DIFFERENCES IN IN-SHOE PRESSURES BETWEEN NEW VS. OLD SHOES


College of St. Scholastica

No funding

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BACKGROUND AND PURPOSE: Forty million Americans run leisurely per year, with an estimated 80% of runners reporting a running-related injury in a given year. The impact experienced during running can reach forces 2-3 times a person’s body weight, and is believed to be the cause of 60% of overuse injuries. The current general recommendation for runners is to purchase a new pair of shoes every 300 miles, although some runners wear shoes up to 2,000 miles. Currently, research investigating the relationship between mileage on a pair of shoes and the risk of injury to the runner is limited. Shoe replacement at 300 miles may be influenced by the shoe companies trying to push the latest fashion trends and increase sales, rather than needing new shoes to decrease the risk of injury. The purpose of this study was to examine the pressure and force effects of a new shoe compared to the same older shoe using an in-shoe pressure evaluation system.

METHODS AND MATERIALS: Research design: Observational, laboratory analysis Subjects were recruited via a sample of convenience through the College and local running shoe stores. Subjects were required to be comfortable running on a treadmill, 300+ miles on shoes, 18 years of age or older, no injuries or surgeries within past 12 months and absent of cardiovascular pathology.

ANALYSES: A paired sample t-test was used to compare two sample means (p=.05).

RESULTS: Briefly summarize the main findings derived from your analysis. Statistically significant increases were seen in mean peak pressure and pressure time integral in the new shoe compared to the old shoe condition. There were not any significant differences in the force time integral or the maximum force outcome variables.

CONCLUSIONS: The results from this current study demonstrate that a brand new pair of running shoes present with decreased pressure distribution compared to a runner's old (>300 miles) pair of shoes. Future research should investigate in-shoe pressures throughout the duration of running.

IMPLICATIONS: Purchasing a pair of running shoes beyond the 300 mile period may not be needed to avoid injury if the goal is to decrease pressures under the foot. Conversely, it may be that a "break-in" period is needed to compact the materials that may provide better shock absorption.