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Abstract

Running Economy: Reproductibility at submaximal high speed

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ABSTRACT

INTRODUCTION: The running economy (RE) has been traditionally determined by measuring the steady-state consumption of oxygen at a specific speed; however few studies has been designed to evaluate the reproductibility of the RE at a high rate of maximum oxygen consumption after repeated submaximal efforts within the same session. **PURPOSE**: The purpose of this study was valuate if the reproductibility of running economy at submaximal high speed could be affected by two previous submaximal efforts. **METHODS**: In this study participated 19 subjects (mean±*SD*; age, 21.8±2.5 years; body mass, 71.0±10.6 and height, 175.2±8.1). During three days of assessment separately for at least 24h of recovery, subjects performed the following tests. Day 1 a maximum incremental test, to determine the intensities. Day 2 a test of running economy at 80% of VO_{2max}. Day 3 a test of running economy at 30, 70 and 80% of VO_{2max} separated by 5 min of recovery. t-student test was conducted to measure test-retest differences in RE the *p* value were set al ≤0.05. **RESULTS**: No significant differences were found in the Running Economy at 80% of VO_{2max} determined in both economy tests RE 220.1± 21.6 vs 219.6±20.6 ($ml \cdot kg^{-1} \cdot km^{-1}$), ICC; 0.92, CV; 4.4 ± 2.6. **CONCLUSION**: The results of the present study showed exercises sessions at 30 and 70 of VO_{2max} performed before the submaximal exercise test (80% of VO2max) did not affected the RE during an exercise test performed at 80% of VO_{2max}.