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The Battle Over Barefoot Running



The jury remains hung. No one can produce enough data to prove that running “shod” is better for you than barefoot running.

Running barefoot is not a new concept. Ethiopia’s Abebe Bikila, the greatest Olympic marathoner of all time, won the first of consecutive gold medals in 1960—without shoes. England’s Bruce Tulloh ran European record times from 1955—1967, almost always in bare feet.

Interest in barefoot running has been picking up steam over the last 10 years. An Australian PT, Michael Warburton, published an online paper in 2001 regarding barefoot running. According to him, research shows that 100 grams of extra weight on your feet decreases your running economy by one percent. Simple math: two 10-ounce shoes = 5% less efficiency.

Most of us aren’t interested in running economy. We want protection from the elements and harmful objects...cushioning and/or motion control...injury prevention. I have seen numerous patients with “injuries” that stemmed from improper shoe selection for their foot-type. But, scientific studies have a hard time proving that shoes are better than the naked foot. Even in internally placed (tibia—ouch!) accelerometers, the data shows little change in shock absorption or motion-control in shod versus unclad feet.

What, then, are fancy midsoles doing for us? Apparently, they are deceiving the body. With shoes on, your body’s proprioceptive system can disengage. Whereas, with barefoot running, your body precisely engages your vision, your brain, the soles of your feet, your muscles, bones, tendons, and supporting feet and leg structures. They leap to red alert and give you protection from the varied pressures/forces of barefoot running.

In a recent, external study, Kerrigan et al sought to identify the impact of running shod vs. barefoot. The study is limited since footwear was generic, despite the runner’s “foot-type.” Also, joint torques were estimated from external, digitized landmarks (but hey, who wants a strain gauge in their hip?!).

What they did find is that shod running was associated with significantly increased peak torque forces at the hip, knee, and ankle joints. The average results:



- 54% increased hip external rotation torque;
- 36% increased knee flexion torque;
- 38% increased knee varus torque; and
- 13% increased ankle internal rotation torque

Dr. Kerrigan and colleagues suggested such increases in lower-extremity joint torque forces could contribute to the long-term risk for osteoarthritis, especially at the knee and hip. Hip ER torques seem to be in line with the higher incidence of hip osteoarthritis in runners, however, other recent studies have shown a lack of early progression of knee arthrosis in distance runners.

Maybe we all just need to walk barefoot more often around the house, strengthen our foot muscles, and run barefoot a few miles/week on safe, secure surfaces....then put shoes on before hitting the road. Even Abebe Bikila eventually wore Pumas in the Tokyo Olympic Marathon, winning again and setting a new world record (40 days after an appendectomy). Shoes didn’t seem to bother him at all. (Kerrigan DC et al, The Effect of Running Shoes on Lower Extremity Joint Torques, PM R. 2009; 1:1058-1063)

NEWSWORTHY

The Rise in Weight-Training Injuries



Emergency room departments treated more than 970,000 weight training related injuries from 1990-2007. This represents a nearly 50% increase during the 18-year period (Center for Injury Research and Policy (CIRP), Research Institute at Nationwide Children’s Hospital in Columbus, OH).

Summary:

- Men and youth ages 13-24 years had the greatest proportion of weight-training injuries among the general population
- 90% of injuries occurred while using free weights
- Most common MOI = a weight dropping on a person (65%)
- The upper extremity (25%) and the lower trunk (20%) incurred injury more frequently
- 19% of injuries involved the hand
- Sprains and Strains were diagnosed most often (46%)
- Soft tissue injuries were second in frequency of diagnosis (18%)
- >55 years were more likely to be injured on weight-training machines or from overexertion

Kerr ZY, Collins CL, Comstock RD. Epidemiology of weight training-related injuries presenting to United States emergency departments, 1990-2007. Am J Sports Med. 2010;38:765-771

Balance Facts

- Among older adults, falls are the leading cause of injury deaths; and the most common cause of non-fatal injuries/hospital admissions for trauma (CDC 2006)
- In the aged, 54% of fatal falls occurred in the home (NCHS 2004)

NC Statistics:

- Falls are the leading cause of injuries in North Carolinians
- Aged ≥65, hospitalization rate for fall-injuries is 16x that of MVA related injuries
- 75% of NC’s counties are projected to have more people >59 than people <18 by 2030
- 42% of adults report dizziness or vertigo to their MD’s
- 85% of dizziness/vertigo complaints are vestibular system related.

