THEFOOTMAN

BY STEVE MANNING

Foot talk

What your feet are trying to tell you about your shoes.

The most important thing to do when buying shoes is to run in them first. Even if it is only fifty metres that will give you some idea of how they will feel in action. Some people are not sure about what to look for when they are running. I usually advise that the shoes must feel like they fit firmly without being tight and without your toes hitting the end. You want them to feel like they are supporting evenly on both sides of your feet. Even if there is a dual density midsole with more support on one side, if you need that kind of support then they will feel like they are supporting evenly. Finally I suggest that they should feel like there is a smooth transition from the heel to the toe.

Your Feet are too big!

Signs that your shoes are too small do not happen until you have worn the shoes in a bit first. An obvious one is where the stitching has given way. This most common sites are past the big toe if the shoes are too short or at either side of the forefoot if they are too wide. When you are buying new shoes you should wear the shoes around for about fifteen minutes and then take off the shoes and your socks. Your skin will remain indented and red for a few minutes where they are too small. The fact that shoes will mold around your feet after a few hours of wear must be taken into consideration. Sometimes it is best to do this test without the insoles in the shoes or to wear very thin socks.

Run the middle road!

The ability of your brain to perceive the position and direction of motion of your joints is called proprioception. This prevents you from falling over and continually turning your ankles when you run over uneven ground. The feedback from your joints sensors tells your central nervous system to respond by contracting certain muscles. When the signal is not the same as your normal gait pattern your brain responds quicker then you can consciously think about it. If it is continually different from what you are used to then you will begin to perceive that things do not feel quite right. Running in a shoe with too much anti-pronation control will make you feel like you are constantly at risk of turning your ankles. Running in a shoe with not enough pronation control will make you feel like you are rolled in all the time. This is totally dependent on the specific needs of every person and how well that particular shoe fulfills those needs. Sometimes it can be quite a subtle thing with the shoes not feeling right even if you do not know why.

The only difficulty occurs if you have been running in a shoe with the wrong type of support. If your shoes are deformed or you have been injured then this may be an indication that you are used to a pathological gait pattern. In these cases the sales assistant watching you run will have to give you feedback on what looks right regardless of the fact that they do not feel like the old shoes.

Sound Advice!

The best way to tell if the biomechanics of a particular shoe does not suit you is to listen to the sounds they make when you run. Energy is required to make noise. That energy that should be used to make you run faster is instead being used to overcome the forces the noise creates. The ideal gait pattern will expend the minimal amount of energy to prevent you falling on your face. Excessive noise indicates that you are pushing yourself backwards every time you land. Besides being inefficient this also creates more pathological injury causing forces to contend with.

The noise at impact and when the forefoot hits the ground is called pounding and slapping. It can be a sign that the runner is overstriding, or can not control the transition from heelstrike to forefoot loading. While it is often the result of poor running form it can also be because the shoe's support is not suitable.

Pronation is the most important motion that occurs when we run. Its purpose is to deflect the forces sideways rather than up the leg. Some studies have indicated that excessive shoe pronation may not be related to increased injury risk and that the strongest predictors of injury are external rotation of the leg and abduction of the knee. Interestingly enough a compensation that occurs when there is inadequate pronation available is external rotation of the leg and abduction of the knee. Shoes with excessive pronation control will cause what looks like pronation but is actually this movement at the hip and knee. Because pronation is also inadequate the peak forces at strike will be excessive. All of this can lead to injury of the leg, knee and hip.

Slapping occurs when the muscles at the front of the shin can not control the motion of the foot as it rolls through from heelstrike to forefoot loading. When this happens excessive force passes up through those muscles further traumatising them. The shoe can be a cause of the slapping when it is too stiff or stable. A certain amount of flexibility is required to smoothly make the transition from heel to toe. Otherwise the shoe will act like a stiff plank that pivots over the ground. The muscles at the front of the shin are contracting eccentrically. That means they are contracting as they are being lengthened to slow the movement of the foot and absorb the forces of strike. If external forces from the shoe are exerting unnatural force on the foot then this motion can not be controlled. This is particularly seen with shoes that are too stable.

Another cause of slapping is when the shoe has an excessive posterior flare. This causes premature strike and excessive rotational velocity of the foot above what the muscles on the front of the leg can control.

So if you are willing to listen to your feet they will help you buy the right shoe to suit you.

How to Listen to your Feet:

Of prime importance is to find the right location to be able to hear your shoes talking. It should be quiet with little background noise and traffic. The surface you run on must be as hard as possible - preferably concrete. Ideally it should be totally flat and consistent without any bumps or dips. Finally you need to run next to a wall that will give you a good echo effect. You must be able to run at normal training pace and get into a comfortable stride pattern. To do this go for a 5km run first so you will be slightly fatigued but warmed up. Then try running at few different speeds to see how the sound changes.

CASE STUDY: More is not better

I had corresponded with a runner about continual injuries they were having with their shins. They started after running a hilly road race that caused aching legs that kept coming back when she ran again. She purchased new shoes that were "the most supportive" available. Despite this, as well as regular physiotherapy and self-treatment, the pain kept coming back after a few kilometres of a run. I suggested that she come in and see me at the shop for a gait analysis. From the first step it was instantly obvious from the sound she was making that she was slapping excessively. Viewed from behind it looked like she had late pronation just prior to heel lift. This caused a flicking action through the air. The first thing we did was put her in a shoe that was less stable. This immediately reduced the amount of noise she made and stopped the pronation from occurring. Each time we tried on a more stable shoe the slapping and pronation returned. With icing and a planned progression back to training as well as a new less stable shoe she was able to become injury free in a few weeks.