

Treadmill Running Injury Woes

by Stride Longley

Apparently I'm somewhat a harbinger of bad weather, as my previous article doomed we lucky Bostonians with over a foot of snow during a 3-day meteorological hammering last week. If any of you brave souls got out there and hit up the fresh with your favorite running shoes, my advice couldn't have been more apropos.

For the rest of us who begrudgingly tucked our tails and turned toward our local fitness club to find a free treadmill, the hypnotic hum of the machine did little to mask the total difference in feel from running on the road. Those who exclusively use treadmills are somewhat unaware of the subtleties that distinguish their workout of choice from the outdoor variety, but it's exactly those subtleties that lead the rainy day treadmill warriors out there to injury in droves.

Before we get started, I want to clarify one point: I'm not knocking treadmill running. From a cardiovascular standpoint, treadmill running can yield exactly the same (often better) results than running outdoors. Through proper usage, treadmill running can be a great way to improve turnover, build base speed, and serves as a fantastic cross-training method for athletes of other disciplines. Furthermore, the monitor gives the user an incredibly detailed and accurate way of quantifying that progress.

However, for all of treadmill running's merits, the risk of injury for the uninitiated can be high. In my last article I explained the three phases of the gait cycle (heel strike, mid foot weight-bearing, and toe-off), and the way the presence of snow during these phases can lead to injury. These three phases are also present in the treadmill running gait cycle, albeit in different forms. The mechanical changes that take place during these altered phases can often result in the same injury worries as running in snow, so many of the same rules apply; moderation and stretching reign supreme.

Because—unlike firm ground—the treadmill is an unstable moving surface, the three phases of the gait cycle are greatly abbreviated. The belt surface forces the foot into a much more rapid heel-toe transition, and in reality truncates the heel strike phase to near exclusion. Mid foot weight-bearing and toe off also occur at a much more rapid rate, and this rapid transition means the foot has less of an opportunity to pronate. For nearly all runners, this is something like a gift: typical overpronators can often wear less supportive footwear when running on the treadmill than they would outside, and the shock of running on a treadmill is far less jarring. However, this gift comes with a price.

With less pronation (and more emphasis on midfoot weight-bearing) comes a greater tightening of the calf muscles (the gastrocnemius and soleus mentioned last time). In and of itself, this isn't much of an issue. However, the increased muscle tension can dramatically increase the risk of Achilles tendonitis and plantar fasciitis. Compound this by the very common activity of running on an incline (anywhere from 1-10% grade) which further strains the Achilles, and you've got a surefire recipe for injury.

As such, a couple of simple checks and balances will make treadmill running much less risky. Firstly, stretching after your runs is vitally important, as tight calves and a strained Achilles tendon will turn

nasty very quickly. Focus on stretches that isolate each of the muscles in the calf independently, and hold these stretches for at least 30 seconds a side to help nip this issue in the bud. For more stubborn calves, there's a product out there called The Stick which is essentially a handheld foam roller that will help grind out any tension stretching can't fix.

Secondly, mind your footwear. Just because running on a treadmill is less apt to cause shock-related injuries does not mean you suddenly have the freedom to put 1,000 miles on your shoes. Because of the more mid foot prominent foot strike on the treadmill, the mid foot and forefoot cushioning structures in your shoes wear out more rapidly, and as such you will often find your shoes feel very thin outdoors after a season on the old runnin' machine.

Lastly, and this one is the "hammer it home" point: practice moderation. If you've been running exclusively outdoors for 20 years, switch to a treadmill one rainy Wednesday, and keep at it day after day like nothing has changed, you're going to get hurt. If you must run indoors, substitute no more than 1/3rd of your weekly outdoor runs with treadmill running your first time around. Gradually you can increase, but abrupt changes to what has become routine are a killer.

-Stride