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**S. Manikandan**  
Assistant Professor,  
Dept. of Physical Education &  
Sports Sciences, Annamalai  
University, Tamil Nadu, India.

## Impact of hill running on speed endurance performance among elite soccer players

**S. Manikandan**

### Abstract

The purpose of the study was to find out the effect of hill running on selected variable speed endurance among elite soccer players. To achieve the purpose of the study, 24 elite soccer players participating in the inter university tournaments from Animalia University, Chidambaram, Tamilnadu. Were selected at randomly. The age of the subjects ranged from 18 - 25 years. The selected subjects were divided into two equal groups. Group I underwent hill running for three days per week over a period of twelve weeks and Group II acted as control group. Speed Endurance (150m run test) was selected as dependent variables. The pretest and posttest randomized control group design was used as experimental design. Pretest data was collected before the training programme and post-test was collected immediately after the training session. The collected data were statistically analyzed through analysis of covariance (ANCOVA). In all the cases 0.05 level of confidence was fixed to test the hypothesis. The result of the study reveals that there was significant improvement on selected dependent variable due to the effect of hill training and there was a significant difference between experimental and control groups of high school elite soccer players.

**Key words:** Hill Training, Speed Endurance and Soccer.

### 1. Introduction

Sports training leads to physiological changes in almost every system of the body, particularly with the skeletal muscle and the cardio respiratory system. The changes resulting from training are influenced by the frequency, duration and particularly by the intensity of the training program. The effects of training are specific to the type of exercise performed, the muscle group involved, and to the type of training program used. The specificity of training and exercise has the two broad physiological bases, metabolic and neuro-muscular.

This number may vary according to the design of the program. This type of training is an excellent choice for developing general, all round physical and cardiovascular fitness. Generally, a good training programme will involve each muscle group' getting worked by several different exercises. The number of exercises per muscle group depends on the training effect to be achieved, the desired volume of work to be completed during a training session, the desired intensity of effort and the structure of the programme. To improve or maintain a desired level of physical fitness, there is a need to constantly administer an adequate training intensity while exercising. The major importance of physical training is to cause biological adaptations in order to improve performance in specific task. To enhance physiological improvement effectively and to bring about changes, specific exercise and over load must be followed by exercising at level above normal.

Hill running has a strengthening effect as well as boosting your athlete's power and is ideal for those athletes who depend on high running speeds - elite soccer, rugby, basketball, cricket players and even runners. To reduce the possibility of injury hill training should be conducted once the athlete has a good solid base of strength and endurance.

Speed endurance training is important for many sports - not just the pure distance events like running, swimming and cycling for example. While the type and amount of endurance training will change according to the specific demands of the sport, even some traditional strength and endurance based games demand a solid aerobic base. (Yokozawa, 2005)

**Correspondence:**  
**S. Manikandan**  
Assistant Professor,  
Dept. of Physical Education &  
Sports Sciences, Annamalai  
University, Tamil Nadu, India.

**1.1 Purpose of the Study**

The aim of the present study was to determine the Influence of hill running on selected speed endurance among elite soccer players.

**2 Methodology**

*Selection of subjects*

To achieve the purpose of the study, 24 elite soccer players participating in inter university elite soccer players from

Animalia University, Chidambaram, Tamilnadu were selected at randomly. The age of the subjects ranged from 18-25 years. The selected subjects were divided into two equal groups. Group I underwent hill running for three days per week over a period of twelve weeks and Group II acted as control group, the following variables were selected for this study such as, speed Endurance(150m run test),

**2.1 Analysis of Data**

*Analysis of Covariance on Criterion Variables of Experimental Groups*

Criterion Variable	Adjusted posttest means		Source of Variance	Sum of Squares	df	Mean Squares	'F'- Ratio
	Experimental Group	Control Group					
Speed Endurance	21.9	22.58	B	2.47	1	2.47	10.98*
			W	4.72	21	0.22	

\*Significant at .05 level of confidence.

(The table value required for significance at 0.05 levels with DF 1 and 21 is 4.32).

From the Table, the obtained F-ratio for adjusted posttest means were 10.98\* and 91.72\* respectively which are more than the table value of 4.32 for DF 1 and 21 required for significant at 0.05 level of confidence. The results of the study indicate that there was significant difference between the adjusted posttest means of experimental and control of speed endurance of elite soccer players.

**3. Conclusions**

From the obtained results the following conclusions were drawn.

1. It was found that there was significant improvement on Speed endurance of experimental group due to the effect of hill training programme.
2. And also it was concluded that there was significant difference on experimental group then compare to control group due to the effect of hill training.

**References**

1. Burne, what research tells the coach about Washington DC: AAHPER publications 2008, 1974.
2. Mizrahi J, Verbitsky O, Isakov E. Shock accelerations and attenuation in downhill and level running. Clinical Biomechanics 2000; 15:15-20.
3. Yokozawa T, Fujii N, Ae M. Kinetic characteristics of distance running on downhill slope. International Journal of Sport and Health Science, 2005; 3:35-45.
4. Kim W, Voloshin AS. Dynamic loading during running on various surfaces. Human Movement Science 1992; 11:675-689.
5. Tulloh B. The role of cross-country in the development of a runner. New Studies in Athletics 1998; 13: 9-11.
6. Sarah R. Riedman. The Physiology of Work and Play: A Text Book in Muscular Activity: New York: Halt, Rinehart and Winston, Inc. 1950, 515.