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Is the cardiorespiratory fitness affected by height of young girls?

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Abstract

The purpose of the present study was to examine the effect of height in the predicted VO₂max by the Queens Step test among short and tall young girls. A sample of 38 individuals was selected in two stages from a total of 500 individuals and was assigned to two groups of short (n = 20) and tall (n = 18). In order to examine the effect of height in the predicted VO₂max, the Queens step protocol and the incremental treadmill speed test were used. Respiratory exchange was measured continuously throughout the test by an automated open-circuit gas analysis system. The study results showed that tall girls revealed a higher VO₂max on the Queen's step and treadmill tests than short girls (Queen's: 44.09+/-2.66 vs. 38.96+/-1.65; Treadmill: 34.03+/-7.26 vs. 28.15+/-5.09 mL/kg/min). Based on the obtained findings it can be concluded that the higher VO₂max seen in tall girls on the both protocols, may be due to their physiological and physical properties; therefore, it seems that designing of the adjustable steps to the height of subjects for optimizing the estimation of VO₂max is not necessary and other physiological factors may be involved, which require further investigation.

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