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The Effects of Short-term High-Intensity Interval Training vs. general interval training in Rugby Players

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INTRODUCTION:
High-intensity interval training (HIIT) is one of the training methods which designed to optimize the athletic performance through variety exercise type with high exercise intensity, less recovery time (interval), and several bouts. It has been found varying HIIT doses were effective, but there is no indication of the different effects between the short term HIIT and general interval training. The purpose of this study was to investigate the different effects of short-term HIIT and general interval training on speed, power, agility, and endurance of rugby players.
METHODS:
Thirty-two trained male college rugby players (age: 20.66 ± 1.63 years; height: 174.69 ± 5.41 cm; body mass: 79.41 ± 13.15 kg) participated in this study. Written informed consent was obtained from all the subjects before the experiment begin. The subjects were randomly divided into the HIIT group (HG, n=18) and general interval training group (GG, n=14), respectively. The HG took twice a week of high-intensity interval training for 3 weeks and the GG took the general interval training as the original schedule. The Yo-Yo IR2 test, counter-movement jump, 30 m sprint and T test of subjects were measured before (pretest) and after (post test) training, and after the tapering phase which will be the fourth week from the begin of training (retest). Two-way mixed-design ANOVA and LSD post-hoc procedures was used in this study. Significance was set at $P < .05$.
RESULTS:
According to the analysis results of speed, there is no difference both in main effects [group: $F(1, 30) = 1.430$, $p = .241$, ES = .048; time: $F(1, 49) = 1.263$, $p = .267$, ES = .042)] and interaction effects [$F(1, 49) = 2.617$, $p = .112$, ES = .087]. We found similar result in power, there is no difference both in main effects [group: $F(1, 30) = .508$, $p = .481$, ES = .017; time: $F(2, 60) = .844$, $p = .435$, ES = .028)] and interaction effects [$F(2, 60) = .786$, $p = .460$, ES = .026]. The results of agility showed that significant difference were observed in time factor ($F(2, 60) = 52.563$, $p < .001$, ES = .653). Post-hoc test revealed the results of post test (10.38 ± 0.54 s) is better than retest (10.68 ± 0.59 sec), and retest is better than pretest (11.39 ± 0.58 sec). Significant effect was found in the interaction of results in endurance [$F(1, 44) = 6.198$, $p = .017$, ES = .207], and the simple interaction effect showed the results of pretest (1595.56 ± 250.32 m) and retest (1687.78 ± 323.88 m) are both better than post test (1492.22 ± 218.35 m) in HG.
CONCLUSION:
we conclude that there is no significant difference in short term training effects between HIIT with general interval training. Moreover, both two types of short term interval training can only maintain the exercise ability in this study. While HIIT is adopted as a training session, the training-induced fatigue should be considered. However, the advantages of HIIT in time saving and high intensity, which could be the option of tapering strategy.

Topic: **Training and Testing**

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