

## **Effect of Interval Training on Selected Physical Fitness Variables Among Hockey Players**

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### **Abstract:**

Few studies have reported on the amount of Interval Training changes in speed, agility and balance, and no studies of this nature have focused on hockey players. The purpose of this study was to examine the effect of interval training on selected physical fitness variables of speed, agility, and muscular strength and endurance of hockey players. The selected Thirty (30) school hockey players were selected from Chennai only. Thirty(30) school hockey players were participated in a 12-weeks training program. The subject age ranged from 12 to 14 years. The thirty subjects were randomly assigned into two equal groups, Group I was considered as interval training Group (ITG-n=15), Group II was considered as control group (CG-n=15). The control group was instructed to maintain their regular daily activities and to avoid any additional strenuous physical activity during the study. The training duration per session for the experimental groups was 40-60 minutes, 3 days in a week till 12 weeks. Physical fitness variables completed of the both groups at zero time and after 12 weeks of interval training intervention group in control group. In the present study Speed (10.22), Agility (15.10) and Muscular strength endurance (11.17) were changed significantly. Speed, Agility and Muscular strength endurance after regular practices interval training is beneficial for school hockey players. It was concluded that a interval training improved physical fitness for hockey players. Therefore interval training covered in this study are beneficial for the school hockey players.

**Keywords:** Interval Training, Physical Fitness, Hockey Players.

### **INTRODUCTION**

Interval training gives aerobic and anaerobic fitness, blood pressure, cardio vascular health, cholesterol profiles, abdominal fat and body weight while maintaining muscles mean. One method of training that allows appropriate metabolic systems to be stressed is interval training. Interval training is based on the concept of more work which can be performed at higher exercise intensities with the same or less fatigue. Interval training involves a repeated series of exercise work bouts interspersed with rest or relief periods. This method is popular among athletes because it allows the athlete to exercise at higher relative intensities during the work interval they are possible with training. Programs also can be designed to improve speed and anaerobic endurance, as well as aerobic endurance, simply by means of modification in the exercise intensity and length of the work and relief intervals (GBaquet., 2004).

Interval training adheres to the principle of adaptation. Interval training leads to many physiological changes including an increase in cardiovascular efficiency (the ability to deliver oxygen to the working muscles) as well as increased tolerance to the build-up of lactic acid. These changes result in improved performance, greater speed, and endurance. Interval training also helps avoid injuries associated with repetitive over use, common in endurance athletes. Intervals also allow an athlete to increase training intensity without overtraining or burn-out. Adding intervals to a workout routine is also a great way to cross training of an exercise routine (Gahete.,2019).

Interval training has been an integral part of athletic training programs for many years because a variety of sports and recreational activities require for school hockey players therefore this study was investigate.

## **METHODOLOGY**

The purpose of this study was to find out the effects of interval training on physical fitness parameters of school hockey players. Thirty school hockey players were randomly selected and they were assigned into two equal groups. Each group consisted of fifteen subjects. Pre test was conducted for all the thirty subjects on physical fitness parameters of speed, agility, and muscular strength. Speed was measured by 30 yard dash in 1/100 of the seconds, Agility was measured by shuttle run Illinois agility in 1/100 of these conds and Muscular strength endurance was measured sit ups test in counts. This initial test scores formed as pre test scores of the subjects. Experimental group I was exposed to interval training, and group II was control. The control group was not exposed to any experimental training other than their regular daily activities. The experimental period was 12 weeks. After the experimental treatment, all the subjects were measured on the physical fitness variables. This final test scores formed as posttest scores of the subjects. The data collected from the experimental and control groups on selected dependent variable was analyzed statistically by paired 't' test to analyze the significant difference if any between the pre and post test.

## **TRAINING PROTOCOL**

The subjects of group - I underwent their respective training programme as per schedule of twelve weeks under the supervision of research along with the qualified hockey coaches (SDAT) who provided motivation, advice and encouragement to the players. Eachday the training schedule was conducted only in the morning session that lasted for 60 minutes. Prior and after every training session players of experimental groups had fifteen minutes of warm-up and fifteen minutes of warm down exercises involving jogging, mobility and stretching exercises. 30mts, 60 mts, 90 mts 1 km run interval sprint 1 to 4 weeks 50% intensity, 1 single repetition, recovery in between 30 second, each repetition set 1. 30mts, 60 mts, 90 mts 1 km run interval sprint 5 to 8 weeks 60% intensity, 2 single repetition, recovery in 60 seconds between each repetition set 1. 30mts, 60 mts, 90 mts 1 km run interval sprint 9 to 12 weeks 70% intensity, 3 single repetition, recovery in 120 seconds between each repetition set 1.

## **STATISTICAL ANALYSIS**

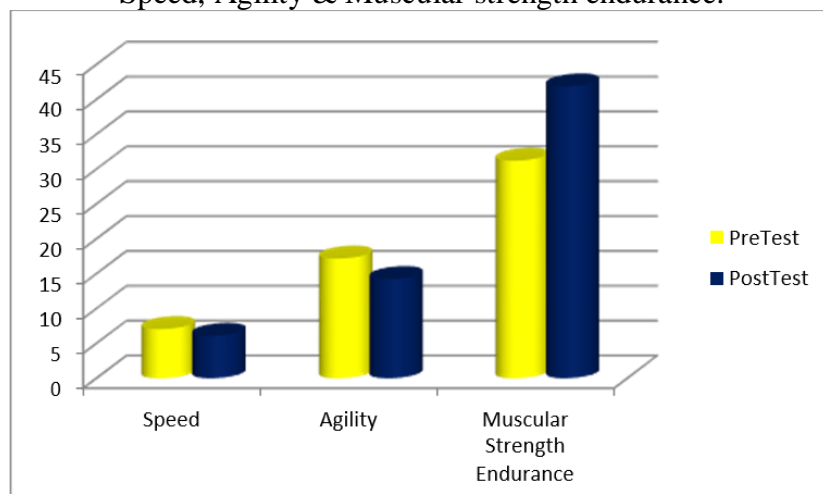
The data were analyzed using statistical package for social sciences (SPSS) for windows version 16.1. Paired t-test was carried out between suspension training and control groups. To find out significance difference between the means of pre and post test of the groups and are presented in table I & II.

**Table-I** Table show in comparison of difference in pretreatment and posttreatment Scores among interval Training.

Variable	Test	Mean	Mean Difference	Std. Error of the mean	DF	't'	Table value
<b>Physical Fitness Variables</b>							
Speed	Pretest	7.05	0.96	0.96	14	10.22*	<b>2.145</b>
	Posttest	6.09					
Agility	Pretest	17.16	2.93	0.96	14	15.10*	
	Posttest	14.23					
Muscular strength endurance	Pretest	31.20	10.66	0.77	14	11.17*	
	Posttest	41.86					

\*Significant at 0.05 level for the degrees of freedom 1 and 14, 2.145

Table I suggests the obtained 't' values of the interval training group on criterion measure of 10.22 (speed), 15.10 (agility), 11.17 (muscular strength endurance). The obtained 't' values to be significant at 0.05 level for degree of freedom 1,14 the required critical value was once 2.145. Hence the obtained 't' values on the selected criterion variables greater than the required critical value, it was concluded that the interval training programme produced enormous improvement mean difference.

**Figure 1:** Bar diagram showing the pre, post means values of Interval training group (ITG) on Speed, Agility & Muscular strength endurance.**Table-II** Table Showing Comparison of Difference In Pre Treatment And Post Treatment Scores Among Control Group.

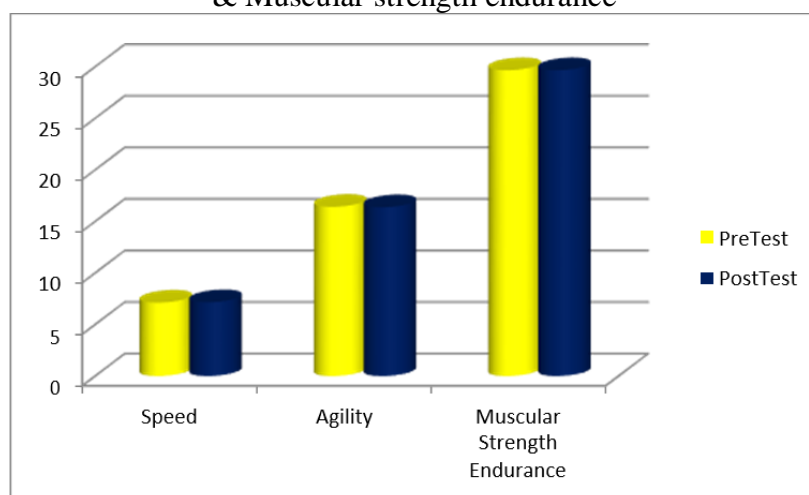
Variable	Test	Mean	Mean Difference	Std. Error of the mean	DF	't'	Table value
<b>Skill Related Fitness Variables</b>							
Speed	Pretest	7.12	0.03	0.096	14	2.02	<b>2.145</b>
	Posttest	7.15					
Agility	Pretest	16.41	0.04	0.255	14	1.31	
	Posttest	16.37					
Muscular Strength endurance	Pretest	29.66	0.00	1.06	14	1.87	
	Posttest	29.66					

\*Significant at 0.05 level for the degrees of freedom 1 and 14, 2.145

Table II suggests the obtained 't' values of the control group on criterion measure of 2.02 (speed), 1.31 (agility), 1.87 (muscular strength endurance). The obtained 't' values to be significant at 0.05 level for degree of freedom 1, 14 the required critical value was once 2.145. Hence the obtained 't'

values on the selected criterion variables less than the required critical value, it was concluded that the control group no differences.

**Figure 2:** Bar diagram showing the pre, post means values of Control group (CG) on Speed, Agility & Muscular strength endurance



## DISCUSSION:

A sour result study experimented the effect of interval training on physical fitness parameters among hockey players. The results of this study indicated that interval training is more efficient to bring out desirable changes over the speed, agility and muscular strength endurance of hockey players. The finding of the present study had similarity with the findings of the investigators referred in this study. Mathisen et al., (2014) the training sessions with short interval at maximum effort, interspersed with adequate recovery time, results in improvements in both interval (acceleration) and in agility performance in adolescent female athletes. Bonnette et al., (2011) indicate that a two-day a week sprint, plyometric and agility training program over four weeks can have positive results on the speed, endurance and power of soccer players. Athletics coaches and trainers should consider implementing an agility, plyometric and interval training program for the development of speed, agility and muscular strength endurance in their athletes, even if they have admitted amount of time for training outside of hockey players.

## CONCLUSION

Interval training has significant effect on physical fitness parameters such as speed. agility and muscular strength endurance. It means that interval training increase speed agility also increase muscular strength endurance therefore increase the interval training to given the hockey players.

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