

## **The Effects of Resistance and Plyometric Training on Vertical Jump**

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### ABSTRACT

Several training protocols are available when it comes to increase the height of vertical jump. The purpose of the study was to test two different training protocols to see if they would generate a higher vertical jump at the end of a four week training period. This study tested to see if there was a correlation between two different types of training, resistance training and plyometric training, and the vertical jump. Both produce force and both have been used when training jump height, but which is best: resistance training or plyometric training? Six college-aged subjects who attend the University of Texas at Tyler (five male and one female) were divided into a resistance training group and a plyometric training group. Both groups then participated in four weeks of their designated training regimen. Each subject was tested at the end of each week using a Vertex and Ground Reaction Force plate to measure vertical height and force produced from each jump. We then normalized our data into percentages and inputted those values into an Excel program to create a Regression Line. The results showed that over a four-week period, plyometric training and resistance training saw an increase in vertical jump height, overall. However, the plyometric group increased their jump significantly over the four-week period and increased their force production. The resistance group, while they did increase their vertical, did not increase at the rate that the plyometric group did. Their force production generally speaking, decreased over the four-week period. However, with the data obtained, we can then use this to plan a program for coaches and their athletes. If coaches and trainers only have a short period of time, one month for example, then plyometric training is the best way to train for an increase in vertical jump height. More tests would have to be done to see if resistance training would be more effective than plyometric training over an extended period of time.