

Single Leg Vs Double Leg Workout Case Study

Lower body strength training has previously been shown to increase vertical jump height (1). However, the effect of single leg vs double leg resistance training on maximal vertical jump height has yet to be determined. The objective of this study was to determine if 4 weeks of single-leg resistance exercise was sufficient to increase maximal jump height and how it would compare to a traditional double-leg strength training program.

To measure the effect of a single-leg strength training program subjects were recruited from a local high school boys basketball team and randomly divided into two groups. A two-leg training group (n=9) performed resistance exercise of the lower extremity 2 days a week for 4 weeks while the single-leg training group (n=7) engaged in single-leg strength training 2 days a week for 4 weeks as well. Maximum vertical jump height was measured at baseline then again after the 4-week training program. Paired t-tests were used to determine the effect of both training programs on vertical jump height and a two-way ANOVA was used to determine any difference in effect between the two experimental groups. After training, the two-leg training group increased their vertical jump height by an average of 4.8 cm ($p < .05$) while the single-leg training group increased their maximal jump height by an average of 6.4 cm ($p < .05$). A two-way ANOVA was performed to determine the effect of the exercise modality on increased vertical jump performance, however, no statistical difference was observed between experimental groups ($p > .05$).

These data indicate that a strength training program consisting of either single or double leg resistance training can increase maximal vertical jump height in physically active high school basketball players. Currently there is insufficient data to conclude if one form of resistance exercise (single or double leg) is statistically better than the other at increasing vertical jump height. However, the fact that they have both been shown to be effective supports greater flexibility in training programs where younger athletes may have demands on them that make one form of training more ideal due to time or other constraints.

1: Hartmann H, Wirth K, Klusemann M, Dalic J, Matuschek C, Schmidtbleicher D. Influence of squatting depth on jumping performance. *J Strength Cond Res.* 2012 Dec;26(12):3243-61. doi: 10.1519/JSC.0b013e31824ede62. PubMed PMID: 22344055.