

Influence of Supervision Ratio on Muscle Adaptations to Resistance Training

The purpose of the present study was to compare the changes in muscle strength in nontrained young males performing resistance training under different supervision ratios. One hundred twenty-four young men were randomly assigned to groups trained under a high (HS, 1:5 coach to athlete ratio) or low (LS, 1:25) supervision ratio. Both groups performed identical resistance training programs. Subjects were tested for maximum bench press 1 repetition maximum (1RM) and knee extensor torque before and after 11 weeks of training. According to the results, only HS lead to a significant increase (11.8%) in knee extensor torque. Both groups significantly increased bench press 1RM load; the increases were 10.22% for LS and 15.9% for HS. The results revealed significant differences between groups for changes in knee extensor torque and 1RM bench press, with higher values for the HS group. There were no differences between groups for the increases in bench press and leg press work volume or training attendance. The proportion of subjects training with maximum intensity was higher in HS for both bench press and leg press exercises. In addition, the distribution of subjects training with maximal intensity was higher for the bench press than for the leg press exercise in both groups. The primary findings of the present study are that the strength gains for both lower- and upper-body muscles are greater in subjects training under higher supervision ratios, and this is probably because of higher exercise intensity. These results confirm the importance of direct supervision during resistance training.

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