

Is It Really The Shoes?

- By Matt Fitzgerald
- Published Sep 1, 2010
- Updated Nov 30, -0001 at 12:00 AM UTC

There's no disputing the fact that the injury rate in running is very high. But is footwear really to blame?

Written by: Matt Fitzgerald

The injury rate in running is very high. No one knows exactly how high, but whatever the exact number is, it's a greater number than is seen in virtually any other form of exercise. This unfortunate discrepancy was pointed out in a 1998 study involving triathletes, who, of course, do a lot of swimming, cycling and running. Researchers from Strathfordshire University, England, found that among elite triathletes, 62.1 percent of injuries suffered during a five-year period were caused by running, 34.5 percent by cycling, and only 3.4 percent by swimming. Among mid-level triathletes the numbers were 64.3 percent, 25.0 percent and 10.7 percent. And among recreational triathletes there was a bit of a shift toward swimming with a breakdown of 58.7 percent running injuries, 15.9 percent cycling injuries and 15.4 percent swimming injuries.

Why is the injury rate so much higher in running than in swimming and cycling? The traditional explanation is that running causes more injuries because it is a high-impact activity, whereas swimming and cycling are non-impact activities. But in *Born to Run*, journalist Christopher McDougall popularized a provocative alternative explanation first proposed by Steven Robbins in the 1980s: that modern running shoes inflate the injury rate in running by promoting unnatural stride mechanics that place undue strain on the tissues of the lower extremities.

For all the evidence adduced in support of this argument, it remains fundamentally unproven, for one simple reason: only a formal, prospective study comparing the injury rates in shod and unshod runners showing a significantly higher injury rate in shod runners could prove it, and that study has not been done. For my part, based on the evidence currently available, I do believe that running shoes became generally overbuilt in the 1980s and remain so today. Runners are generally more likely to get injured in overbuilt running shoes than in more minimal shoes, although the limited historical data on injury rates suggests that the injury rate in running did not increase between immediately before the era of overbuilt footwear and today. However, I believe it's absurd to suggest that running shoes are entirely to blame—or even mostly to blame—for the high injury rate in running.

To blame it all on shoes, you must overlook other factors that are more than plausible contributors to running's high injury rate, namely (in shorthand): body weight, sedentariness, hard surfaces, and popularity. Let's take a closer look at each of these factors.

Body Weight

A recent study conducted under the auspices of USA Track & Field garnered a lot of attention because it found that stretching had no effect on the injury rate in a large population of runners. But another very interesting finding in that study was almost completely overlooked. One of the very few factors that *did* correlate with injury risk in this study was body weight. Simply put, the heavier a runner was, the more likely it was that he or she would get hurt.

As everyone knows, we've gotten a lot fatter over the past 30 years—runners included. Undoubtedly, this is one contributing factor in the high rate of injury observed in running today.

Sedentariness

The Tarahumara Indians of Mexico have been idealized as a kind of prelapsarian perfect people who run the way humans were meant to run, who run like all humans supposedly used to run, and who never get injured. Chris McDougall believes that the reason for the apparent low running injury rate among the Tarahumara is their minimalist footwear. I'm not so sure. I think a much more important difference between the Tarahumara and Joe American Marathoner is that the former are highly active outside of running in diverse ways, whereas Joe American Marathoner runs 45 minutes a day and sits on his bum or lies prostrate the other 23 hours and 15 minutes.

Being active in diverse ways outside of running actually encourages healthier running. An active lifestyle outside of running helps prevent most of the muscular and postural imbalances that are so common in our society and that contribute to injuries because of reduced joint stability. Ultramarathon man Dean Karnazes told me in an interview that a recent game of tennis left him so sore the next day he could hardly get out of bed. All of that unaccustomed lateral motion on the court challenged muscles that Dean never uses in 100 miles a week of running. Those unassuming little muscles in the ankles, lower legs, groin and hips could help us run healthier if, like the Tarahumara, we did use them sufficiently in other activities to render them strong enough to play a role in stabilizing our joints during running.

Hard Surfaces

Another key difference between the Tarahumara and us is that the former run on dirt, whereas we run mostly on pavement. I believe the fact that the Tarahumara run on surfaces soft enough to permit comfortable running in minimalist footwear is more important than the fact that they wear such footwear. In other words, I believe that pavement is a bigger problem than our shoes, and that we would get injured just as often in huarache sandals on pavement as we do in our running shoes.

This is all speculation, because injury rates on different surfaces have never been formally compared. But recently there was a message board thread on letsrun.com concerning personal experiences in injury rates during periods of running mostly on dirt compared to periods of running mostly on the roads. It was completely one-sided. Virtually every runner who had a basis for comparison and who volunteered his experience said he ran much healthier when running mostly off road.

Popularity

Yet another key difference between the Tarahumara and ourselves is that they are a unique population of running specialists, whereas we are not. There is no evidence to support this dewy notion that today's Tarahumara are the last vestiges of a lifestyle that was once universal to humanity. To the contrary, all of the evidence indicates that their zeal for running is as unique as the ancient Hebrews' zeal for male circumcision once was. Long-distance running was probably never a population-wide practice in early human societies as it is among the Tarahumara. Rather, it was the province of a select few specialists. Consequently, the genetic underpinnings of the gift for long-distance running were never terribly widespread in most human cultures from our very beginnings until today.

The practice of long-distance running is more widespread in our culture today than it has been for centuries, with more than 1.5 percent of all Americans participating in marathons last year. As we know, participation in running has increased tremendously over the past three decades. Most of that growth has come from the bottom, as it were, with millions of slower, non-competitive types flooding into the sport. I've

been a part of the running scene since the early 1980s, and I can tell you this transformation has been striking to witness. When my dad was running road races back in the day, those events were filled with *runners*—relatively fast men and women (mostly men) who ran primarily because they were good at it. They were running specialists. Today the starting corrals are dominated by what we might call non-runners who run. They are not running specialists.

Which is great. However, the same genetic package that gives a person the ability to run relatively fast over long distances also gives a person the capacity to run a lot without breaking down. Naturally gifted runners get hurt much less often on a per-mile basis than less gifted runners. Therefore, the high injury rate seen in running today is certainly due in part to the fact that, as whole, today's running population is less "born to run" than yesteryear's.

Back to Tradition

If weight, sedentariness, hard surfaces, and popularity all contribute to running injuries in our society today, how much blame is left for overbuilt running shoes?

Let's be real: running's high-impact nature is indeed the true reason the injury rate in running is so high. Footwear characteristics do affect the amount of impact the body absorbs during running and how that impact is absorbed, but it does not change the fundamental high-impact nature of the activity. Thus, if you fall for the seductive idea that running shoes are entirely to blame for all running injuries and that getting rid of your shoes will enable you to run infinite distances without injuries forevermore, you're bound to be disappointed.

If you really want to reduce your injury risk as much as possible, by all means, consider your footwear, but also lose weight (if necessary), switch to soft surfaces, and do stuff besides run to strengthen those stabilizing muscles.