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## Impact of soccer training on leg strength and cardio vascular endurance of soccer players

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### Abstract

The purpose of the study was to analyze the effect of soccer training on leg strength and cardio vascular endurance of soccer players. To achieve the purpose of the study, thirty female subjects selected from various classes and departments of Annamalai University, Chidambaram, Tamilnadu, India were selected as subjects at random in the age group of 18 years to 25 years. The selected subjects were randomly assigned into two equal groups of 15 subjects each. Soccer training group – I and control group – II. The selected criterion variables are leg strength and cardio vascular endurance. The statistical tool were used for the present study is ANACOVA. The data collected prior to and after the experimental periods on leg strength and cardio vascular endurance on soccer training and control group were analyzed. It was concluded that due to the effect of twelve weeks of soccer training the leg strength and cardio vascular endurance of the subjects was significantly improved.

**Keywords:** soccer training, leg strength and cardio vascular endurance

### Introduction

#### Soccer Training

A number of effective football fitness training drills can be applied to the average person to get into great physical shape. Football is one of the sports that require the athlete to be fit in all areas. Strength, speed, agility and stamina are all qualities and abilities that a football player must possess. As such, football training drills are designed to get the football player in optimal shape.

#### Tire Runs

Sprinting through tires laid in a zig-zag pattern will help to develop speed, agility, endurance and leg strength. Begin at one end of the tires, and step into each tire with one foot, one at a time. Do this as quickly as possible, making sure to lift your knee up high after stepping out of each tire to avoid tripping. Once you get to the end of the laid out tires, repeat the process by sprinting through the tires back to starting position.

#### Box Jumps

This involves jumping up onto a large stable box approximately two to three feet high (depending on your height). Box jumps promote power and muscle building as the vertical power jumps do, but with a little variation. Begin by standing at the foot of the box, about eight inches away. Jump up onto the edge of the box, stand up straight, and then jump back down to starting position. Repeat 10 to 20 times.

### Methodology

The purpose of the study was to analyze the effect of soccer training on leg strength and cardio vascular endurance of soccer players. To achieve the purpose of the study, thirty female subjects selected from various classes and departments of Annamalai University, Chidambaram, Tamilnadu, India were selected as subjects at random in the age group of 18 years to 25 years. The selected subjects were randomly assigned into two equal groups of 15 subjects each. Soccer training group – I and control group – II. The selected criterion variables are leg strength and cardio vascular endurance.

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**Table 1:** Selection of Tests

S. No.	Variables	Test Items	Unit of Measurement
1	Leg Strength	Leg Lift Dynamometer	Kilograms
2	Cardio Vascular Endurance	Cooper's 12 min run/walk test	Meters

**Analysis of Data**

The data collected prior to and after the experimental periods on leg strength and cardio vascular endurance on soccer

training and control group were analyzed and presented in the following table –I

**Table 2:** Analysis of covariance on leg strength and cardio vascular endurance of soccer training and control groups

Variable Name	Group Name	Control Group	Soccer Training Group	F ratio
Leg Strength	Pre-test Mean $\pm$ S.D	100.33 $\pm$ 6.76	101.33 $\pm$ 10.96	0.058
	Post-test Mean $\pm$ S.D.	101.46 $\pm$ 5.91	128.20 $\pm$ 5.99	51.27*
	Adj.Post-test Mean $\pm$ S.D.	101.43	128.23	142.24
Cardio-Vascular Endurance	Pre-test Mean $\pm$ S.D	2376.66 $\pm$ 183.71	2410.66 $\pm$ 186.52	0.25
	Post-test Mean $\pm$ S.D.	2394.00 $\pm$ 184.34	2994.66 $\pm$ 213.40	67.44*
	Adj.Post-test Mean $\pm$ S.D.	2398	2989.98	69.05

Significant at .05 level of confidence

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

The adjusted post-test means on leg strength of soccer training and control groups are 128.23 and 101.43 respectively. The obtained 'F' ratio value is 51.27 of leg strength was greater than the required table value of 4.21 for the degrees of freedom 1 and 27 at 0.05 level of confidence. Hence it was concluded that due to the effect of twelve weeks of soccer training the leg strength of the subjects was significantly improved.

The adjusted post-test means on cardio vascular endurance of soccer training and control groups are 2989.98 and 2398.00 respectively. The obtained 'F' ratio value is 67.44 of cardio vascular endurance was greater than the required table value of 4.21 for the degrees of freedom 1 and 27 at 0.05 level of confidence. Hence it was concluded that due to the effect of twelve weeks of soccer training the cardio vascular endurance of the subjects was significantly improved.

**Conclusions**

Based on the results of this study the following conclusions were drawn by the investigator.

It was concluded that the selected criterion variables such as leg strength and cardio vascular endurance was significant difference between soccer training group and control group of soccer players.

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