Compare the Physiological Responses between Fixed and Movable Pedal in the Elliptical Trainer

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Purposes: This study was to compare the submaximal and maximal exercise responses between fixed and movable pedal in the elliptical trainer. Ten healthy male university students proceeded incrementally maximal effort test with 60 rpm strides twice separately by using the fixed and movable pedal in the elliptical trainer. Paired-samples t-test (repeated measure design) and Pearson product-moment correlation were used to find the differences of exercise economy as well as maximal exercise performance between fixed and movable pedal. Results: Comparing the submaximal oxygen uptake and the heart rate, there were no significant differences between fixed and movable pedal. As for the maximal exercise responses, besides the maximal oxygen uptake, the maximal heart rate, the time of maximal exercise performance and the maximal workload in the fixed pedal (185.95±8.40 bpm and 1008.60±257.86 seconds and 271.50±75.22 watts) were significantly lower than which in the movable pedal (188.65±7.13 bpm, 1062.85±241.45 seconds and 287.33±70.43 watts). Conclusion: Comparing to fixed pedal elliptical trainer, movable pedal elliptical trainer is more economical, and it could improve the maximal exercise performance.

The Influence of Different Intensities of Recovery on Anabolic and Catabolic Hormonal Responses after Resistance Exercise

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Purpose: The aim of this study was to examine the effect of active (moderate or low intensity running) and passive (rest) recoveries after resistance exercise on the testosterone/cortisol ratio (T/C) responses. Methods: Using a counter-balanced design, nine recreationally active males (age: 23.9±0.9 yrs of age; height: 172.9±1.3 cm; weight: 68.4±2.7 kg; VO2max: 56.6±1.7 ml/kg/min) completed three tests which included: 1) 65% VO2max running for 30 min (RM), 2) 40% VO2max running for 30 min (RL) and 3) passive rest for 30 min (RP), following 3 sets of four resistance exercises. We measured plasma testosterone, cortisol and calculated T/C ratio before resistance exercise (T1), immediately after either active or passive recovery (T2), and 30 min after recovery (T3). Results: In RM group, T/C ratio was significantly lower (decrease 18.5%, p<.05) at T3 than T1. With RL, T/C ratio was significantly higher (increase 79.1% at T2 and increase 123.2% at T3, p<.05) at T2 and T3 than T1, respectively. Conclusions: Resistance exercise followed by low intensity aerobic exercise is more favorable to enhance anabolic hormonal response during post-exercise recovery.