



## Effect of Cardiac Fitness Exercises on Selected Physiological Variable

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### ABSTRACT

The purpose of the study was to determine the effect of cardiac fitness exercises on pulse rate of school students of Indore. Fifty male subjects were selected from the Indore local school student were between the chronological age of 13 to 18 years. They were divided into two groups (25 each) one experimental group and another control group. The pre test and post test design was selected for collecting the data. The criterion variables selected for the study was on the basis of assessment of effect of cardiac exercises on pulse rate of school going children through trained persons. The training was organised at morning for 5 days per week for five weeks for 45-60 minute. Result shows that the cardiac fitness exercises significantly affect the pulse rate of school students.

### KEYWORDS :

### INTRODUCTION

A person's pulse rate increases with physical activity. A sedentary (inactive) lifestyle is one of the top risk factors for many diseases related to heart. Being active is key to having a good health with healthy heart. A great goal is aiming to be active in as many ways as possible throughout the day and reduce the amount of sitting for long periods. Heart is a muscle and needs exercise to keep it fit so that it can pump blood efficiently around body. Without regular physical activity, the body slowly loses its strength, stamina and ability to function well. People who are physically fit, as measured by a high level of cardio-respiratory fitness (CRF), are less likely to develop heart disease and less likely to die from any cause, a study shows.

Cardiovascular fitness is the ability of the heart and lungs to supply oxygen-rich blood to the working muscle tissues and the ability of the muscles to use oxygen to produce energy for movement. This type of fitness is a health-related component of physical fitness that is brought about by sustained physical activity. A person's ability to deliver oxygen to the working muscles is affected by many physiological parameters, including heart rate, stroke volume, cardiac output, and maximal oxygen consumption. The relationship between cardio-respiratory endurance training and other categories of conditioning requires a review of changes that occur with increased aerobic or anaerobic capacity. As aerobic/anaerobic capacity increases, general metabolism rises, muscle metabolism is enhanced, haemoglobin rises, buffers in the bloodstream increase, venous return is improved stroke volume is improved and the blood becomes more able to adapt readily to varying demands. Each of these results of cardiovascular fitness/cardio-respiratory conditioning will have a direct positive effect on muscular endurance and an indirect effect on strength and flexibility.

### LIMITATIONS

The study was delimited to school students between the chronological age 13-18 years of male of Indore.

### The study was further delimited to the pulse rate only.

Certain factor likes life style; routine works, diet etc. may have affected the result of this investigation acted as limitation for the study.

### AIM & OBJECTIVE

The aim of the study was to determine the effect of cardiac fitness exercises on pulse rate of school students of Indore.

### METHODOLOGY

Fifty male subjects were selected from Indore who were the students of the school. The subjects were divided into two groups (25 each) one experimental group and one control group for this study. In experimental group the subjects were those who had taken cricket coaching classes in evening and attended cardiac fitness camp in morning during summer vacations of their schools and control group were those who had taken cricket coaching classes only in evening with experimental group but they were not exposed in any cardiac

training in morning. The subjects were between the chronological age of 13 to 18 years. The pre test and post test design was selected for collection of data.

In order to test the hypothesis of the study, the criterion variables selected for the study was on the basis of assessment of effect of cardiac exercises on pulse rate of school going children by using trained persons. After measuring their pulse rate, the subjects were exposed for cardiac fitness exercises in their school ground in morning 6:30 am to 7:30 am. Pulse rate was measured by trained persons before and after five weeks of training during sufficient rest and laying position before cardiac training and after completion of cardiac training. The subject were performed cardiac exercises fitness programme in following manner- on Monday they performed slow and continues running for half an hour, Tuesday- Agility, Wednesday- flexibility, Thursday- rest, Friday- Speed, Saturday- Endurance as main work out. The experimental group during every training session performed Warming up and limbering down before and after main work out. There had one day full rest i.e. Sunday and having rest only in the morning on Thursday. The subject's everyday performed Warming up and limbering down. The 25 subjects (experimental group) assembled in the one of the famous school campus of Indore at morning for 5 days per week for five weeks for 45-60 minute.

### RESULT AND DISCUSSION

**Table No 1: SIGNIFICANCE DIFFERENCE BETWEEN PRE-TEST AND POST-TEST MEANS OF EXPERIMENTAL AND CONTROL GROUP IN PULSE RATE**

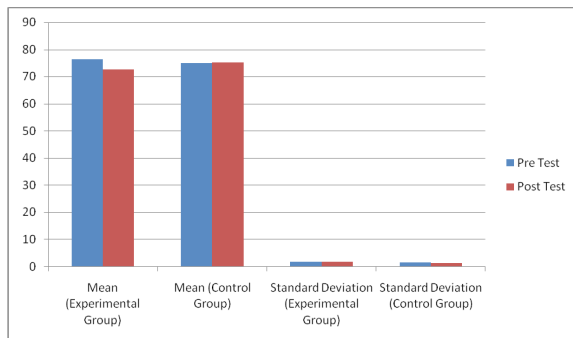
Variable	Mean		Standard Deviation		T ratio
	Pre test	Post Test	Pre test	Post Test	
Pulse Rate					
Experimental Group	76.28	72.72	1.62	1.54	7.89*
Control Group	74.96	75.18	1.39	1.28	1.20

\*Significant difference at 0.05 level of significance,  $t_{0.05}(24) = 7.89$

Table-1 reveal that there was significant difference in the initial means and the final means of the cardiac fitness training after training programme as the obtained t- ratio (7.89) was greater than the tabulated "t" value (2.492) at 0.05 level of significant at 24 degrees of freedom. It is also evident for same table that there was no significant difference found in control group as the obtained "t" value (1.20) was lesser then the tabulated "t" value (2.492) at 0.05 level of confidence of the 24 degree of freedom.

The graphical representation has shown in fig: I

**Fig: No 1: COMPERATIVE DIFFERENCE BETWEEN PRE-TEST AND POST-TEST MEANS AND STANDARD DEVIATION OF EXPERIMENTAL AND CONTROL GROUP IN PULSE RATE**



## DISCUSSION

The findings those five weeks cardiac fitness programme was found to be effective on Pulse rate for the experimental group. Table-1 showed that the cardiac fitness programme have positive effect on Pulse rate of school students and the findings those five weeks cardiac fitness programme was not found significantly effective on Pulse rate in group of control group. Table-1 shows that the cardiac fitness programmes have positive effect on Pulse rate of school students. Through cardiac fitness programme the subjects not only improve cardiovascular system but also improve stamina and general fitness. It may be through cardiac or endurance exercises increase blood volume which helps to pumps more blood from the heart per beat. The present result was supported by Vijay Kumar and Sani Verma (International Journal of Physical Education, Health and Social Science Vol. 3, Issue 1) in their study "Effect of specific exercises programme on erythrocytes among active people" proved that specific Cardiac exercise programme significantly improves the volume of on erythrocytes in case of male and four to five days cardiac exercises for forty five minutes is sufficient for improving erythrocytes in human body. It may also happen through cardiac fitness training because in cardiac fitness training the number of capillaries increases and the heart becomes stronger and larger as a result of exercise so it can pump more blood throughout the body with every beat and sustain its maximum level with less strain. Due to this the pulse rate becomes lower.

## CONCLUSION

On the basis of present research the following inference can be developed:-

- I. Cardiac fitness exercises significantly affect the pulse rate of school students in case of experimental group.
- II. There was no significant effect on pulse rate of school students in case of control group.

## REFERENCES

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