

Barefoot Running: Separating Facts From Myth



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In recent months there has been increasing discussion of the merits of runners training barefoot. Much of this arises out of a popular book "Born to Run" by Chris McDougall, a Men's Health writer. Mr. McDougall interviewed a number of prominent researchers and travelled to the Copper Canyons of Mexico in search of legendary runners who were able to run extremely long distances without the advantage of modern running shoes. Vibram, a company known for making durable soles for hiking and trail shoes, has even developed a thin "foot cover" that looks like a human foot, marketed as "Five Fingers". What do we really know about barefoot running?

When a runner ditches their shoes, their running gait undergoes predictable changes. DeWit (2000) found barefoot runners land with a much flatter foot placement, decreasing the pressures at the heel. Stacoff (2000) studied rear foot motion in runners with and without shoes but found that the differences were larger between individual runners than between the same runner in the two conditions (shoes on/shoes off). Research by Divert (2005) found barefoot runners had lower contact time as well as lower flight time, and had a lower passive peak in vertical force. The posterior calf group was also found to be significantly more active just prior to contact, presumably in preparation for increased loads.

It has been postulated that the development and refinement of modern running shoes has shielded the runner from useful proprioceptive and nociceptive feedback and has encouraged a longer stride with primary impact at the heel.

This also leads to an increased demand upon the knee extensor mechanism.

While this could theoretically increase the risk of injuries, it is important to realize that there are no prospective randomized studies that have investigated injury rates in running with shoes vs barefoot.

We can take a few key concepts from the barefoot runner to help even those who choose to keep their shoes on. Many runners overstride, making contact with the heel at a point well forward of the knee. This

can be countered by having the runner take shorter stride lengths while increasing their stride rate to maintain their level of performance. Optimal stride rates for distance running appear to be between 170-180 per minute.

So should you give barefoot running a try? If you do, you may find that running barefoot is most suited to relatively level natural surfaces free from glass and jagged rocks. Barefoot running is also not particularly well suited to temperature extremes. Finally, those who have a history of Achilles' tendon disorders might be wise to avoid the temptation to run barefoot due to the increased demand on the calf group.