

Effects of 8 weeks single set versus multiple-set resistance training on upper and lower body muscular strength among untrained males in Iran

ABSTRACT

It is generally accepted that the implementation of high-intensity resistance exercise training can cause several physiological adaptations such as strength and in recent years, many individuals have been attracted to weight training to increase the strength. One of the most important variables which affect strength improvement is training system and two common systems of resistance exercise training are single set and multiple sets. Choosing which training system is better is still open to question. The objective of this study was to examine the effects of 8 weeks single set versus multiple sets resistance exercise training on upper and lower body muscular strength among untrained male adults. Twenty-four healthy untrained males (age: 20.5 ± 1.8 years, body height: 174.9 ± 4.2 cm, body mass: 72.3 ± 3.2 kg, and body fat mass percentage: $\%18.2 \pm 1.3$) were randomly selected and assigned into two groups: single set (SS) and multiple sets (MS). Both groups trained for eight weeks with 70-80% of 1RM with 8-10 repetitions for 3 days per week which SS and MS groups performed one set and three sets of each exercise, respectively. Upper and lower body muscular strength using one-repetition maximum were measured before and after the intervention. Results reported there were significant increases in upper and lower body muscular strength in both groups after the intervention ($p < 0.05$), and upper and lower body muscular strength increased more significantly in MS group compared with SS group (%12.70 increase in SS group and %23.43 in MS group). The results showed MS resistance exercise training had a better effect significantly to improve upper and lower body muscular strength after 8 weeks of resistance exercise training among untrained male adults.

Keyword: Multiple sets; One-repetition maximum; Resistance training; Single set