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## Effect of Plyometric Training on Agility among College Level Men Cricket Players

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### Abstract

*The present study was to determine the effect of plyometric training on agility of college men cricket players. Thirty male students (n = 30) were randomly selected as subjects and the age was ranged between 19 and 23 years. The selected subjects were randomly assigned into two equal groups such as training group (TG) and the control group (CG) for the strengths of fifteen (n = 15) each. Experimental group underwent respective plyometric training programme for twelve weeks for five days per week and two sessions on each day. The control group did not involve in any special training apart from their regular activities. The agility was taken as a criterion variable for the present study and it was measured by shuttle run. Analysis of covariance (ANCOVA) was used to analyse the collected data. The results revealed that the plyometric training was made significant improvement ( $p < 0.05$ ) in fast running of the selected subjects. The level of confidence was fixed at 0.05 in all cases.*

**Keywords:** *plyometric training, agility, cricket players.*

### Introduction

Plyometrics consists of a rapid stretching of a muscle (eccentric action) immediately followed by a concentric or shortening action of the same muscle and connective tissue. Plyometric drills usually involve stopping, starting, and changing directions in an explosive manner. These movements are components that can assist in developing agility (*Craig, 2004*). Plyometric exercises include jumps, hops, skips, bounds and throws. Plyometric training is an intense form of exercise that helps athletes improve the power of their movements. Plyometric training is used to improve maximum strength and speed of movement which result in an increase of explosive power. Dynamic in nature, these exercises satisfy the basic training principles of specificity, practice with movements similar in nature and speed to the skill or events for which one is trained (*Will, 1984*).

Agility is the ability to change direction or body position rapidly and proceed with another movement (*Gabbard, 1987*). Agility is the physical ability that enables a person rapidly to change body position and direction in a precise manner. Agility is generally defined as the ability to change direction quickly and effectively while moving as possible at full speed (*Singer, 1975*).

### Materials and Methods

The present study was to determine the effect of plyometric training on agility of college men cricket players. Thirty male students (n = 30) were randomly selected as subjects from Government Degree College Kulgam, of Jammu and Kashmir, state. The age was ranged between 19 and 23 years. The selected subjects were randomly assigned into two equal groups such as training group (TG) and the control group (CG) for the strengths of fifteen (n = 15) each. Experimental training group underwent respective plyometric training programme for twelve weeks for five days per week and two sessions on each day. The control group did not involve in any special training apart from their regular activities. The agility was taken as a criterion variable for the present study and it was measured by shuttle run. The collected data were statistically examined by analysis of covariance (ANCOVA). The confidence level was fixed at 0.05 levels, which is appropriate to the present study.

### Data Analysis

Mean and Standard deviation were calculated for agility of each training group. And the data were analyzed by using analysis of covariance (ANCOVA). Statistical significance was fixed at 0.05 levels.

### Results and Discussion

#### ANALYSIS OF COVARIANCE ON AGILITY BETWEEN THE TRAINING GROUP AND THE CONTROL GROUP

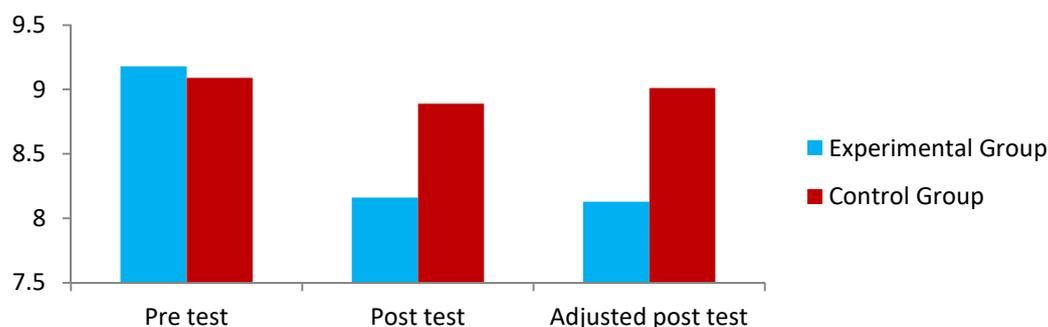
| Test               |      | Training Group | Control Group | SOV | SS   | df | MS   | F      |
|--------------------|------|----------------|---------------|-----|------|----|------|--------|
| Pre test           | Mean | 9.18           | 9.09          | B   | 0.05 | 1  | 0.05 | 0.27   |
|                    | SD   | 0.41           | 0.44          | W   | 5.16 | 28 | 5.16 |        |
| Post test          | Mean | 8.16           | 8.89          | B   | 4.97 | 1  | 4.97 | 14.94* |
|                    | SD   | 0.69           | 0.42          | W   | 9.32 | 28 | 0.33 |        |
| Adjusted Post test | Mean | 8.13           | 9.01          | B   | 5.63 | 1  | 5.63 | 22.01* |
|                    |      |                |               | W   | 6.90 | 27 | 0.25 |        |

\*Significant at 0.05 level of confidence

(The required table value for significant at 0.05 level of confidence with degrees of freedom 1 and 28 is 4.20 and degree of freedom 1 and 27 is 4.21)

The analysis of covariance on agility among experimental and control group were described in table no 1. The pre test mean values of agility of training and control groups were 9.18 and 9.09. The obtained 'F' value of 0.27 was lesser than the table value of 4.20, there was insignificant among the groups in pre test result of agility. The post test means of the groups were 8.16 and 8.89 respectively, and the obtained 'F' value of 14.94 was greater than the table value, and there was a significant difference in agility between the training and control groups in agility among the male college cricket players. The obtained adjusted post test F value also greater the table value of 4.21 for df 1 and 27 required for significant at 0.05 level. The pre, post and the adjusted post test mean values of the experimental and control groups on agility were graphically represented in Figure 1.

**Figure 1**



**Figure 1: The pre, post and adjusted post test mean values of experimental group and the control group on agility.**

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## Discussion

The result of the present study pointed out that there was a significant difference in agility due to twelve weeks of plyometric training. The current study also utilized twelve weeks programme duration with two sessions per week and found that agility increases due to plyometric training. The findings are also in agreement with the findings of Brown (1986) that plyometric exercises improve the agility. Renfro (1999) measured agility using the T-test with plyometric training while; Robinson and Owens (2004) used vertical, lateral and horizontal plyometric jumps and showed improvements in agility. McNeal (1998) also recommended that resistance training is more ideal to improve jumping ability. Several studies suggested that plyometric training is very valuable for determining the variables such as explosive power Campo et al., (2009). From the results of the present study and literature, it is concluded that dependent variable such as agility was significantly improved due to the plyometric training.

## Conclusion

The result of the study revealed that the training group has significant improvement in agility among college male cricket players after the plyometric training protocol. It was also concluded that the plyometric training is one of the best training methods for improving the agility as well as the physical fitness of cricket players.

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