fun, especially if you run by yourself often. Mix up your workouts so you are running at different heart rates for different days of the week. Let’s say you run 3 times per week, Monday, Wednesday, Friday. Try going Mondays at 10 beats OR LESS per minute (bpm) under your max. Wednesdays run exactly at your max. On Fridays, keep your run between 5-10 bpm below your max.

Set an amount of time you run each time and see if you can improve by running a little further each week but still sticking to your heart rate plan. Or, run a specific distance each time and see if you can improve by going a little faster each week (without going over your max of course!)

For swimming, it’s a little harder. Most monitors work in the water, but it becomes difficult to keep checking your watch while you are swimming. If you typically swim alone, it’s easier to stay aerobic than if you workout with a masters group. Here’s an example of a set you can practice with, staying aerobic without using a monitor:

Check your heart rate by checking your pulse for 6 seconds immediately after finishing your swim, and multiplying by 10.
12x50’s (12 times 50-yard or 50-meter swims)
Odd number 50s: Swim, descend time on 1,3,5,7,9,11 while keeping your heart rate at or below max.
Even number 50’s: DPS- Distance per stroke, long and smooth, 10 bpm or more below max.
And of course, you will want to be checking your progress. This part is easy:

*Swim 1,000 yards (or 800 meters) at your maximum aerobic heart rate, and check your time. Repeat about 3-4 weeks later. You should see your time for this distance swim drop each time. For example, let’s say your 1000 time was 14 minutes the first time. A month later, you may drop to 13 minutes, 30 seconds, swimming at the exact same heart rate. A drop in time should continue each time you check progress. If not, you are probably training too much in the anaerobic zone or eating too much sugar, or just stressing out too much!*

**Racing With a Heart Rate Monitor**

For many competitions, it is impractical to use a heart rate monitor. However, for distance events like a triathlon, it can really help. For the swim, there is no way you would be able to keep track of your heart rate the entire time. Imagine trying to navigate through buoys and other swimmers while swimming straight and at the same time continually looking at your watch! Transitions, however, are a good time to check out your bpm and remind you to breathe deeply before your next leg, and bring your heart rate back down.

**What kind of heart rate monitor should you use?**

While there are several styles of heart monitors, the most accurate and popular have two components: a chest strap that contains the sensor and the transmitter, and a watch-like display, with a receiver, for your wrist. They come with a wide variety of features and can vary quite a bit in price as well.

**Basic Features:** The ability to measure your heart rate is where it starts. Also, since they are worn on your wrist like a watch, many heart rate monitors feature a display that has all the functions of an athletic watch, as well as a feature that allows you to set adjustable heart rate limits. These displays can differ with regards to the size of the digits and the size of the screen, backlighting, water resistance, etc.
Other Features

Sometimes the basics just aren’t enough. Especially if you’re a tech geek, or you just want to get more in depth analysis of your training.

· **Complex Data Analysis:** Higher-end model heart rate monitors can make more complicated calculations and summaries of recorded data. Some heart monitors allow you to automatically record your max heart rate and your lowest heart rate for the workout, and to make more complex calculations, such as overall averages, disparities between high and low rates, etc.

· **MoreSophisticated Data Collection:** Some heart monitors can estimate the number of calories you are burning and measure the ambient temperature. Other options include altitude measurement and estimation of your VO2 (a value related to your body’s oxygen consumption). I’m not crazy about all this sophistication- for example, you may be burning a higher number of calories according to the data, but this doesn’t equate to efficiency.

· **Larger Memory Bank:** Many basic heart rate monitors can record only one workout at a time, forcing you to record your data elsewhere between every use of the device. Heart rate monitors with larger memory banks can act like a mini-computer and record multiple workout results without erasing earlier records. This can be an awesome feature, especially if the monitor is not computer compatible, and recording results must be done manually instead.

· **Computer Compatibility:** If you want to record your results quickly and accurately, it may be better to go for a heart monitor that can be plugged into your computer, though this will likely tack on dollars to your purchase! These monitors come with software that will allow you to save and graph various readings that the monitor has taken over the course of your workouts. After your workouts, you can download your results onto the computer, where you can display and analyze the data dozens of different ways. Fun for some, too much work for others.

· **Coded Signal:** Because heart rate monitors have two separate components, the chest strap and the wrist display, the readings from the sensor on your chest must be
transmitted to your display. If the signal is not coded, then interference caused by jogging with another runner who is wearing a heart monitor can occur, resulting in inaccurate readings. Many monitors also need to be slightly wet to pick up the signal. Occasionally this can get frustrating if you wet the strap before you leave, it dries up and you haven’t started to sweat- the reading may be blank periodically until you really get into your workout.

**Models and Cost:** As far as which model of monitor you should get, it pretty much depends on what you are looking for, and how much you are willing to spend. Prices range from $50 to around $300. Consumersearch.com rated the Polar A3 as the best value, the Polar F11 as the best monitor overall, and recommended the Garmin Forerunner 301 if you are looking for a GPS system as well.

I have had good luck with Polar models over the years.

A great place for more information on various models, as well as discounted prices, is [www.howtobefit.com](http://www.howtobefit.com).

**Conclusion**

Heart rate monitors can be beneficial for peak conditioning for racing, as well as overall health and fitness. If your goal is fat burning or shaving time off your triathlon, or just avoiding injuries and colds, a heart rate monitor is a must-have. Find the right one for you and start training smart today!