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## Effects of interval time between high-intensity intermittent aerobic exercise on strength performance: analysis in individuals with different training background

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### Abstract

This study aimed to analyze the effect of the time interval after high-intensity aerobic exercise on strength performance in individuals with different training backgrounds. Participants (n = 27) were divided into three groups according to their training backgrounds (aerobic, strength or concurrent) and submitted to eight sessions: (1) determination of

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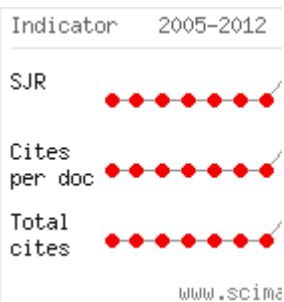
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the peak velocity ( $V_{peak}$ ) during the incremental treadmill test to exhaustion and familiarization of the evaluation of maximum strength (1RM) for the half-squat; (2) 1RM determination; and (3-8) randomly assigned experimental sessions consisting of either a strength exercise (SE), four sets at 80% of the 1RM, in which maximum number of repetitions (MNR) and the total volume performed (TV) was computed, and five sessions consisting of high-intensity intermittent aerobic exercise (100% of  $V_{peak}$  - 1 min:1 min) totaling 5 km, followed by a SE with varying recovery intervals between activities (30, 60 minutes, 4, 8, and 24 hours). Comparisons for MNR and TV were made using two-way variance analysis (group and time interval) with repeated measures in the second factor. When significant differences were detected ( $P < 0.05$ ), a Bonferroni and Dunnet post-hoc test were used. There was an effect of group for MNR, with the Aerobic Group performing a higher MNR compared to Strength Group ( $P = 0.002$ ). Moreover, there was an effect of the time interval for MNR and TV, with reduction after 30 ( $P < 0.001$  for both variables) and 60 minutes intervals ( $P = 0.035$ ;  $P = 0.007$ , respectively) compared to the control condition. Thus, it is concluded that the drop in performance related to the SE activity occurred with the same magnitude and time interval for each of the groups.

Key words: concurrent training; training volume; fatigue

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