

The Surprising New Science of Running

June/July 2010 | Volume 19 | Number 5

Men's Journal

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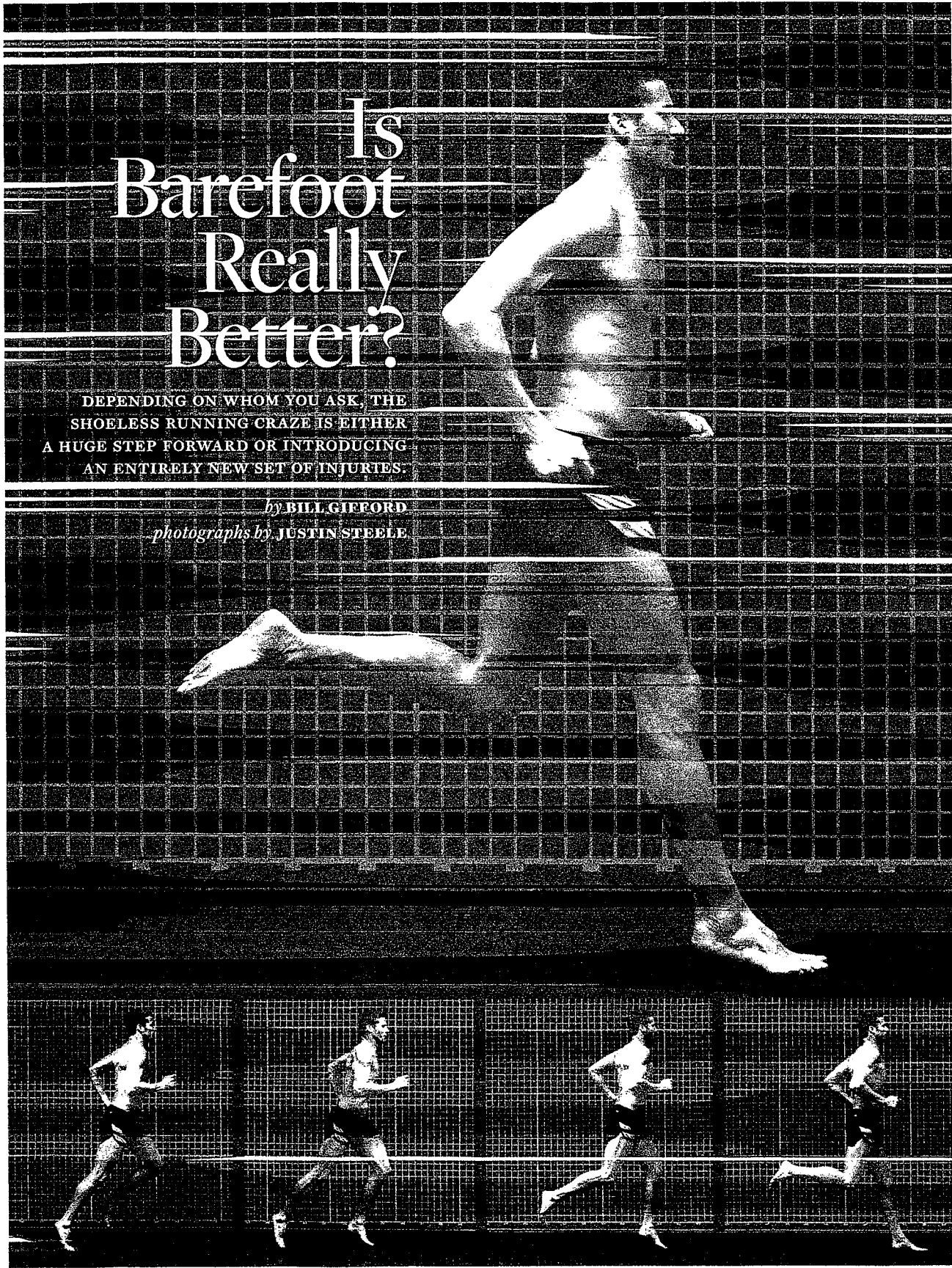


Is Barefoot Really Better?

DEPENDING ON WHOM YOU ASK, THE SHOELESS RUNNING CRAZE IS EITHER A HUGE STEP FORWARD OR INTRODUCING AN ENTIRELY NEW SET OF INJURIES.

by BILL GIFFORD

photographs by JUSTIN STEELE



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MY FRIEND CHRISTOPHER McDougall has really nice feet. "Here, feel them," he said recently, proffering a meaty sole. This was a big jump for us, friendship-wise, but he was right: His feet were smooth, supple, and surprisingly clean, given the fact that he runs 40 to 50 miles per week, predominantly on pavement — and barefoot.

We'd been meaning to go for a run together for a year now, but he'd been a little busy. Last May, he published the surprise bestseller *Born to Run*, which popularized the barefoot-running craze and made him the most controversial figure in running; every time we were supposed to go, he'd get called to New York for *The Daily Show* or something to explain why, as he wrote in his book, "running shoes may be the most destructive force ever to hit the human foot."

That sentence attacked the way we run and touched off heated debate on internet message boards and in shoe stores. The discussion spilled over into the streets, where impassioned barefooters began sacrificing their soles for what they believed was a healthier run. Major manufacturers such as New Balance and Nike moved swiftly to capitalize on the trend with "minimalist" shoes meant to address concerns like broken glass and rusty nails while offering runners a near-barefoot footfall — none more profitably than Vibram, which repositioned a water sock called the FiveFingers and saw its sales skyrocket.

Inevitably a backlash followed as entrenched shoe companies, alarmed

podiatrists, and the running "establishment" cautioned that the legions of barefoot converts risked lacerations, stress fractures, and worse. "If a lot of runners — or all the runners out there in America — [went barefoot] tomorrow," *Runner's World* editor David Willey warned NPR listeners, "the vast majority of them would get hurt very quickly and would have to stop running for a very long time."

All the debate lacked was scientific evidence: No studies have conclusively shown that running in shoes is somehow

he — and more than half of all runners — sustains so many injuries from simply jogging. Despite all the high-tech innovations, like gel-filled insoles, air cushions, and midfoot plates, built into today's near orthopedic shoes, research suggests that 40 to 80 percent of runners will get injured in any given year. So he was excited when he stumbled upon some loose research about the potential benefits of running barefoot, with one particular study citing the way the Tarahumara, an indigenous Mexican tribe, run (in leather sandals) without getting hurt.

THE DEBATE IS NOT ABOUT BARE-FOOT VERSUS SHOE RUNNING; IT'S ABOUT TECHNIQUE.

better than barefooting, or vice versa. But fascinating new research suggests that McDougall may be on to something — just not quite what he thought.

"The wrong debate has been promulgated by journalists," says Daniel Lieberman, a professor in human evolutionary biology at Harvard whose January study in *Nature* sheds a different light on the potential benefits of barefooting. "It's not about barefoot versus shoe running — that's a lifestyle debate. It's really a debate about stride technique."

MCDUGALL HAD BEEN PREACHING the barefoot gospel to me for months. His own "conversion" took place over the past couple of years, after he investigated why

McDougall made a good case, but I remained skeptical. I had a hard time believing that my 6-foot-4, 200-pound friend — whose running style resembled that of a drunken grizzly bear — truly ran well on pavement without shoes. This I had to see.

When I showed up, McDougall insisted I lose my shoes too. I immediately realized that running barefoot on pavement actually feels kind of nice. More surprisingly I began to run differently: Instead of pounding on my heels, the way I would in my cushy running shoes, the pavement forced me to land gently on the center of my foot and even slightly forward, so that my foot and lower leg could absorb the shock from the road.

Achieving Your Optimal Stride

HOW TO INCORPORATE BAREFOOT RUNNING INTO YOUR TRAINING — WITHOUT INJURY

1. UNDERSTAND YOUR GOAL

See the photos at right.

2. LOSE YOUR SHOES

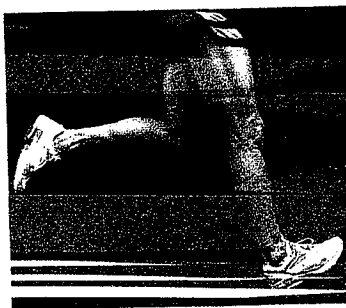
Try taking off your shoes at home. Once you're comfortable going shoeless, do exercises like squats, barefoot.

3. TAKE BABY STEPS

Start with short drills: 20-second barefoot intervals on grass (or in minimalist shoes), working up to eight intervals, twice a week. Or consider the Pose Method: Concentrate on landing on the balls of your feet, never on your heels or toes.

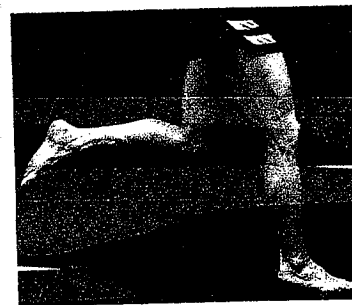
4. KEEP IT LIGHT

Once you're comfortable with barefoot technique, run a quarter mile, then gradually longer. Carry your shoes, putting them on at the first sign of discomfort.



THE WRONG WAY TO RUN

Since most runners take long strides and land on their heels, that would hurt. Likewise, when you run you need to land on the front of your foot to better absorb impact.



THE RIGHT WAY TO RUN

Think of it this way: When you jump off of something, you don't land flat on your feet or on your heels; that would hurt. Likewise, when you run you need to land on the front of your foot to better absorb impact.

Test-Driving Minimalist Shoes

WE TRIED THREE RUNNERS DESIGNED TO IMPROVE YOUR GAIT.

NIKE FREE RUN⁺: The original mass-marketed minimalist shoe, the Free is the transition shoe of choice for runners looking for a barefoot feel. But we found it still sports a fairly well-developed heel that allows for some heel strike; it's like a conventional running shoe with less support (\$85; nikerunning.nike.com).



VIBRAM BIKILA: The Bikila is Vibram's most run-specific version of the FiveFingers. Its articulated rubber tread, slight heel-cup, arch support, and protective toe-bumpers cause hardcore barefooters to cry foul, but we say it's just the right amount of protection to go almost barefoot (\$100; vibramfivefingers.com).



NEWTON GRAVITAS: Put out in 2007, the Newton is basically a running shoe minus the overbuilt heel. "You'll almost feel like you're rocking backward," R&D chief Ian Adamson told us before a run. He was right: the Gravitas allowed us to most easily achieve a proper forefoot running stride (\$175; newtonrunning.com).

Mind & Body

Even more amazing was Chris's stride. In the past, he'd pound out the miles while emitting grunting or wheezing sounds that he'd compared to "Elvis's last shit." Now he lightly padded along, taking short strides, his feet hitting the ground almost silently, then flicking up behind him.

It felt so exhilarating to run barefoot that we cranked out three and a half hilly miles. But then the next day I woke up feeling like someone had driven six-inch nails through each of my calf muscles.

A couple of days later, my calves still throbbing, I walked into the lab of Irene Davis, a biomechanics professor at the University of Delaware. "Three miles is too much!" she scolded. "You should start with no more than a quarter mile."

I'd made a common barefooting mistake: too much too soon. But I hadn't come for a lesson. I wanted to understand why barefoot-style running might actually help me suffer fewer injuries.

Davis explained how muscles and ligaments come into play when we run — nearly all of them are essentially immobilized in modern running shoes. "I think we've trained our feet to be lazy," she said.

"To me, [running] shoes have changed the way we run," Davis said. "If you can

change your stride to a more forefoot-oriented pattern, then you will reduce your risk of injury."

Davis had me run on a treadmill that measured my impact on the ground over each stride. "This is what causes injury," Davis said, circling a spike on a graph illustrating my foot strike with shoes on. "It represents the sharp impact of your heels hitting the ground. It's like a shock wave traveling up your body."

That shock wave was linked to knee and leg injuries, as well as plantar fasciitis, which is what inspired McDougall to give up his running shoes in the first place. The heel strike also causes pronation, the torquing of the foot that many of us buy special running shoes to try to correct. Corrective shoes, says Harvard's Lieberman, "solve the problem that they create." (Davis and Lieberman recently coauthored a study showing that barefoot runners experience a gentler impact.)

And yet, as my calves testified, going without shoes comes with its own pain.

"You're in shoes all of the time, and all of a sudden you're gonna run barefoot?" says champion ultrarunner Scott Jurek. "You need to graduate into it. A training period has to occur."

Jurek uses barefoot running as a part-

time training tool. Once or twice a week, he'll add some barefoot running to his usual track workouts, jogging a mile in the infield or a couple of miles on a beach. "I look at it as strengthening as well as technique training," he says. "I'm not trying to run hard when I'm doing it. It's more of a warm-up kind of effort level."

Still, it's tempting to want to do more. That's what Leon Kelly did. A 33-year-old Manhattan lawyer and fitness buff who became curious about barefoot running last April, Kelly started slowly at first (or so he thought), jogging 20 minutes on grass three times a week. After a month he included pavement in his runs. Even then, he kept to a modest 20 miles per week. But by early July he had to stop running altogether due to knee pain. "It felt so right; I think I ran too hard too soon," he says. "In hindsight I didn't allow my body sufficient time to adapt."

"Anytime you make a change like that, you're just changing the kinds of injuries you're going to get," says Joseph Hamill, a biomechanics professor at the University of Massachusetts. "People are looking for a silver bullet, but there's no panacea."

"If you're doing fine, and you're not getting injured, I'm not going to tell you to change how you run," adds Davis. "Most of the people who've switched to barefoot have done so because they got injured."

"THE FACT OF THE MATTER IS WE have very poor data on what causes people to get injured," says Lieberman. "It's research that should have been done a long time ago." That research is soon under way: Brooks Sports Inc. recently announced two major studies on running motion and injuries, one to be conducted by Hamill. At least one large study from the American College of Sports Medicine has shown that runners who use shorter strides and land more gently — as barefooters tend to do — are less prone to stress fractures. And other research suggests that heavily cushioned running shoes tempt runners to pound harder.

So what does this all mean for everyday runners? As McDougall can attest, barefooting certainly can improve your stride. But most experts agree that people should ease into it over a period of months or even years to allow the muscles and ligaments time to adapt.

One fact remains undisputed even by most barefooters: Shoes help you run fast. "Barefoot technique gets you to think, gets you to become aware of what your body is doing in space," says Jurek. "That's the first element of getting better at any sport. But if you want to win a race, you're gonna wear shoes." ■