

The Clinic

How Long do Racing Shoes Last?

I have read many articles stating that training shoes should be replaced after 500 to 600 miles. But what about racing shoes?

I have about 170 miles on my current pair, worn for races from a 15:39 5K to a 2:38 marathon. Even though there is little wear on the soles and the shoes look to be in good condition, I don't feel the same "spring" and "bounce" in them I used to.

*Gerald Krawietz, Jr.
Houston, TX*

The longest any pair of racing flats should be used for is a total of 300 miles. This, however, is not true for most people. There are many factors that determine the life expectancy of a racing flat.

To start, I recommend racing flats only to those runners who have good enough biomechanics to wear them without significant injury risk. Runners who, for example, are very large or who pronate excessively shouldn't sacrifice the sturdiness and stability of a training shoe for the lightness of a racing flat.

I also recommend racing shoes only for serious runners. Based on your times, you fit this category, but you should still check your injury history and consider training shoes if you frequently notice injuries following races.

As I said, 300 miles is the most a pair should be worn. Toward the short end of the scale, at times I recommend they be worn for only one season.

One rule of thumb if you're hard on racing shoes is to discard them after ten 10K races. (If you're hard on your training shoes, assume you're even tougher on your racing shoes.)

In general, you should change racing shoes as soon as you feel the "spring" and "bounce" are gone. Racing flats contain a material known as EVA, which deteriorates quickly. (Even if racing shoes are left on the shelf for over a year and not worn, they will lose some of their "springiness," or their ability to absorb and release the impact and energy of foot strike.) As in your case, this usually

happens before there is significant sole wear or other outward signs of breakdown.

In sum, you can never go wrong by replacing racing flats too soon, but you risk injury by erring on the side of too many miles in one pair.

*Douglas Tumen, D.P.M.
Kingston, NY*

Carbohydrate Concentration—Is More Better?

I always read that a carbohydrate concentration of 6% to 8% in sport drinks is best because it's absorbed faster. Suppose, though, I have a drink with a 25% concentration. (I have seen ads for such concentrated drinks lately.) Even if this drink does empty more slowly, wouldn't there be a point at which it would get more carbohydrate to my muscles given its far greater amount? If my stomach can tolerate such a loaded drink, wouldn't it be to my benefit to use it in long workouts?

*Jill Heeter
Chapel Hill, NC*

You may benefit from a drink with a concentration greater than 10%. I emphasize the word "may" for several reasons:

- * Concentrations higher than 10% may cause diarrhea, cramps, nausea, and other intestinal distress.

- * Research has shown that concentrations higher than 10% taken during exercise do not actually boost performance. Carbohydrates improve performance by maintaining blood glucose levels at a time when muscle glycogen stores are diminished. Unless the source of concentrated carbohydrate is constantly available, taking in loaded solutions may result in lower blood sugar 30 minutes after ingestion, which decreases performance.

- * Caloric value may be a concern. Solutions with more carbohydrates also contain more calories, and if you're watching your calories, you might reduce

the amount you drink. This would impair performance because of a lack of fluids.

- * Because a greater carbohydrate concentration is released more slowly, muscles may not get the energy they need until after you've stopped working out. In this situation, the carbohydrates may help to replenish depleted glycogen stores and ready your muscles for your next workout.

- * Part of the purpose of the carbohydrate in sport drinks is to improve taste and thereby encourage you to drink more. You might not do so with drinks of such high concentration and sweet taste.

In general, your muscle glycogen levels are a strong determinant of how long and at what intensity you can exercise. A high carbohydrate diet on a daily basis, with at least 60% of calories from carbohydrates, should adequately replenish your glycogen stores. Complex carbohydrates allow for greater muscle glycogen deposition than simple sugars and they also help to maintain a more stable blood sugar.

Training also enhances your muscles' ability to store glycogen. Further, a fit person uses less glycogen and more fat as fuel during endurance events. This means that as you become fitter, fluids for rehydration are more important than high concentrations of carbohydrates to maintain activity levels.

Individuals vary. Before deciding whether to increase the carbohydrate concentration in your drinks beyond 10%, consider these questions:

- * Are my workouts longer than 90 minutes?

- * Does my diet contain less than the 60% or more of calories from carbohydrates it should?

- * Do I need or will I benefit from the extra calories?

- * Will my gastrointestinal tract tolerate the high concentration?

- * Am I always well-hydrated?

If you answer "yes" to all of these, you may want to experiment with increasing your carbohydrate concentration during exercise.

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