

Effect of Running Surface on 40-yard Dash Times in High School Football Players

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ABSTRACT

PURPOSE: To allow further examination in how different running surfaces affect sprinting times of 40-yard dashes for high school football players. This can add to the literature due to there being a limited amount of research available for this age group compared to their collegiate and professional counterparts. **METHODS:** Fifteen participants (ages 17-18 years, 68.9±3.0 inches, 176.4±56.1 lbs) were randomly ordered for grass, turf, and track trials. 40 yards were measured using the Measure app (iPhone) on each surface. The Jawku timing system was stationed at the finish, participants were positioned in a staggered 2-pt stance, and started on the signal of the investigator. A 2-3 min break was provided before the next trial (total of three trials on each surface, no less than two days and more than seven days between each surface trial). Repeated measures ANOVA were used with Bonferroni technique to determine significant difference. A Pearson product moment correlation was used to identify association between body weight and time. Significance was set with Alpha ≤.05. **RESULT:** There was a significant difference in times between the trials, $F_{(2,13)} = 24.1, p = .001$ with track (5.50±0.63 sec) significantly faster than grass (5.68±0.61 sec), $p = .001, d = .09$ and turf (5.59±0.58 sec), $p = .020, d = .10$, and turf faster than grass, $p = .005, d = .09$. There was also a significant relationship between body weight and time on grass ($r_{(13)} = .90, p = .001$) and turf ($r_{(13)} = .88, p = .001$). **CONCLUSION:** While the differences in times on each surface was significant, the actual differences between grass and turf as well as track and turf was only .09 seconds and therefore may not translate to a benefit between surfaces. While the difference between grass and track was double this (0.18 sec), caution should be used to interpret performance benefits from track to grass (or turf) since majority of high school football games are not played on an all-weather track and footwear is different.