

A FIELD STUDY OF LOW-TOP VS. HIGH-TOP BASEBALL CLEATS

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There is a shortage of knowledge about how baseball cleat design impacts performance, perception, and ankle range-of-motion of athletes. The purpose of this experiment was to determine if the height of the baseball cleat affected performance, perception of the cleat, and ankle range-of-motion. Thirteen subjects participated in the study with the following characteristics (mean \pm standard deviation): age = 19.5 ± 1.8 , height = 177.8 ± 5.2 cm, weight = 79.2 ± 12.1 kg, and body fat percentage = 14.9 ± 4.5 . Each subject performed three drills: base-running, 5:10:5 “pro agility”, and hitting. Performance time was measured for the first two drills, and perception of comfort, heaviness, shoe climate, stability, and traction was measured for all three drills. Ankle range-of-motion (dorsiflexion, plantarflexion, eversion, and inversion) was measured using goniometry in both cleats, plus socks-only as a baseline control. Shoe height had no significant effect on performance time. The high top cleat was perceived to be hotter, more stable, and heavier, but there were no differences perceived between the two cleats in comfort and traction. The high top cleat significantly reduced the range-of-motion for dorsiflexion, plantarflexion, eversion, and inversion compared to the baseline control. For baseball players concerned about excessive ankle movements during play, these results suggest that using a high-top baseball cleat might reduce ankle range-of-motion without hurting performance.