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Can the be used to estimate critical velocity in young competitive swimmers?

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ABSTRACT

The aims of the present study were to assess critical velocity using the swimmer curriculum in front crawl events and to compare critical velocity to the velocity corresponding to a 4 mmol·l<sup>-1</sup> of blood lactate concentration and to the velocity of a 30 min test. The sample included 24 high level male swimmers ranged between 14 and 16 years old. For each subject the critical velocity, the velocity corresponding to a 4 mmol·l<sup>-1</sup> of blood lactate concentration and the mean velocity of a 30 min test were determined. The critical velocity was also estimated by considering the best performance of a swimmer over several distances based on the swimmer curriculum. Critical velocity including 100, 200 and 400 m events was not different from the velocity of 4 mmol·l<sup>-1</sup> of blood lactate concentration. Critical velocity including all the swimmer events was not different from the velocity of a 30 min test. The assessment of critical velocity based upon the swimmer curriculum would therefore seem to be a good approach to determine the aerobic ability of a swimmer. The selection of the events to be included in critical velocity assessment must be a main concern in the evaluation of the swimmer.

Key words: Training, evaluation, aerobic ability, critical power.

Key Points

- Critical velocity using 100, 200 and 400 m events was not different from the velocity of 4 mmol·l<sup>-1</sup> of blood lactate concentration.
- Critical velocity using all the swimmer events was not different from the velocity of a 30 min test.
- The assessment of critical velocity based upon the swimmer seemed to be a good approach to determine the aerobic capacity of a swimmer.
- The decision on the events to be analysed must be a main concern in the evaluation of

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