

Understanding the runner-shoe couple mechanics to prevent running-related injuries

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Running is a popular activity which allows anyone to easily achieve its goals, whether wellness, health, or performance. The counterpart to this running craze is the amount of pain and injuries that novice, amateur and professional runners endure each year. A historical point of view to challenge and prevent these injuries was to improve running shoe cushioning [1].

Shoe cushioning has been studied through different aspect: shoe materials properties [2], biomechanical measurements of impact forces [3], physiological assessment like energetic cost of running [4] and even muscle damage estimation [5]. But finally one of the most reliable topics was still the perception of runners [6]. Thus, on these cushioning properties a lot of inferences and speculations have been made and little information are available on the actual influence of shoe cushioning on running related injury [7].

A recent paradigm shift in the footwear research community has been proposed on the individualisation of running shoes recommendations regarding biomechanics and injury prevention [8]. This new paradigm on the individual running biomechanics pattern seems promising. But again it lacks from direct link to running related injuries. In this regards new emerging technologies like inertial motion units [9] and big data computing [10] could help us fill this gap.

References

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