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Relation between maximal aerobic power and the ability to repeat sprints in young basketball players.

The aim of this study was to examine the effects of maximal aerobic power (V(.-)O2max peak) level on the ability to repeat sprints (calculated as performance decrement and total sprinting time) in young basketball players. Subjects were 18 junior, well-trained basketball players (age, 16.8 +/- 1.2 years; height, 181.3 +/- 5.7 cm; body mass, 73 +/- 10 kg; V(.-)O2max peak, 59.6 +/- 6.9 ml x kg(-1) x min(-1)). Match analysis and time-motion analysis of competitive basketball games was used to devise a basketball-specific repeated-sprint ability protocol consisting of ten 15-m shuttle run sprints with 30 s of passive recovery. Pre, post, and post plus 3-minute blood lactate concentrations were 2.5 +/- 0.7, 13.6 +/- 3.1, and 14.2 +/- 3.5 mmol x L(-1), respectively. The mean fatigue index (FI) value was 3.4 +/- 2.3% (range, 1.1-9.1%). No significant correlations were found between V(.-)O2max peak and either FI or total sprint time. A negative correlation ($r = -0.75$, $p = 0.01$) was found between first-sprint time and FI. The results of this study showed that V(.-)O2max peak is not a predictor of repeated-sprint ability in young basketball players. The high blood lactate concentrations found at the end of the repeated-sprint ability protocol suggest its use for building lactate tolerance in conditioned basketball players.