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Letter to the Editor

DO RUNNING SHOES PROTECT ALL RUNNERS?

Dear Editor-in-Chief,

Running is a prevalent physical activity in today's health-conscious society. Over the course of a 1-mile run an individual will make approximately 1600 footstrikes. At the time of contact between foot and ground, impact forces and pronation place large stresses on the structures of the lower extremity. Exposure to repeated impact loading is linked to the development of runners' injuries, including joint degeneration and osteoarthritis (Dekel and Weissman, 1978). Pronation increases the stress in joints, muscles and tendons and is also connected to runners' injuries (James et al., 1978; Denoth, 1986; Stacoff et al., 1988). To prevent injury, running shoes are designed to reduce both impact forces and pronation. However, these innovations in shoe design might not benefit all runners.

There are two main groups of runners: rearfoot strikers and midfoot strikers. Rearfoot strikers make initial ground contact with their heel, whereas midfoot strikers make initial ground contact with the mid-region of their foot. Eighty percent of runners are rearfoot strikers with the remainder being midfoot strikers (Kerr et al., 1983). So far, running shoe research has been focused only on rearfoot strikers. Thus, there is a good understanding of the shoe design requirements for these runners. For example, research has shown that the hardness and geometry of shoe-soles can be modified to reduce impact forces and pronation in rearfoot strikers (Luethi and Stacoff, 1987; Nigg and Morlock, 1987).

Conversely, midfoot strikers have received no attention from running shoe research. This suggests that there is little understanding of the available techniques to reduce impact forces and pronation in these runners. Indeed, research has shown more pronation in midfoot strikers than in rearfoot strikers for the same shoe (De Wit et al., 1995). Hence, midfoot strikers might be running in poorly designed shoes which predispose them to injury.

Do running shoes protect all runners? Unfortunately, this question can not be answered conclusively. The literature suggests that rearfoot strikers are better protected than midfoot strikers. Future research should resolve this issue and develop a better understanding of the shoe design requirements for midfoot strikers.

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