



# AGING AND ITS EFFECT ON CARDIO-RESPIRATORY ENDURANCE OF YOGIC & DYNAMIC EXERCISES PRACTITIONERS

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**Abstract:** *Today's modern and technological times have seen a rise in human stress levels. It was observed that physical efforts had decrease. Everyone needs exercise to keep their body healthy. Then, it is important to understand how exercise will help the body to become more healthy. This study is to examine the effectiveness of yoga or dynamic exercise to improve the Cardio respiratory endurance of adults between the age ranges between 50 to 60. To carry out this study, the subjects were selected from city of Amravati. The subjects selected were doing certain type of exercises like yogic practices or dynamic exercises. To find out the CRE, the Harvard Step Test was conducted. These fasciitis were available in the laboratory of the Degree College of Physical Education. Subjects were given three minutes of exercise on an 18-inch high bench. After exercise, their plus rate was measured between the resting time of 1-1.30 minutes. The physical fitness Index was initially calculated while analyzing the data obtained. The average and standard deviation of both groups was then calculated. This calculated the value of the T-ratio and fixed the difference between the two groups.*

*The average of adults doing yoga was 82.58 and the average for adults doing a dynamic exercise was 86.80. Standard deviation was 6.5864 adults who practiced yoga and 5.9252 adults who did a dynamic exercise. Based on these statistical values, the difference between the two groups was made by conducting t-test to distinguish in their cardiorespiratory endurance. The mathematical value of T is 2.3817 while the value of T at 0.05 on the Degree of Freedom 48 is 2.026. This showed a significant difference between the two groups. When it was tested, the hypothesis was rejected and the cardio-respiratory endurance of adults who performed yoga was found to be lower than those who do dynamic exercise.*

**Keywords:** Health, Cardio-Respiratory Endurance, Yogic Exercises, Dynamic Exercises, Harvard Step test, T-value.

**Introduction:** Modern machine age is a race and a fierce competition. Life has prospered, but it has become mechanical. Even in the same way, a man has lost his mental peace and satisfaction. In this age, there is always some kind of pressure on man, so it is important to be alert and active. These changes have reduced his health, physical activity, strength, abilities and life. But he is trying to improve his life and health through science.

The effects of the increasing pollution today are also affecting human's physical, mental, and intellectual health. So when you reach your fifties, Indian citizens get tired. Their health is deteriorating and mental stress is increasing. Then finally many of them suffer from fatal diseases like Obesity, High blood sugar, Hypertension, Heart disease, Paralysis, Brain Haemorrhage, Cancer, etc.

Sports, exercise and yoga are a form of medicine to maintain health. These actions help in maintaining health. Hence, in today's world, people are increasingly interested in physical education and sports. The number of

participants in this sector is also increasing day by day. This is because people read magazines, sports reports and newspapers daily, and watch many health programs on television. It is through this way that we hear and read every day in our daily lives about how sports, yoga and physical activity affect our bodies. In the scientific age, equipment, new materials, and research are also a major attraction to the field.

Health is a common but wide term, while physical capacity is a certain term. Dynamic exercise increases physical capacity. Physical capacity is the ability to perform a particular task at a given time without getting fatigue. There are different elements of physical capacity. The key component of this is the cardio-respiratory endurance.

Physical activity or movement is the primary requirement of human life to maintain this capacity. This helps in maintaining health. Health and physical capacity are based on cardio-respiratory endurance. To maintain this capability personally, more time should be spent on doing stress action. Yoga and physical education have been united because they serve same purpose.

### **What is yoga?**

For thousands of years, "*Yoga-shastra*" has been studied in India as an effective way of self-development. Yoga is a very broad term. Yoga exercises are mainly performed in *asana, pranayama, bandas, mudras and shuddhikriya*. We twist, turn, pull, and then relax. These exercises improve blood vessels, increase the capacity of the muscles to contract and expand, increase the oxygen capacity and helps in getting rid of body's disorders and release carbon dioxide. This purifies blood and makes the body disease free. If the blood purification process continues properly, the cardio-respiratory endurance will increase, i.e. an increase in body capacity.

Mr. Gharote has done many researches and has proved that if a person is continuously studying *asanas, pranayamas, bandas, mudras, purification* and physical capacity, he will be fit.

There have been many studies to date on the impact of a exercise on the human body. This has shown that dynamic exercise increases the cardio-respiratory endurance. Dynamic exercise has been performed for thousands of years. Dynamic exercise affects the body, and the development of voluntary muscles helps them to function well. Blood purifies while exercising and maintains health.

### **What is health?**

The World Health Organisation (WHO) defines health as 'a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity' (WHO, 1948). ... 'Wellbeing' refers to a positive rather than neutral state, framing health as a positive aspiration.

*Asanas and Pranayama* are associated with *Vihara*, the means of physical and mental movements. Physical activity or exercise is essential for health. When physical activity decreases, the body's performance decreases and more fatigue occurs. Even if you work hard at an age of one, you can walk. Exercise and yoga are both beneficial at this age. When metabolism changes after 40, however, the ability and speed of physical debilitating metabolism decreases, and at that age, mental stress and anxiety increase. Physical exercise and fatigue-causing games are not

beneficial at that time. This is the time when yoga is a blessing. At this age, there is no better and easier way to exercise mental and physical health symptoms.

### **Cardiorespiratory endurance:**

1- extremely high efficiency in the functioning of the heart, lung and vessels that results in increased in the performance of continuous work involving large muscle group.

2- Cardiorespiratory endurance is the ability of your heart, blood vessels, and lungs to deliver oxygen to working muscles.

**Yogic Exercise:** The practices enjoined in yogic literature and handed down in different tradition are called yogic exercise. This includes *Asanas, Pranayamas, Bandhas, Mudras & Kriyas*.

**Dynamic Exercise:** they are repetitive, vigorous and forcefully movement involving skeletal muscle of the body. This includes running, walking, jumping, playing etc. these are physical in nature.

The study was intended to compare the cardiac-respiratory endurance of adults who performan yogic exercise and ones who perform exercise in a dynamic way.

Physically, a person needs a Cardio-respiratory endurance to be strong. A person with a high Cardio-respiratory endurance can do any work easily and maintain good health. This study is very important in terms of increasing the appeal of people to exercise, as well as to remove misunderstandings about one another, and thus far, the study has not been studied.

The scope of the proposed study was limited to the literature available in the library at Degree College of Physical Education at Amravati. The material available was criticized for highlighting the previous research and avoiding repetition of the subject. In doing so, the study of yoga related literature; dynamic exercise related materials and comparative study of yoga and dynamic exercise were studied in three parts. In Chapter 2, the relevant literature was included in the study.

Current research has been suggesting the difference between the heart and respiratory capacity of an adult who performs yoga and dynamic exercise.

The proposed study was conducted on adults who performed dynamic exercise and yoga in the city of Amravati. For conducting the study two groups of 25 members each was created each group performing different exercise, the subjects were from age category of 50-60 years of age. All these adults were exercising since a year.

They were not examined on the same day, nor were their diet and occupation considered. The type of activities they do was not taken into account. In Yoga, *Asanas, Pranayama, Bandas, Mudras, Kriyas* etc. Similarly - running, walking, playing, etc. in dynamic exercise.

The Adults belonging to group performing yoga were from *Agarwal Yoga Kendra* and *Deeparchan Yoga Centre*. The Adults belonging to group performing dynamic Exercise were from the *Amravati district athletics and veterans association*, Amravati. They were selected in the available sample method and taken for the test.

All adults were divided into 5 equal groups. Each day a group was called to the sports laboratory at Degree College of physical education Amravati and a revised Harvard step set was taken to check their Cardio-Respiratory Endurance.

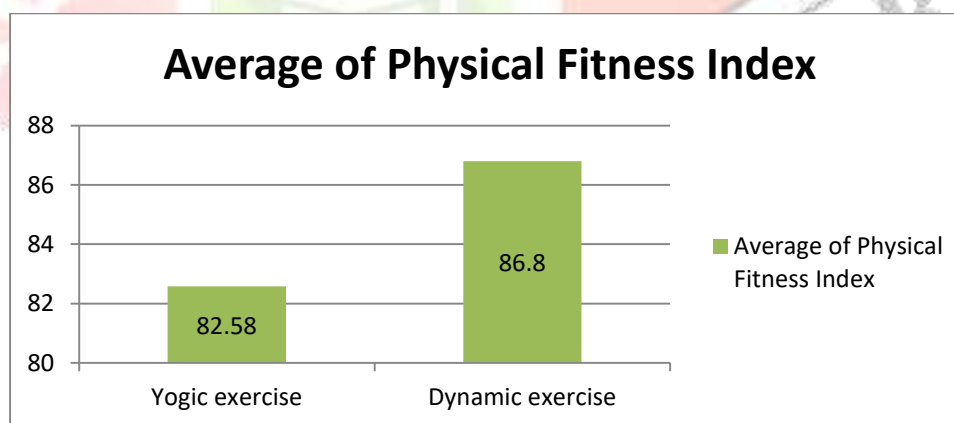
The test took three minutes of exercise on the 18-inch high bench. This was done with a 24-step measure of the sound of the metronome. Their exercise period was recorded. Also, the recovery period was counted up from 1 minute to 1.30 minutes after the exercise and all the data was collected.

The duration and pulse of exercise were inserted into the formula. This showed the Cardio-Respiratory endurance of adults. (Physical fitness index)

$$\text{Physical Fitness Index} = \frac{\text{Duration of Exercise (Sec.)} \times 100}{5.5 \times (1 \text{ to } 1.30 \text{ minutes Pulse rate})} + 0.22 (300 - D)$$

Sr.No.	Subject Total	Groups (performing different exercises)	Types of exercise	Average of Physical Fitness Index
1	25	Yogic exercise	Step test	82.58
2	25	Dynamic exercise	Step Test	86.80

Table No.1 – Shows Mean (Average) physical fitness index of both groups.

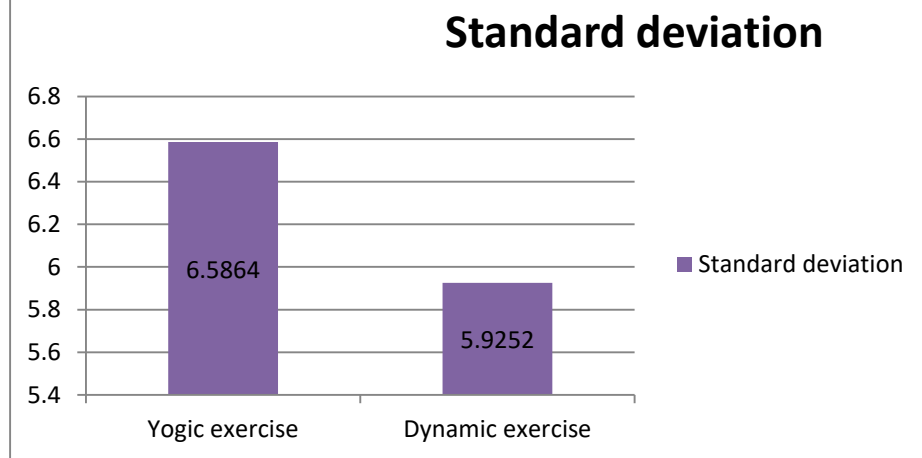


Graph No.1 shows comparison of mean

An average of the collection was drawn in the analysis. The average of adults doing yoga is 82.58 and the average for adults doing dynamic exercise is 86.80.

Table No.2 – Shows Standard deviation of physical fitness index of both group

Sr.No.	Subject Total	Groups (performing different exercises)	Types of exercise	Standard deviation
1	25	Yogic exercise	Step test	6.5864
2	25	Dynamic exercise	Step Test	5.9252



Graph No.2 - Shows comparison of standard deviation

This led to their standard deviation (SD). SD is 6.5864 for adults practicing yoga and 5.9252 for adults who do dynamic exercise.

Sr.No.	Group classification	Mean	Standard Deviation	Mathematical T-value	Table T-value on 0.05 level
1	Yogic exercise	82.58	6.5864	2.3817	2.026
2	Dynamic exercise	86.80	5.9252		

Table No.3 Shows Mathematical T-value &amp; table T-value

On this basis, t-tests were performed between the two groups to see the difference in their Cardio respiratory Endurance. The mathematical value of T is 2.3817 while the value of T at 0.05 on the Degree of Freedom 48 is 2.026.

This showed significant differences between yoga and dynamic exercise groups. When it was tested, it was rejected and the researcher concluded that the Cardio-Respiratory Endurance of adults doing yoga was lower than that of adults doing dynamic exercise.

**Conclusion:** After a year of yoga and dynamic exercise, a comparison of the Cardio respiratory Endurance of men between the ages of 50 and 60 years found that the average of adults doing yoga was 82.58 and the average for adults doing a dynamic exercise was 86.80. Standard deviation was 6.5864 adults who practiced yoga and 5.9252 adults who did a dynamic exercise. Hence the Cardio respiratory Endurance of adults doing dynamic exercise could be higher than that of adults who perform yoga. So it may be concluded that dynamic exercise can be more effective for increasing the capacity of male adults than yoga.

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