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## Effect of extensive interval training on selected physical variables of college athletes

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### Abstract

The purpose of the study was to investigate the effect of Extensive Interval training on selected Physical variables of College Athletes. To achieve the purpose of the study, twenty subjects were randomly selected from the B.P.E.S and B.P.Ed Athletes of Noida College of Physical Education, Dhoom Manikpur, G.B Nagar, UP and were divided into two equal groups. Group I (n = 10) acted as control group and Group II (n = 10) acted as experimental group. Group I under gone regular activity and Group II under gone interval training for 8 weeks. The age of the subjects ranged from 18-24 years. Physical fitness variables such as Speed and Strength were selected as criterion variables for the study. The data were collected from both the groups prior to the interval training and after the training period (8 weeks). Analysis of covariance (ANCOVA) was used to find out the significant difference, if any, differences between control and experimental groups on selected Physical variables of College Athletes. The level of confidence was fixed at 0.05 level to test the significance. From the results of the study, it was concluded that there was a significant difference in Speed, whereas there was no significant difference in Muscular Strength between Control and Experimental group of College Athletes.

**Keywords:** Athletes, ANCOVA, exercise, sports physiology, sports medicine

### Introduction

Interval Training involves a repeated series of exercise work outs interspersed with rest or relief periods. Due to the discontinuous nature of this form of training the exercise intensity and the total amount of work performed can be greater than that of the continuous training. Sports Performance is indeed an aspect of complex human performance which has several aspects or dimensions. These disciplines include sports medicine, sports physiology, sports training, sports bio-mechanics, sports psychology and so on.

Speed plays a vital role in most of the games. All the track events are conducted against time, speed mostly in the form of acceleration speed as an important factor.

Exercise strengthens the heart muscles. The number of repetitions of exercise should be increased with the person's adaptation to the training, and that increase depends on the distance of the race, the speed attained and time taken to recuperate.

### Objectives

The purpose of the study was to assess the effect of Extensive interval training on selected physical variables of College Athletes.

### Method

Twenty Athletes studying Bachelor of Physical Education and sports sciences, (B.P.E.S) and Bachelor of Physical Education (B.P.Ed) Athletes of Noida College of Physical Education, Dhoom Manikpur, G.B Nagar, UP were selected at randomly as subjects for the study. The selected subjects were of age group ranging from 18 to 20 years. The subjects were randomly divided into two groups and each group contained 10 subjects. Group I acted as control group and Group II acted as experimental group. Group I underwent regular training and Group II underwent interval training for 8 weeks. The interval training was selected as an independent variable whereas Physical (Speed and Strength).

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**Analysis of data**

The data were collected from both the groups prior to the training and after the training (8 weeks). Analysis of covariance (ANCOVA) was used to find out the significant differences, between control and experimental groups on physical variables of Athletes. In all the cases, the level of confidence was fixed at 0.05 level.

Variables	Test & Apparatus
Speed	60 meter run
Strength	Sit ups

**Speed**

The Analysis of covariance on speed of control and experimental group of College Athletes have been presented in Table 1.

**Table 1:** Analysis of Covariance on Speed between Control and Experimental Group of College Athletes

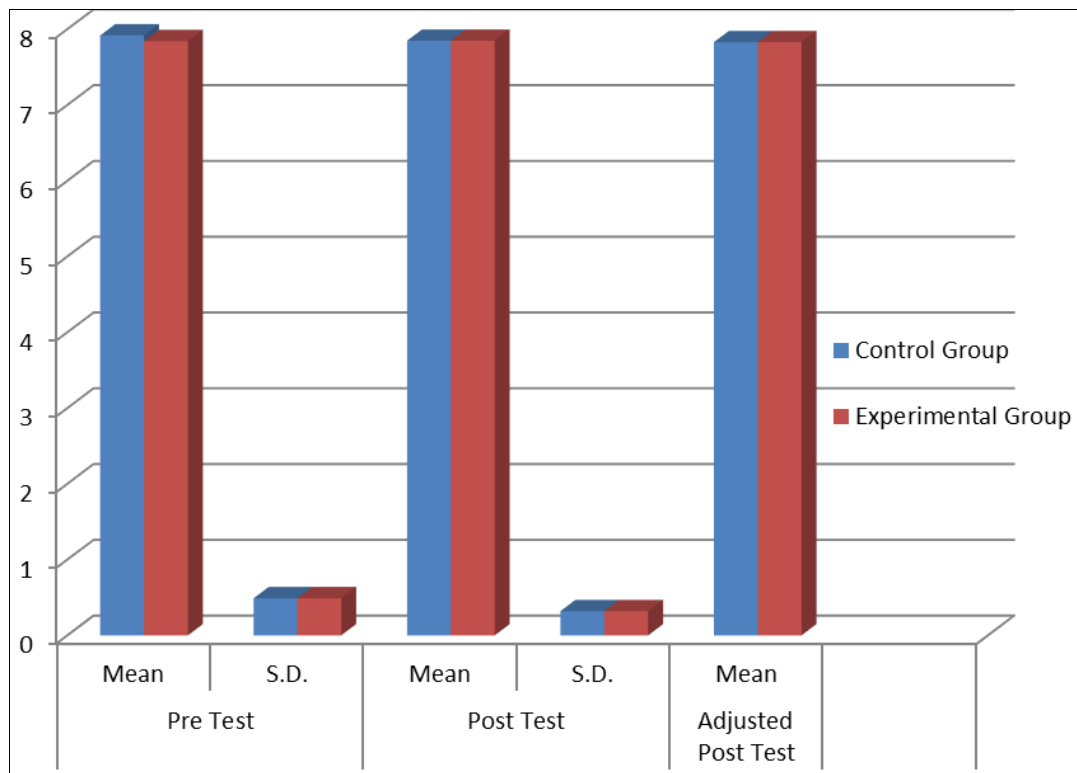
Speed		Control Group	Experimental Group	Source of Variance	SS	dF	MS	F Ratio	Table Value
Pre-Test	Mean	7.918	7.842	Between	0.027	1	0.27	2.08*	4.41
	S.D.	0.49	0.49	Within	2.403	18	0.13		
Post-Test	Mean	7.848	7.848	Between	1.73	1	1.73	21.63*	4.41
	S.D.	0.32	0.32	Within	1.49	18	0.08		
Adjusted Post Test	Mean	7.829	7.829	Between	1.473	1	1.473	29.46*	4.45
				Within	0.82	17	0.05		

\*Significant at 0.05 level of confidence.

Table 1 showed that the pre-test mean values of Speed for control and experimental group were 7.918 and 7.842 respectively. The obtained 'F-ratio' value of 2.08 for pre-test scores of control and experimental group on speed was less than the required table value of 4.41 for significance with df 1 and 18 at 0.05 level of confidence. The post-test mean values of speed for control and experimental group were 7.848 and 7.252 respectively. The obtained 'F-ratio' of 21.63 for post test scores of control experimental group on speed was more than the required table value of 4.41 for significance with dF 1 and 18 at 0.05 level of confidence. The adjusted post-test mean

values of speed for control and experimental group were 7.829 and 7.829 respectively. The obtained 'F-ratio' value of 29.46 for adjusted group was less than the required table of 4.45 for significance with df 1 and 17 at 0.05 level of confidence.

The result of the study showed that there was a significant difference between control and experimental group on Speed of Athletes. The mean values of control and experimental group on Speed of College Athletes are graphically represented in Fig. 1.



**Fig 1:** Speed

**Table 2:** Analysis of Covariance on Muscular Strength between Control and Experimental Group of College Athletes

Speed		Control Group	Experimental Group	Source of Variance	SS	dF	MS	F Ratio	Table Value
Pre Test	Mean	31.8	31.8	Between	8.45	1	8.45	0.32	4.41
	S.D.	6.09	6.09	Within	478.5	18	26.58		
Post Test	Mean	32.3	32.3	Between	11.25	1	11.25	0.44	4.41

	S.D.	5.4	5.4	Within	459.7	18	23.54		
Adjusted Post Test	Mean	32.87	32.87	Between	0.62	1	5.49	0.12	4.45
				Within	87.88	17	5.17		

\*Significant at 0.05 level of confidence.

**Strength**

The Analysis of covariance on strength of control and experimental group of College Athletes have been analyzed and presented in Table 2.

Table 2 showed that the pre-test mean values of Muscular Strength for control and experimental group were 31.8 and 33.1 respectively. The obtained ‘F-ratio’ value of 0.32 for pre-test scores of control and experimental group on muscular strength was less than the required table value of 4.41 for significance with df 1 and 18 at 0.05 level of confidence. The post-test mean values of muscular strength for control and experimental group were 32.3 and 33.8 respectively. The

obtained ‘F-ratio’ of 0.44 for post test scores of the control and experimental group on muscular strength was less than the required table value of 4.41 for significance with df 1 and 18 at 0.05 level of confidence. The adjusted post-test mean values of muscular strength for control and experimental group were 32.87 and 33.23 respectively. The obtained ‘F-ratio’ value of 0.12 for adjusted group was less than required table of 4.45 for significance with df 1 and 17 at 0.05 level of confidence.

The result of the study showed that there was no significant difference between control and experimental group on Muscular strength of college Athletes.

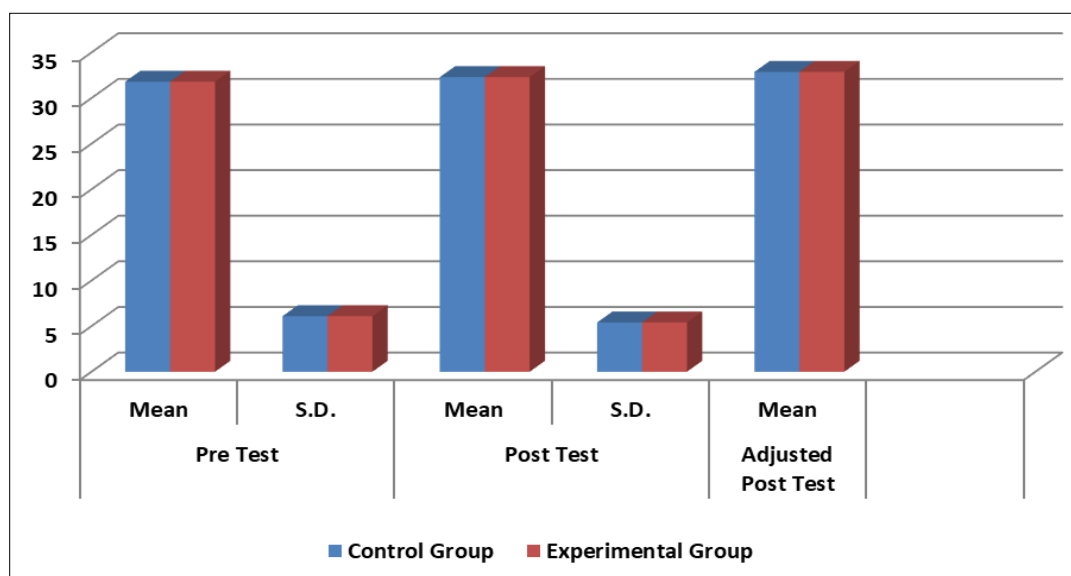


Fig 2: Strength

The mean values of control and experimental group on Muscular strength of College Athletes are graphically represented in Fig. 2.

**Conclusion**

It was concluded that Interval training had significantly improved speed and did not show any significant effect on muscular strength of College Athletes.

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