



# International Journal of Physical Education, Sports and Health

P-ISSN: 2394-1685  
E-ISSN: 2394-1693  
Impact Factor (ISRA): 4.69  
IJPESH 2016; 3(1): 229-231  
© 2016 IJPESH  
www.kheljournal.com  
Received: 26-11-2015  
Accepted: 27-12-2015

**Sunil Kumar**  
Assistant Professor, Dept. of  
Physical Education, C.D.L.U.,  
Sirsa, Haryana, India.



**Correspondence**  
**Sunil Kumar**  
Assistant Professor, Dept. of  
Physical Education, C.D.L.U.,  
Sirsa, Haryana, India.

## Cardiovascular fitness between sports women and non-sports women: Comparative study

**Sunil Kumar**

### Abstract

The main purpose of the current study is to find out the cardiovascular fitness between sports women and non-sports women, to conduct the study, 10 intercollegiate sports women and non-sports women were chosen of age between 20-24 years as sample. The selection of subjects was done from Shah Satnam ji Girls College, Sirsa which is affiliated to C.D.L.U., Sirsa (Haryana). Harvard bench step test was used to collect the pulse rate of sportsperson and non-sportsperson.

**Keywords:** Cardiovascular fitness, Sports and Non-Sports women, and Physiological Phenomenon

### Introduction

Cardiovascular fitness is the ability of the heart, blood cells 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.

Understanding the relationship between cardiorespiratory 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, hemoglobin rises, buffers in the bloodstream increase, venous return is improved, stroke volume is improved, and the blood bed becomes more able to adapt readily to varying demands. Each of these results of cardiovascular fitness/cardiorespiratory conditioning will have a direct positive effect on muscular endurance, and an indirect effect on strength and flexibility.

To facilitate optimal delivery of oxygen to the working muscles, the person needs to train or participate in activities that will build up the energy stores needed for sport. This is referred to as metabolic training. Metabolic training is generally divided into two types: aerobic and anaerobic.

The best type is any exercise you enjoy and will continue to do! Select an activity that matches your personal preferences and health and fitness status. Consider previous injuries. Mix high-impact activities like jogging or step aerobics with weight-supported activities like rowing and cycling. The more muscles involved in the activity, the greater your aerobic challenge. For example, cross country skiers have shown the highest aerobic capacity of all athletes. They vigorously use arms, legs and trunk muscles during exercise. One of the most important changes taking place during cardiovascular training is that working muscles become more efficient at taking in and using oxygen. If you're getting ready for a road race, the majority of your preparation should involve running, using the muscles and motions required in competition. To ease the pounding on your feet, knees and hips, it's a good idea to do some cycling or swimming. But running itself provides the best "sport-specific" conditioning for a running event.

### Problem

Cardiovascular Fitness between Sports Women and Non-Sports Women: Comparative Study

**Hypothesis**

Participation of sports activities leads to develop higher level of cardiovascular fitness abilities than their counterpart.

**Objectives of study**

To assess the influence of sports participation on cardiovascular fitness abilities among the sportsperson and non-sportsperson.

**Methodology**

The present paper made an attempt “To assess the influence of sports participation on cardiovascular fitness between sportsperson and non-sportsperson” is in framework of empirical research. The particulars of the samples, tools, collections of the data and statistical techniques are given as under.

**Sample**

To conduct the study, 10 intercollegiate sports women and non-sports women were chosen of age between 20-24 years as sample.

**Sample Design**

**Showing distribution of sample**

Variables	Sex
Sports women	15
Non-Sports women	15
Total	30

**Tools**

Harvard bench step test was used to collect the pulse rate of sportsperson and non-sportsperson

**Statistical tool**

To assess the cardiovascular ability of sportsperson and non-sportsperson t test was applied.

**Result and Discussion**

The main objective of the study is to measure the Cardiovascular endurance among the sportswoman and non-sportswoman because participation and physical activities and sports brings significant changes in the cardiovascular and fitness among the participants. To measure the general capacity of the body and especially heart and circulatory system to adopt and recover from hard work is depends upon cardiovascular endurance. Various studies proved that regular practice and training of the sports develops cardiovascular fitness of the sportsperson. Hence, researcher here made an attempt to assess the significant influence of participation in sports and non-participation on cardiovascular fitness.

**Table 1:** Showing the Mean, SD, and t values of the resting pulse rate of the Sports women and Non-Sports women

Harvard steps test, Resting pulse rate Per Minute	Mean	S.D	't' value
Sports women	55.82	5.20	9.21
Non-Sports women	80.28	7.87	

Significant at 0.05 level.

The formulated hypothesis is that there is significant difference in Endurance abilities among the participants on the rational that involvement in Physical activities and sports to develops Cardio-vascular and fitness, among participants and also develop general fitness, capacity among Sports women. Hence, collected data was applied to the statistical techniques

to find out the influence of the participation, the Mean, SD, score of Sports women is 55.82 SD is 5.20 and Non- Sports women Mean 80.28 and SD is 7.87 respectively. And calculated' value is 9.21 it is greater than the table value, hence for formulated hypothesis accepted and null hypothesis is rejected. It can conclude that it is due to regular participation in Sports and training.

**Table 2:** Showing the Mean, SD and t values of Sports women and Non-Sports women at conducting the Harvard step test per one minute

Harvard steps test, Ability Per Minute	Mean	S.D	't' value
Sports women	59.91	7.01	13.21
Non-Sports women	42.84	4.96	

Significant at 0.05 level.

The table reveals that mean, SD and t value of the sportswomen while recording pulse tare after the performance of 1 ½ minute's, and collected data was applied to the statistical techniques to find out the influence of the participation, the Mean score of Sports women is 59.91, SD is 7.01 and Non- Sports women mean, 4284 and SD is 4.96 and calculated t value is 13.21, it is greater than the table value. Hence formulated hypothesis accepted and null hypothesis is rejected, it was concluded that it is due to regular participation in sports and training. (Sportswomen performed more steps than the Non-sports women).

**Table 3:** Showing the Mean, SD, and t values of pulse rate recorded after 1 minute of Sports women and Non-Sports women

After 1 minute pulse rate	Mean	S.D	't' value
Sports women	92.48	4.85	9.02
Non-Sports women	110.26	6.63	

Significant at 0.05 levels

The Hypothesis is formulated that there is significant difference in Endurance abilities among 20 Sports women and 20 Non-Sports women on rational that the participation in Physical activities and Sports to develop Cardio-vascular and fitness, among participants and also develop general fitness, capacity among sports women, hence collected data was applied to the statistical techniques to find out the influence of the participation, the Mean, SD, score of Sports women is 92.48 SD is 4.85 and Non- Sports women Mean, 110.26 and SD is 6.63 and calculator 't' value is 9.02 it is greater than table value, hence formulated hypothesis accepted and null hypothesis is rejected, It is due to regular participation in Sports and training.

**Conclusion**

The study reveals that participation of sports activities affects physical, motor and cardiovascular fitness, because continues involvement in physical activities cultivates various organ efficiency, the rational of the research hypothesis is accepted.

**References**

1. Ramakrishnan S. Comparative study of cardiovascular efficiency between intercollegiate Hockey and Soccer Players Unpublished Master's Thesis, Alagappa University, 1990.
2. Rameshappa G. A Study on the Status of Physical fitness of Government High School Boys of Bangalore Rural District Unpublished Master's Anomalous University, Annamalai, 2007.
3. <http://www.ucdenver.edu/academics/colleges/medicine/sp>

ortsmed/cusm\_patient\_resources/Documents/Training%20for%20Cardiovascular%20Fitness.pdf

4. Norbert Rego. Are you fighting fit' Sunday Times, 2008, 3.
5. Jack H. Wilmore, Athletic Training and Physical Fitness (2nd ed.) (Beston: Allyn and Bacon-Inc.), 1977.
6. [https://en.wikipedia.org/wiki/Cardiovascular\\_fitness](https://en.wikipedia.org/wiki/Cardiovascular_fitness)
7. Evalyan L Schurr. Movement Experience for Children, A Humansic approach to elementary school Physical Education(2nd Edition)
8. Harold B Falls. Modren Concept of Physical Fitness, Journal of Physical Education and Recreation. 1980; 51:4.