

Shoe feature recommendations for different running levels: A Delphi study, Honert, et. al. *PLoS ONE* 15(7): e0236047

doi: 10.1371/journal.pone.0236047

Level of Evidence: 5

Reviewer: Allysa M. Vavra, M.S., MS-IV
Temple University School of Podiatric Medicine

The purpose of this study was to use the Delphi technique to develop and distinguish different categories of running, where each respective category would be characterized by specific recommended running shoes and concomitant shoe features. Until this study, categories and levels of running have only been described by subjective questionnaires in literature and only some features of running sneakers have been extensively studied and agreed upon to be either beneficial, inadequate or of undetermined significance for running. Additionally, it has not been agreed upon by experts which shoe features would be most beneficial for each running level. This study compiled the opinions of experts in running footwear to create a consensus on the definition of different running levels, important shoe gear features and which of those features would be most important for the respective levels of running described.

142 experts in the field were contacted to contribute in this study and each participant was required to have at least 2 years of experience in the field. Three rounds of the Delphi Study were used to gather results for the aforementioned questions, with results enhanced based on expert feedback and Web-Based Surveys. Each expert gave their opinion on the definition of different running levels, shoe gear features and which features were appropriate for the different running levels. Statistical analysis was utilized to determine if characterization of the running groups improved throughout the rounds of the study. Subjective responses were analyzed using median and inter-quartile ranges; this was used to investigate whether there was an increase in the ratings and/or inconsistencies in the responses provided by the experts.

Based on this analysis, running levels were defined and 12 of the 21 footwear characteristics were found to be significant. Of those footwear features, upper breathability, heel-to-toe drop, forefoot bending stiffness, crash pad design and torsional bending stiffness were considered to be important for all 3 of the running levels.

Despite rearfoot midsole hardness being the most searched footwear feature, experts were unable to come to a consensus on its importance in footwear for runners. However, upper breathability is a component that has not been extensively studied. This research can act as a starting point for future studies on why upper breathability is considered one of most significant features of shoe gear for runners.



ACPM
American College of Podiatric Medicine
Education | Research | Advocacy