THE THERAPY CORNER

Shoes and Blues

As I've noted many times in the past, there are more than a few "conventional wisdoms" all runners seem to be aware of when it comes to proper stretches, amount of training, nutritional factors, and therapies for injuries, to name just a few.

Perhaps one of the longest-standing so-call truisms is the "fact" that you must replace your running shoes after 300-500 miles of use if you want to prevent injuries.

This has been around so long that I suspect it gained currency simply because it sounds logical. Every runner can readily observe that after a few hundred miles of use shoes show an asymmetrical wear pattern of the sole, particularly in the heel. Most often the deterioration is seen along the outside half of the heel. As this increases, there is an obvious tilt of the shoe to the outside, so it would seem fairly obvious that this would be likely to cause a change in the biomechanics of the foot during the running motion. Moreover, it would seem to follow that such a change would likely lead to some kind of injury.

The other factor most people seem to notice is the loss of cushioning provided by the shoe as it ages. This loss – or more accurately, reduction – of cushioning is due to compression of the midsole materials and seems to be fairly consistent across all brands of shoes, regardless of their claims or types of midsole. Since cushioning is associated with comfort and protection of some sore, the natural assumption is that a reduction of this feature means an increase in injury risk.

As a natural-born skeptic, I'm always inclined to raise an eyebrow when I hear one of these quantitative claims. Where did these numbers come from? Is there any scientific evidence to support this 300-500 figure? Does wear and tear in running shoes inevitably lead to increased injury risk?

Unfortunately, there is not a lot of good research out there to answer these questions definitively, in large part because of the multifactorial nature of reasons runners get injured in the first place. Separating out shoe wear from all other possible factors is really difficult without a very large sample of subjects.

One study (2008 Br. Journal of Sports Medicine) did seek to answer the question of whether there is a change in running mechanics due to deterioration of the cushioning properties of shoes. Comparing runners' gait mechanics with new shoes and after 200 miles of wear, they found there was very little difference. The authors speculated that runners' bodies made instinctual changes in their gait patterns to adapt to the changes in the shoes so that external forces were essentially the same. From this, one would expect that there would be no increased risk of injury.

Whether there would be any difference in these findings if the same tests were performed after 500 miles is a good question. I have not found any such studies, nor have I seen any that examine the effects of lateral heel wear on mechanics or injury rates.

My conclusion, therefore, is that there is no hard and fast "shoe mileage rule" to guide one's decision making on when it's time to buy new shoes. I think instinct is your best guide: if you start to feel aches and pains that seem to crop up gradually and you've had your shoes for a while, it may be time to get new ones, and most certainly if it's the case that your heel is significantly worn unevenly.

Just as important, you should pay attention to your every day work or casual shoes. They wear down over time as well, though not as obviously as your running shoes. If you walk in them throughout the

day, they too can lead to overuse injuries as a result of altered gait patterns and should be replaced in a timely fashion.

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