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NEW JERSEY COPS

Grin and bear it

Avoid running injuries

BY MATT BRZYCKI

Many cops no doubt run on a regular basis; others certainly run every now and then. The most common site of injury in the body from running is the knee. Therefore, it's worth examining how the likelihood of injury can be reduced.


Matt Brzycki

WHAT THE RESEARCH SAYS

A recent study by researchers at Wake Forest University and East Carolina University looked at factors that play a role in the potential for sustaining a knee injury from running. The study involved 20 runners (7 men and 13 women) who ranged in age from 20 to 55. The subjects had been running 10 miles or more per week and not been injured for at least a year.

The researchers identified three factors that increased the risk of injury. Let's review each one and see what lessons can be learned from this study.

Poor Hamstring Flexibility

When you straighten your knee, the quadriceps (on the front of your thigh) must overcome resistance offered by the hamstrings (on the back of your thigh). If your hamstrings are inflexible or "tight," it will be more difficult for your quadriceps to straighten the knee. What's more, this increased "joint stiffness" reduces the ability of the knee to dissipate shock.

Lessons learned: Stretch all of your major muscles on a regular basis, especially your hamstrings.

Greater Bodyweight

It's no real surprise that being heavier is associated with a greater potential for injury when running. This is true regardless of whether the weight is from muscle or fat.

Most people know that running is a high-impact activity. In fact, the researchers in this study describe running as "a series of collisions with the ground." The impact forces that are encountered by runners are at least several times their bodyweight. Running also exposes the knee to a variety of internal forces that can be quite high. In this particular study, for example, the researchers found that the average peak compressive force in the knee was around 10.4 times bodyweight.

Consider the significance of that for a second. This means that if you're 190 pounds, your knees are literally exposed to a ton of compressive force. (Think of compressive force as a pressure that tries to compact the knee.) And remember, this occurs with each foot strike. Taking a six-foot stride over the course of a three-mile run amounts to 2,640 foot strikes. That's a lot of "collisions."

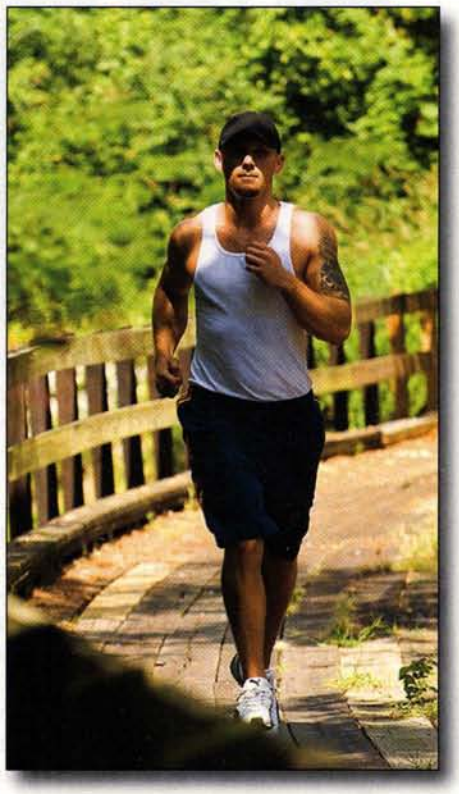
Lessons learned: If you weigh more than you should, dropping a few pounds will reduce the impact and internal forces in your knees when running.

Greater Weekly Mileage

Also not surprising is the fact that running more miles is related to a higher potential for injury. Simply, more running means more pounding.

According to the American College of Sports Medicine, you can improve your aerobic fitness by doing 20 to 60 minutes of aerobic activity three to five days per week. So unless you happen to be a competitive, long-distance runner – a marathoner or triathlete, for example – there's no need for your mileage to be high.

Lessons learned: Cut back on the mileage that you run. If you feel the need to do more aerobic exercise, incorporate activities that have less impact such as swimming and cycling.



THE BOTTOM LINE

Don't get me wrong: I'm not saying that running is dangerous or should be avoided.

What I'm saying is that running is a good activity that can improve your aerobic fitness but the associated impact and compressive forces can be problematic. Incorporating the lessons learned from this study can decrease the likelihood of injury. In a nutshell, stretch your hamstrings, maintain a good weight, keep your mileage to a minimum and do strength training. You'll be doing your knees a big favor.

Matt Brzycki is the Assistant Director of Campus Recreation, Fitness at Princeton University. A former Marine Drill Instructor, he has authored, co-authored or edited 16 books on strength and fitness, including SWAT Fitness (which is available at www.optacinternational.com).