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## Isolated effect of aerobic and yogic practices on inspiratory reserve volume and expiratory reserve volume among female ball badminton players

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### Abstract

The purpose of present study was to find out the isolated effect of aerobic and yogic practices on inspiratory reserve volume and expiratory reserve volume among female ball badminton players. To achieve this purpose, thirty ball badminton players, studying in various colleges and departments from Dhanalakshmi Srinivasan Institutions, Perambalur, Tamil Nadu, India were selected as subjects. They have participated in the intercollegiate tournaments for their respective, affiliated universities ball badminton tournaments. Their age ranged from 18 to 25 years.. The selected thirty subjects were divided into three groups of ten each, out of which group - I (n = 10) underwent aerobic exercise (continuous running) for three days (alternative days) per week, group - II (n = 10) underwent yogic practice for five days per week (Monday to Saturday) for twelve weeks and group – III (n = 10) remained as control. Prior to and after the training period the subjects were tested for, inspiratory reserve volume and expiratory reserve volume. inspiratory reserve volume and expiratory reserve volume assessed by using expirograph. The statistical tool were used for the present study is Analysis of covariance (ANCOVA). If obtained 'F' ratio is significant, Scheffe's test used as a post hoc test to find out the differences among the groups. The result of the study was a significant improvement on inspiratory reserve volume and expiratory reserve volume after twelve weeks of aerobic exercises and yogic practices. However the improvement was favour of experimental groups. There was a significant difference was occurred between aerobic exercises and yogic practices group and control group after twelve weeks of aerobic exercises and yogic practices.

**Keywords:** Aerobic exercises, yogic practices, ball badminton, inspiratory reserve volume and expiratory reserve volume

### Introduction

Aerobic also refers to the use of oxygen that is sufficiently necessary to acquire energy while engaging in physical activity through aerobic metabolism. It is not related to, involves, or requires free oxygen. The aerobic metabolism provides the most support for the activities that can do with the highest levels of intensity, and they are also completed with an additional phase of length.

Yoga is not some forgotten, antiquated myth. There are plenty of valuables in the basement. This is a prerequisite for both the customs of today and future. It is suggested to be included into daily life since it is an art of ethical living.

Cricket is a bat-and-ball game played between two teams of eleven players each on a field at the centre of which is a 22-yard (20-metre) pitch with a wicket at each end, each comprising two bails balanced on three stumps. The game proceeds when a player on the fielding team, called the bowler, "bowls" (propels) the ball from one end of the pitch towards the wicket at the other end, with an "over" being completed once they have legally done so six times.

### Statement of the Problem

The purpose of present study was to find out the isolated effect of aerobic and yogic practices on inspiratory reserve volume and expiratory reserve volume among female ball badminton players.

## Methodology

To achieve this purpose, thirty ball badminton players, studying in various colleges and departments from Dhanalakshmi srinivasan Institutions, Perambalur, Tamil Nadu, India were selected as subjects. They have participated in the intercollegiate tournaments for their respective, affiliated universities ball badminton tournaments. Their age ranged from 18 to 25 years. The selected thirty subjects were divided into three groups of ten each, out of which group - I (n = 10) underwent aerobic exercise (continuous running) for three days (alternative days) per week, group - II (n = 10) underwent yogic practice for five days per week (Monday to

Saturday) for twelve weeks and group – III (n = 10) remained as control. Prior to and after the training period the subjects were tested for, inspiratory reserve volume and expiratory reserve volume. inspiratory reserve volume and expiratory reserve volume assessed by using expirograph.

## Analysis of Data

The data collected prior to and after the experimental periods inspiratory reserve volume and expiratory reserve volume on aerobic exercises and yogic practices and control group were analyzed and presented in the following table – 1

**Table 1:** Analysis of covariance of aerobic exercises and yogic practices and control groups

Variable Name	Group Name	Aerobic Exercises	Yogic Practices	Control Group	F ratio
Inspiratory Reserve Volume	Pre-test Mean $\pm$ S.D	2.412 $\pm$ 0.081	2.418 $\pm$ 0.063	2.421 $\pm$ 0.083	0.939
	Post-test Mean $\pm$ S.D.	2.521 $\pm$ 0.087	2.482 $\pm$ 0.072	2.415 $\pm$ 0.074	5.63*
	Adj.Post-test Mean $\pm$ S.D.	2.509	2.471	2.420	54.89*
Expiratory Reserve Volume	Pre-test Mean $\pm$ S.D	1.104 $\pm$ 0.014	1.103 $\pm$ 0.016	1.105 $\pm$ 0.018	0.687
	Post-test Mean $\pm$ S.D.	1.155 $\pm$ 0.016	1.136 $\pm$ 0.016	1.101 $\pm$ 0.019	11.25*
	Adj.Post-test Mean $\pm$ S.D.	1.150	1.131	1.102	28.43*

Significant at .05 level of confidence

\* (The table value required for significance at .05 level of confidence with df 2 and 42 and 2 and 41 were 3.22 and 3.23 respectively.)

## Results

From the Table-1 it is clear that aerobic exercises and yogic practices increases inspiratory reserve volume and expiratory reserve volume when compare with control group.

Further to determine which of the paired means has a significant improvement, Scheffé S test was applied as post-hoc test. The result of the follow-up test is presented in Table – 2.

**Table 2:** Scheffé S Test for the Difference between the Adjusted Post-Test Mean of inspiratory reserve volume and expiratory reserve volume on aerobic exercises and yogic practices and control group

Aerobic Exercises	Yogic Practices	Control Group	Mean Difference	Confidence interval at .05 level
<b>Adjusted Post-test Mean of inspiratory reserve volume</b>				
2.509		2.420	0.089*	0.042
2.509	2.471		0.038	
	2.471	2.420	0.051*	
<b>Adjusted Post-test Mean of expiratory reserve volume</b>				
1.150		1.102	0.048*	0.021
1.150	1.131		0.019	
	1.131	1.102	0.029*	

\* Significant at 0.05 level of confidence.

Both aerobic exercises and yogic practices increases inspiratory reserve volume and expiratory reserve volume when compare with control.

## Conclusions

From the analysis of the data, the following conclusions were drawn.

Both, yogic practices group and aerobic exercises group have improved their inspiratory reserve volume and expiratory reserve volume when compared with the control group. Syed Hojjat *et al.*, (2016) <sup>[5]</sup> found that there was a high improvement in inspiratory reserve volume and expiratory reserve volume after the yogic practices and aerobic exercises programme. Madanamohan *et al.*, (1992) <sup>[3]</sup>, Shyamkarthick *et al.*, (2014) <sup>[4]</sup>, Havesepian *et al.*, (2013) <sup>[1]</sup> has recommended from his research work that there was a high improvement in inspiratory reserve volume and expiratory reserve volume after the yogic practices and aerobic exercises programme. In addition, the results of the tests shows that there was no significant difference between experimental groups.

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