TACSM Abstract

Comparison of Ascending and Descending Pyramidal Loading Using the Bench Press

JOEY R MILLER and JASON D MILLER

Human Performance Laboratory; Department of Exercise and Sport Science; Oklahoma City University; Oklahoma City, OK

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ABSTRACT

Individuals that weight train want to know the best way to accumulate a greater amount of volume in a workout to potentially increase muscle hypertrophy and strength. The distribution of the training load during a weight training session could be an important variable in determining total session training volume. The purpose of this study was to examine the importance of load distribution on training volume over three weight training sets utilizing the bench press. We hypothesized that the descending load pyramidal (DP) scheme of distributing training load will produce greater training volumes than the opposite ascending load pyramidal (AP) scheme. Five collegiate-aged males (age = 22±1yrs, height = 71.4±3in., and weight = 186±7lbs) volunteered for the study. The study took place over 3 sessions with the first and second session separated by 48 hours and the second and third by 72 hours. A general 5min warm up on the cycle ergometer was performed at the beginning of all 3 sessions. For the first session, participants determined their 1-repetition maximum (1-RM) for the bench press using a predicted 1-RM protocol. The 1-RM recorded was used to set the training loads for the two sessions that followed. Before session two the DP or AP loading scheme was quasi-randomly assigned. The pyramidal scheme not performed in session two was performed in session three. Both pyramidal loading schemes were 3 sets in duration and included repetitions of 8 (80% of 1-RM), 6 (85% of 1-RM) and 4 (90% of 1-RM) repetitions. Four warm up sets were performed before the pyramidal loading scheme for both the second and third sessions. Each of the 3 sets used in the pyramidal loading were to failure and participants were given two minutes rest between all sets. There was not a significant difference in total repetitions performed ($p=0.89$) between the DP (18±3reps) and AP (18±4reps) repetition schemes. There was a significant difference between the DP and AP repetitions schemes for the 8 repetition (7±1rep vs. 11±2rep, $p<.01$) and the 4 repetition set (6±2rep vs. 2±1rep, $p=0.02$) but not the middle 6 repetition set (5±1reps vs. 5±1reps, $p=0.43$). Nether the DP or AP loading scheme appears provide an advantage in performing more total repetitions over three sets during the bench press exercise. The most important load of a training bout should be performed first in order to reduce the effects of fatigue and allow a greater number of repetitions performed.