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RESPONSE TO LONG- VS SHORT-INTERVAL TRAINING IN ROWING: EFFECTS OF AEROBIC CONTRIBUTION

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INTRODUCTION:
Despite high competition intensities, most training programs in rowing involve long, continuous exercise at low to moderate intensities, with interval training often prescribed below race pace. Athletes differ in the relative contributions from the aerobic and anaerobic systems for a given event, but it is unknown how these differences influence training response. The aim of this study was to compare the effect of short-interval training sessions performed near or above race pace with that of current interval training practices in rowing and to determine the modifying effect of differences in aerobic contribution.
METHODS:
Competitive rowers (10 females, 14 males) were assigned to a long-interval or short-interval training group before the competition season. The rowers performed a familiarization and pre-intervention 6-min time trial on a Concept-II rowing ergometer. Assignment was balanced for sex and for aerobic contribution, mean power and peak lactate in the time trial. The training intervention consisted of three 4-wk blocks and followed a polarised training model, with two weekly interval-training sessions on the ergometer. The long-interval group performed interval sessions currently adopted in Australian rowing programs (8- to 20-min intervals at 98-103% of second aerobic threshold). The short-interval group performed 30-s to 3.5-min intervals at higher intensities (88% to 150% maximum aerobic power, i.e., generally at or above race pace). The remaining program was the same for both groups and involved five on-water rowing sessions, three strength-training sessions and 2-3 bike sessions per week. Changes in mean power in the time trial after 12 wk were analyzed with a spreadsheet and assessed for practical importance (smallest important change, 1.0%).
RESULTS:
Performance improved by 3.7 ± 4.2 % and 2.7 ± 3.1 % in the long- and short-interval groups, respectively. After adjustment for a slight difference in aerobic contribution between the groups (83.0 ± 2.6 % and 82.8 ± 4.4 % respectively), short intervals had a clear, possibly harmful effect on TT performance (-0.9, ±2.5 %; mean, ±90% confidence limits) relative to long intervals. However, aerobic contribution had a substantial modifying effect, such that for rowers with a sufficiently low aerobic contribution (<77.5 %), there was a clear, likely beneficial effect of short vs long intervals using the less conservative approach to practical importance (odds ratio of benefit/harm >66).
CONCLUSION:
The inclusion of short-interval training in rowing requires further investigation, but is not recommended in the preseason for most rowers. However, it is potentially beneficially for rowers with a relatively low aerobic contribution to endurance performance.

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