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## CHANGES IN SPRINT AND JUMP HEIGHT DURING AN ACADEMIC YEAR IN HIGH SCHOOL YOUTH SPORT ATHLETES

Neenan. C, Sawczuk. T, Scantlebury. S., Read. D., Weakley. J., Till, K. Emmonds, S., Jones. B,

**PURPOSE:** To assess changes in speed and jump height in youth athletes over the course of an academic year. **METHODS:** Following institutional ethics approval, sixty-five high school athletes (45 male, 20 female) ( $17.3 \pm 0.6$  yrs, body mass  $73.3 \pm 13.5$  kg, height  $175.1 \pm 9$  cm) participated in the study. Countermovement jump (CMJ) height and 10 and 20 m sprint times were measured at the start, middle and end of the academic year (September, December and May). The best score from 3 attempts for each test was recorded. A linear mixed model was used to assess changes in physical qualities over time. Time was added as a fixed effect and participant was added as a random effect. Magnitude based inferences and Cohen's *d* effect sizes (ES) were used to determine practical significance. **RESULTS:** CMJ showed an *almost certain* improvement between September and December (ES=0.78, *moderate*), and *likely* improvement between December to May (ES=0.01, *trivial*); Table 1. *Almost certain* improvements in 10m sprint time were observed between September and December (ES=0.76, *moderate*), and *possible* improvements between December and May (ES=0.07, *trivial*). Between September to December there was a *possible* improvement (ES=-0.40, *small*) in 20m time and from December to May (ES=-0.25, *small*). **CONCLUSIONS:** High school athletes experience moderate improvements in CMJ height and 10 m sprint, and small improvements in 20 m sprint at the start of the academic year. This is typically the first time these athletes are exposed to a structured strength and conditioning program following a rest period. Changes in CMJ height and 10 m sprint are trivial between the middle and end of the academic year, whereas 20 m sprint continues to improve (small change). This may be due to either an inappropriate training stimulus limiting development of CMJ and 10 m, or a plateau in development of explosive qualities prior to the summer break. **PRACTICAL APPLICATION:** This study provides reference change data for high school athletes in speed and jump height which can be used for comparison by strength and conditioning coaches. Strength and conditioning coaches should monitor the appropriateness of specific training stimuli to facilitate adaptation and development in youth athletes across a range of physical qualities.