

5 Tips for Marathon Pacing

By Matt Fitzgerald

More than 90 percent of marathoners run the second half of the marathon significantly slower than the first. This is not ideal. You'll get your best marathon results if you pace yourself so that you run the second half at the same pace as the first. Here are five tips to help you pace yourself better in your next marathon.

1. Run More Than One Marathon

New research shows that pacing in running races is controlled primarily by the subconscious brain. Throughout each race, your brain calculates the fastest pace you can sustain without endangering your life and uses feelings of fatigue and reduced electrical output to your muscles to ensure that you run no faster. The more experience you have as a runner, the more reliable these calculations become.

Everyone agrees that nothing can prepare you for the fatigue you experience in the final miles of your first marathon. But after you have had this experience, you are better able to pace yourself effectively in future marathons. Most of this learning happens on a subconscious level. Your brain-body makes its way through your second marathon with a better sense of how you should feel at any given point in the race.

So treat your first marathon as a sort of experiment. Pace yourself cautiously but not fearfully and see what happens, knowing that, no matter what happens, you will pace yourself better in the next marathon for having done the first.

2. Set Appropriate Time Goals

Because the marathon distance is so extreme, few runners are able to effectively pace their way through a marathon entirely by feel, as they do in shorter races. You have to hold so much back when running a marathon that the early miles feel very easy--so easy that you could run five or ten seconds per mile faster or slower and it would not feel noticeably harder or easier. But a pace difference of just five or 10 seconds per mile in the first half of a marathon could make the difference between hanging on and falling apart in the second half. So choosing an appropriate time goal, which in turn gives you an appropriate target pace, is very important.

Past marathon performances are the best source of information to use in setting future marathon time goals. In many cases, the most sensible goal is to beat your previous best time by a slight margin. How much of an improvement is realistic depends on how much better your fitness is during your current marathon ramp-up than it was in previous ones. Comparing your performance in recent workouts against your performance in similar workouts done at the same point in past marathon training cycles will give you a good feel for how high to reach.

Another good source of information for setting marathon time/pace goals is performance in shorter races. A race time equivalence table or calculator can be used to generate a predicted marathon time based on a finish time in a shorter event, for example a 10K. There's a good race time equivalence table in Daniels' Running Formula and a good calculator at www.mcmillanrunning.com.

3. Train hard

Like marathons themselves, but to a slightly lesser degree, hard workouts serve to calibrate the teleoanticipation mechanism. Hard workouts expose your body to fatigue in ways that are similar to how marathons do, so they teach your body how fast and how far you can go before fatigue will occur. This internalized feel for your limits will help you pace yourself more effectively on race day.

The more marathon-specific a workout is, the more it will help you in this regard. Therefore, in the final weeks of training for a marathon you should do a handful of very challenging workouts that mimic both the speed and the endurance demands of your coming marathon. Here are three peak marathon workout formats that I recommend:

Long, Hard Run

1 mile easy

20 miles @ marathon pace + 20-30 seconds per mile

Marathon-pace Run

1 mile easy

Pre-fatigued Time Trial

10 miles easy

10K maximum effort

4. Run the First Half by Time, the Last by Feel

The marathon distance is so extreme that it somewhat exceeds your brain's calculative powers. Consequently, as I suggested above, you can't pace yourself entirely by feel in a marathon as you may do in shorter events. Instead you need to pace yourself initially by paying attention to actual pace data. Only after passing the halfway mark can you safely go by feel, running the remaining distance at the fastest pace possible and using pace data only to monitor your pace rather than to actually control it.

Do your very best to run the first mile at exactly your goal pace time. Don't run slower to "save energy" for the final miles, because it's very unlikely that you will be able to make up time at that point, and don't run faster to "put time in the bank," as this usually results in a precipitous decline in pace after 20 miles.

At the one-mile mark, check your split and adjust your pace accordingly in the next mile. Continue trying to nail your target pace perfectly throughout the first half of the race. At that point, you will be able to rely on your teleoanticipation mechanism to guide your pacing the rest of the way.

5. Know the Course

Even pacing is not the same thing as an even distribution of energy. Even pacing becomes a very poor pacing strategy for the marathon when keeping an even pace requires sharp fluctuations in your rate of energy expenditure. Hills, of course, are the complicating factor here. When you're running uphill you have to expend much more energy to hold the same pace you were holding on the level terrain that preceded the hill, and when you're running downhill you can go faster with less energy than you can on level terrain.

You should try to keep your energy expenditure relatively even throughout a marathon, which means you have to slow down when running uphill and speed up when running downhill. This is something you will tend to do naturally, but instead of just taking the hills as they come, you should study the marathon course beforehand so you can factor the placement of hills into your pacing strategy.

For example, almost the entire first half of the Boston Marathon is downhill, while the second half is not. Therefore you should plan to run the first half at a pace that's slightly faster than your target pace for the whole event. By contrast, the San Francisco Marathon is much hillier in the first half than in the second, so a planned negative split is definitely the way to go in this event.

Naturally, the hillier a marathon course, the slower you should expect your finish time to be. So if your main interest is running a fast time, choose the flattest marathon you can find, and then run it like a metronome!

Matt Fitzgerald is the author of several books on triathlon and running, including *Runner's World Performance Nutrition for Runners* (Rodale, 2005) and his newest, *Brain Training for Runners*.