

## COMPARITIVE STUDY OF AEROBIC CAPACITY OF SPORTS WOMEN AND NON-SPORTS WOMEN OF FAIZABAD DISTRICT OF UTTAR PRADESH



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### **Abstract:**

The main purpose of this study was to compare Aerobic Capacity of sports women and non-sports women. A group of 25 sports women and 25 non-sports women was selected as subjects from Faizabad district their age ranging between 18 to 25 years were selected from Amravati city. It was hypothesized that sports women would be higher aerobic capacity than the non-sports women. The between-group differences were assessed by using an independent Samples t-test. Further investigations were needed on the above studied Variables. From the findings of the present study, following conclusions were drawn: Cardio-vascular Endurance of sports women was greater than the non-sports women, Running speed of sports women was better than the non-sports women and Lungs capacity (Vital Capacity) was good in sports women than the non-sports women.

**Keywords:** Aerobic Capacity, Sports Women, Non-Sports Women & Faizabad District.

### **Introduction:**

Aerobic capacity refers to a child's ability to sustain a certain level of aerobic activity for a certain length of time. An aerobic activity is one that requires oxygen exchange in the blood to a greater degree than other activities, such as running versus strength training. Aerobic capacity refers to a child's ability to sustain a certain level of aerobic activity for a certain length of time. An aerobic activity is one that requires oxygen exchange in the blood to a greater degree than other activities, such as running versus strength training. Being able to sustain aerobic activity for longer periods of time depends on the body's ability to transport oxygen to the tissues and muscles of the body and then use it efficiently once it gets there. In the scientific world, our aerobic capacity can be measured and is called VO<sub>2</sub> max. In a broken nutshell, VO<sub>2</sub> max is the maximum level of the body's ability to effectively take up oxygen, transport it, and use it for sustained exercise energy.

Normally, in adults, this ability to use oxygen can be improved with training and exercise. Improvements can be made with as little as 15 to 20 minutes of exercise 3 times a week. If you exercise more, your aerobic capacity can continue to improve to a certain point before it levels off. The interesting point about children is that even when recommendations for adult exercise are used, only small improvements (approximately 5%–10%) in aerobic capacity

are seen until your child reaches puberty. Additional improvements can result simply from their ability to do the movements more easily, more efficiently, and with more motivation.

Usually in sports we use the term sports training which denote the sense of preparing sportspersons for the highest level of performance. But now-a-days sports training is not just a term but it is very important subject that affects each and every individual who takes up physical activity or sports either for health and fitness or for competition at different level. Aerobics is a form of physical exercise that combines rhythmic aerobic exercise with stretching and strength training routines with the goal of improving all elements of fitness (flexibility, muscular strength, and cardio-vascular fitness). It is usually performed to music and may be practiced in a group setting led by an instructor (fitness professional), although it can be done solo and without musical accompaniment. With the goal of preventing illness and promoting physical fitness, practitioners perform various routines comprising a number of different dance-like exercises. Aerobic exercise is physical exercise of relatively low intensity and long duration, which depends primarily on the aerobic energy system. Aerobic means "with oxygen", and refers to the use of oxygen in the body's metabolic or energy-generating process. Many types of exercise are aerobic, and by definition are performed at moderate levels of intensity for extended periods of time.

#### Objective of the Study:

The main objective of this study was to Compare Aerobic Capacity of Sports Women and Non-sports Women of Faizabad District of Uttar Pradesh State.

#### Methodology:

25 sports women and 25 non-sports women was selected as subjects from Faizabad city their age ranging between 18 to 25 years. Sports women who participated at inter-collegiate level of any individual and team games. They were highly motivated to participate in this study and allowed to quit any time. They were randomly assigned into two groups. A (sports women: N=25) and B (non-sports women: N=25)

#### Analysis of the Data:

Variables	Test/tools
Cardio-vascular endurance	600 Yard Run/Walk
Speed	50 Yard Dash
Vital capacity	Wet Spiro meter

#### 600 Yard Run/Walk –

**Purpose:** To measure the Cardio-vascular Endurance of Sports and Non Sports Women's.

**Equipment:** Marked track, stop watches, score card etc.

#### Description:

The subject stands at start. At the signal, "ready", "go", the subjects started to run 600 yards distance. The running was allowed to be interspersed with walking. The timer called out

the time as the subjects cross the finishing line. Walking was permitted but the subject was to cover the distance in the shortest possible time.

**Scoring:** Time was recorded in second is as the score for endurance of that subject.

**50 Yard Dash**

**Purpose:** To measure the Speed of sports and non sports women

**Equipment:** 50 meter marked ground, stop watches etc.

**Description:**

This test was administered on two subjects at a time. Both subjects took position behind the starting line. The starter used the commands, “Are you ready?” and “Go”. The score was the amount of time between the starter’s signal and the instant the subject crossed the finish line.

**Scoring:** Time was recorded in seconds to the nearest tenth of a second as the score in speed.

**3) Vital Capacity:**

**Purpose:** To measure the Vital Capacity Sports and Non Sports Women’s.

**Instrument:** wet Spirometer

**Statistical analyses:** To determine the significant difference in the means of aerobic capacity between sports women and non-sports women tests means of both the groups t-test was employed.

**Results and discussion:** Findings of the statistical analysis have been shown in the following tables.

**Table No-1**  
**Summary of Mean, Standard Deviation and t-ratio for the Data on Cardio-vascular Endurance (600 Yard Run & Walk) between the Means of Sports and Non-sports Women**

Group	Mean	Standard Deviation	Mean Difference	Standard Error	t-ratio
Sports Women	3.067	0.301	0.202	0.088	2.303*
Non-Sports Women	3.270	0.320			

\* Significant at 0.05 level Tabulated  $t_{0.05(48)} = 2.010$

The above Table I show that, Cardio-vascular Endurance mean difference between the Sports women and Non-sports women is significant, because the calculated t-value of 2.303 is greater than the tabulated t-value of 2.010 at 0.05 level of confidence of 48 degree of freedom.

**Table No-II**  
**Summary of Mean, Standard Deviation and t-ratio for the Data on Speed (50 Yard Dash)**  
**Between the Means of Sports and Non-sports Women**

Group	Mean	Standard Deviation	Mean Difference	Standard Error	t-ratio
Sports Women	12.657	0.626	0.388	0.176	2.206*
Non-Sports Women	13.045	0.618			

\* Significant at 0.05 level Tabulated  $t_{0.05(48)} = 2.010$

The above Table II reveal that, speed mean difference between the Sports women and Non-sports women is significant, because the calculated t-value of 2.206 is greater than the tabulated t-value of 2.010 at 0.05 level of confidence of 48 degree of freedom

**Table No-III**  
**Summary of Mean, Standard Deviation and t-ratio for the Data on Vital Capacity Between**  
**the Means of Sports and Non-sports Women**

Group	Mean	Standard Deviation	Mean Difference	Standard Error	t-ratio
Sports Women	952.800	57.765	46.560	16.374	2.844*
Non-Sports Women	906.240	58.015			

\* Significant at 0.05 level Tabulated  $t_{0.05(48)} = 2.010$

The above Table III reveal that, Vital Capacity mean difference between the Sports women and Non-sports women is significant, because the calculated t-value of 2.844 is greater than the tabulated t-value of 2.010 at 0.05 level of confidence of 48 degree of freedom.

**Discussion on Findings:**

From the above tables following were the findings of the present study:-  
 Significant difference found in Cardio-vascular Endurance i.e. calculated t-value of 2.303 is greater than the tabulated t-value of 2.010 at 0.05 level of confidence of 48 degree of freedom. Because the sports women having the practice of running and playing the games.  
 Significant difference found in Speed i.e. calculated t-value of 2.206 is greater than the tabulated t-value of 2.010 at 0.05 level of confidence of 48 degree of freedom. Because the sports women having the practice of running.

Significant difference found in Vital Capacity i.e. calculated t-value of 2.804 is greater than the tabulated t-value of 2.010 at 0.05 level of confidence of 48 degree of freedom. Because the sports and running practice capacity of their lungs increases.

**Conclusion:**

From the findings of the present study, following conclusions were drawn:-

- Cardio-vascular Endurance of sports women was greater than the non-sports women.
- Running speed of sports women was better than the non-sports women.
- Lungs capacity (Vital Capacity) was good in sports women than the non-sports women.

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