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## Impact of circuit resistance training on leg strength among University players from different discipline

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### Abstract

The purpose of the study was to find out the effect of circuit resistance training programme on leg strength among university players from different discipline. To achieve this purpose, 30 male university represented players from different discipline were randomly selected as subjects from various departments of Tamilnadu physical education and sports University, Chennai Tamilnadu. The age of the subjects were ranged from 18 to 25 years. The subjects were further classified at random into two equal groups of 15 subjects each in which group - I underwent circuit resistance training programme for three days per week for eight weeks and group - II acted as control who were not undergo any special training programme. The selected criterion variables such as leg strength were assessed before and after the training period. The collected data were statistically analysed by using Analysis of Covariance (ANCOVA). From the results of the study it was found that there was a significant improvement on leg strength for circuit resistance training group when compared with the control group.

**Keywords:** Circuit Resistance Training, Leg Strength and University Players

### Introduction

Sports training is a scientifically based and pedagogically organized process which through planned and systematic effect on performance ability and performance readiness aims at sports perfection and performance improvement as well as at the contest in sports competition. Strength is a vital factor on which the sports performance depends. Depending upon the magnitude and type of resistance to be tackled in various sports, the sportsman of different sports and different level and type of strength to achieve good performance.

The essentials of weight training (strength training) with regularity and gradual increase in training intensity (principles of over loading) supported by good nutrition and adequate rest. Strength training does not mean one will loose flexibility or become muscle bound. Studies on Olympic athletes have shown only the gymnasts have better flexibility than the weight lifters. Weight training does not slow down muscular movement. It has also been established that increase in muscular speed (Explosive power) accompanies an increase in muscular strength.

### Methodology

The purpose of the study was to find out the effect of circuit resistance training programme on leg strength among university players from different discipline. To achieve this purpose, 30 male university represented players from different discipline were randomly selected as subjects from various departments of tamilnadu physical education and sports university, Chennai Tamilnadu. The age of the subjects were ranged from 18 to 25 years. The subjects were further classified at random into two equal groups of 15 subjects each in which group - I underwent circuit resistance training programme for three days per week for eight weeks and group - II acted as control who were not undergo any special training programme. The selected criterion variables such as leg strength were assessed before and after the training period. After assessing the 1 RM test for all students in experimental group, the training load was fixed accordingly. Then the experimental group underwent circuit resistance training programme for 3 days per week for 8 weeks. The control group did not participate in any

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special training programme on strenuous physical activities apart from their day to day activities. The experimental group underwent their circuit resistance training under the instruction and supervision of the investigator.

The data were collected on selected criterion variables such as

leg strength was measured by using back lift with the dynamometer at before and after the eight weeks of circuit resistance training as pre and post test. Analysis of covariance (ANACOVA) was applied to find out significant difference if any between the experimental and control group.

**Table 1:** Analysis of covariance for leg strength for circuit resistance training group and control group

Variable Name	Group Name	Circuit Resistance Training Group	Control Group	'F' Ratio
Leg Strength	Pre-test Mean $\pm$ S.D	35.67 $\pm$ 1.35	35.93 $\pm$ 1.45	0.265
	Post-test Mean $\pm$ S.D.	38.13 $\pm$ 1.41	35.87 $\pm$ 1.51	18.14*
	Adj. Post-test Mean $\pm$ S.D.	38.23	35.77	38.12*

\*Significant at 0.05 level of confidence.

(The table values required for significance at 0.05 level of confidence for 1 and 18 & 1 and 17 are 4.41 and 4.45 respectively).

### Results

Table-I showed that the results of the study there was a significant difference between experimental and control group on leg strength. Further the results of the study showed that there was a significant improvement on leg strength due to eight weeks of circuit resistance training programme. However the improvement was in favour of experimental group.

### Conclusions

1. There was a significant difference between experimental and control groups on selected criterion variables.
2. There was a significant improvement on leg strength. However the improvement was in favour of experimental group due to eight weeks of circuit resistance training programme.

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