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# Effect of Agility Ladder Training on Selected Fitness Parameters among Football Players

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**Abstract**

*The purpose of the study was to determinate the effect of agility ladder training on selected fitness parameters among football players. The selected variables are agility, balance and speed. For this study, twenty four men football players in the age group of 21 to 28 years were selected from Dr. Sivanthi Aditanar College of Engineering, Tiruchendur and Dr. Sivanthi Aditanar College of Physical Education, Tiruchendur were randomly selected as participants. The subjects selected for this study were randomly divided into two groups namely experimental group and control group. The experimental group was given agility ladder exercises in respective of three alternative days in a week for 6 weeks duration in addition to the regular physical education activities of the department as per the curriculum. But the control group was not allowed to participate in the agility ladder training program but perform their regular exercise program. The collected data were statistically analyzed with dependent "t" test to find out the significant improvement between pre and post-test means of experimental and control groups and analysis of covariance (ANCOVA) was used to find out the significant difference between the experimental and control groups. In all the cases to test the significance, 0.05 level of confidence was used.*

**Keywords:** Agility, Ladder Training, Fitness, Football.



## Introduction

In sport, agility is characterized by fast feet, body coordination during change of direction, sports skill performance, and reaction time/ ability. It is an amalgam of balance, speed, strength, flexibility and coordination. Although a performer's agility relies heavily on the acquisition of optimum sports technique, it can also be enhanced by specific conditioning (http:// www. pponline.co.uk). Let's consider in more detail the process involved in developing fast feet. One of the major tools available for this purpose is the floor-based rope ladder. A wide variety of running, hopping and jumping drills can be carried out in all directions, using the rungs of this ladder, which is laid flat on the ground. Such drills enhance foot speed and upper body agility, just like any other aspect of sports performance, by progressive overload. Speed through a floor ladder can indicate much about a player's quickness (http:// www.pponline.co.uk). Agility is the ability to change position and direction rapidly, with precision and without loss of balance. It depends on strength, speed, balance and coordination (Brian, 2007). Balance is the body's ability to keep its equilibrium when stationary or moving, keeping our equilibrium means keeping our centre of gravity over our area of support. Speed may the most exciting ingredient in sport. It requires rapid acceleration, which involves the contraction of fast-twitch muscle fibers. Speed of movement includes reaction time and movement time (Brian, 2007).

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## Methodology

The purpose of the study was to determinate the effect of agility ladder training on selected fitness parameters among football players. The selected variables are agility, balance and speed. For this study, twenty four men football players in the age group of 21 to 28 years were selected from Dr. Sivanthi Aditanar College of Engineering, Tiruchendur and Dr. Sivanthi Aditanar College of Physical Education, Tiruchendur were randomly selected as participants. The subjects selected for this study were randomly divided into two groups namely experimental group and control group. The experimental group was given agility ladder exercises in respective of three alternative days in a week for 6 weeks duration in addition to the regular physical education activities of the department as per the curriculum. But the control group was not allowed to participate in the agility ladder training program but perform their regular exercise program. The data collected from the two groups were statistically analyzed with dependent 't' test to find out the significant improvement between pre and post-test means of experimental and control groups and analysis of

covariance (ANCOVA) was used to find out the significant difference between the experimental and control groups. In all the cases to test the significance, 0.05 level of confidence was used.

**Results and Discussion**

The analysis of dependent 't' test on the data obtained for agility of the pre-test and post-test means of experimental and control groups have been analyzed and presented in Table I.

**Table I.** Mean and dependent 't' test of experimental and control groups on selected variables

| Variables | Mean | Agility Ladder Training Group | Control Group |
|---|---|---|---|
| **Agility** | Pre test Mean | 10.21 | 10.28 |
| | Post test Mean | 10.14 | 10.27 |
| | **'t' test** | 8.75* | 1.02 |
| **Balance** | Pre test Mean | 35.57 | 35.52 |
| | Post test Mean | 38.89 | 35.53 |
| | **'t' test** | 9.01* | 0.05 |
| **Speed** | Pre test Mean | 7.29 | 7.36 |
| | Post test Mean | 7.23 | 7.37 |
| | **'t' test** | 9.45* | 1.48 |

*Significant at 0.05 level of confidence (11) = 2.201

The obtained 't' ratio value on agility, balance and speed of experimental group is higher than the table value, it is understood that the agility ladder training has made significant improvement on agility, balance and speed. However, the control group has not made significant improvement as the obtained 't' value is less than the table value; because it was not subjected to any specific training. The analysis of covariance on the data obtained on anaerobic endurance and anaerobic power due to the effect of varied pace stair step training and control groups have been analyzed and presented in Table II.

**Table II.** Analysis of covariance of experimental and control groups on selected variables

| Variables | Adjusted post test mean values | | Sources of Variance | Sum of Square | df | Mean Squares | 'F'-Ratio |
|---|---|---|---|---|---|---|---|
| | Experimental Group | Control Group | | | | | |
| Agility | 10.17 | 10.23 | Between | 0.27 | 1 | 0.27 | 30.77* |
| | | | Within | 0.18 | 21 | 0.01 | |
| Balance | 38.63 | 35.56 | Between | 65.67 | 1 | 65.67 | 54.37* |
| | | | Within | 25.37 | 21 | 1.21 | |
| Speed | 7.26 | 7.33 | Between | 0.03 | 1 | 0.03 | 65.79* |
| | | | Within | 0.01 | 21 | 0.0004 | |

*Significant at .05 level of confidence, df (1, 21) = 4.32

Table II shows that the obtained 'F' ratio value are 30.77, 54.37 and 65.79 which are higher than the table value 4.32 with df 1 and 21 required to be significant at 0.05 level. Since the obtained value of 'F' ratio is higher than the table value, it indicates that there is significant difference has made among the adjusted post- test means of agility ladder training group and control group on agility, balance and speed.

**Conclusion**

From the analysis of the data, the following conclusions were drawn.

1. The experimental groups namely agility ladder training had achieved significant improvement on agility, balance and speed when compared to control group.
2. Significant differences were found among the experimental group toward improving the selected criterion variables such as agility, balance and speed when compared control group.
3. Agility ladder training was found to be better in improving the selected dependent variables such as agility, balance and speed when compared to the control group.

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