

# EFFECT OF YOGIC TRAINING AND CIRCUIT TRAINING ON RESPIRATORY ENDURANCE AMONG COLLEGE PLAYERS.

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## Abstract

The present study was conducted in Impact of selected Yogic training and Circuit training on cardio respiratory Endurance in Sedentary Woman. Thirty woman (n =30) female subjects, aged 20 - 22 years, from the Chidambaram home residents. Cuddalore District were surveyed for cardio respiratory Endurance. Out of 45 subjects, 45 subjects having abnormal cardio respiratory Endurance were randomly selected for experimental study. The pre test data were collected administering and randomly assigned into three equal groups group -A control group , two experimental B and C. Group B received specially designed Yogic training while Group C received Circuit training. Experimental groups A & B were practiced for a total of 8 weeks, 45 minutes per day in the morning except Saturday and Sunday The data have been recorded by using standard procedures. Descriptive statistics have been applied to process the data prior to employing inferential statistics ANCOVA. Further, Scheffe's post hoc test was employed to record comparative effects of the training investigations. The result summarized that the yogic training or Circuit training has significant effects for improving cardio respiratory Endurance Yoga training has put better influence than the Circuit exercise training in improving cardio respiratory Endurance.

**Key words:** Yogic Training -YT, Circuit Training-CT, Cardio Respiratory Endurance- CRE, sedentary woman, CG-Control Group

## Introduction

Cardiorespiratory endurance is the ability of the heart and lungs to absorb, transport, and utilize oxygen over an extended period of physical exertion. As one of the four primary components of physical fitness, it is an important measure of the overall health and fitness. Age, genetics, and physical conditioning all play a role in an individual's cardiorespiratory endurance.

In improve the Cardio Respiratory Endurance. Yoga has preventive, promotive as well as curative potential. Postures assumed during yoga practice are mainly isometric exercises which provide optimally maintained stretch to the muscles. Circuit training (CT) is a technique used to increase strength and explosiveness. It consists of physical exercises in which muscles exert maximum force at short intervals to increase dynamic performances. In such a training, muscles undergo a rapid elongation followed by an immediate shortening,so there will be a possibilities to increase cardio respiratory endurance.

## Aim of the study

The main aim of this study established the suffering from cardio respiratory endurance, respiratory parameters problems, obesity, psychological disorders - stress, depression etc. Mainly when in tension they forgot about their respiratory conditions.

## Methodology

The present study was undertaken in "Impact of selected yogic and Circuit training on cardio respiratory Endurance in Sedentary Woman". Thirty women (n = 30) female subjects, aged 20 - 22 years, from the polytechnic players, Chennai District. Out of 45 subjects, 45 subjects having abnormal cardio respiratory Endurance were randomly selected for experimental study. The pre and post test data were collected. Subjects were randomly assigned into three equal groups, two experimental groups A & B, and C control group. Group A and B received specially designed Yogic, Circuit trainings consisting of a set of 10 Asanas, 4 Pranayama's with kriyas in the morning session, group-C have not gone for any training programme.

A set of the following yoga training asanas are Padmasana, Padangusthasana, Vajrasana, Bhujangasana, padhaasthasana, veerapadhrasana, janusirsana, viruksana, Gomugasana, Uthrasana, pranayama :- *Bhastrika, Kapalabhati, surya bhendana pranayama*, Ujaayi.

Mudhras:- chin mudhra, chinmya mudhra, maha mudhra.

Group A received B Circuit training i.e training for different muscle groups. lower limbs and upper limbs selected exercises are Squats, lunge, shuttle run, vertical jumps, chin ups, push-ups 5-7 sets, 2 repetitions.



## Hypothesis

1. There may be significant improvement among training groups when compared with the control group on selected cardio respiratory endurance are compared and analysed.
2. There may be significant difference on cardio respiratory endurance were analyzed.

## Among the Scholar's view on CRE.

Experimental groups B & C were practiced for a total of 8 weeks, 45 minutes per day in the morning except Saturday and Sunday and group A was treated as control. The data have been recorded by using standard procedures. Descriptive statistics have been applied data to process the prior to employing inferential statistics ANALYSIS OF COVARIANCE. Further, Scheffe's post hoc test was employed to record comparative effects of the training investigations. Cardiorespiratory Endurance assessed with maximal exercise testing is a more precise and reliable measure than self-reported physical activity.

**Biswajit Sinha and others** (2014) opines that the effect of yogic training on various cardio respiratory responses. The results of the present study indicated that yogic training caused conditioning of cardio respiratory parameters, which did not reduce across three phases of training.

Jacobs<sup>1</sup>, Nash 2001 studied on ten men with chronic neurologically complete paraplegia at the T5-L1 levels participated in the study. Subjects completed 12 wk of CRT, using a series of alternating isoinertial resistance exercises on a multi-station gym and high-speed, low-resistance arm ergometry. Peak arm ergometry tests, upper extremity isoinertial strength testing, and testing of upper extremity isokinetic strength were all performed before and after training. None of the subjects suffered injury from exercise training. Significant increases were observed in peak oxygen consumption (29.7%,  $P < 0.01$ ), time to fatigue ( $P < 0.01$ ), and peak power output during arm testing ( $P < 0.05$ ). Significant increases in isoinertial strength for the training maneuvers ranged from 11.9% to 30% ( $P_s < 0.01$ ). Significant increases in isokinetic strength were experienced for shoulder joint internal rotation, extension, abduction, adduction, and horizontal adduction ( $P_s < 0.05$ ). Chronic survivors of paraplegia safely improve their upper extremity cardiorespiratory endurance and muscle strength when undergoing a short-term circuit resistance training program. Gains in fitness and strength exceeded those usually reported after either arm endurance exercise conditioning or strength training in this subject population.

These findings are consistent with findings of Ray et al (2001) that yoga training increases muscular endurance, delays onset of fatigue and enables one to perform work at lesser  $VO_2$  max.

who have pointed out regarding on Effect of cardio-respiratory endurance, anaerobic and yogasana on HDL and LDL cholesterol levels among young men medium intensity Cardio Respiratory Endurance training brought more significant increase in HDL cholesterol level, though all the three types of protocols brought significant increase in resting HDL cholesterol.

The result of analysis (ANCOVA) as showed in Table- I, It reveals that the achievement scores in the selected dependent variables of among two training interventions are significantly different, the impact of such statistical differences has also been evidenced in the case of their pre and post hoc test comparison are applied employing Scheffe's Post Hoc techniques of, the specific variable are identified, and showed significant changes as a result of yoga and plyometric training intervention are keep along with the whole study.

**Table –I**  
**Analysis of Covariance on CRE for YT,PT and CG**

	<b>Yogic Asanas Group</b>	<b>Ciecuit training programme</b>	<b>Control group</b>	<b>SOV</b>	Sum of squares	df	Mean square	'F' ratio
<b>Pre test</b>	1572.73	1586.11	1570.00	B	1397.09	2	698.548	0.227
<b>S.D.</b>	50.565	37.731	71.492	W	82957.1	27	3072.48	
<b>Post test</b>	1602.27	1766.67	1562.50	B	220035.9	2	110017.9	18.76*
<b>S.D</b>	61.237	93.176	69.956	W	158380.7	27	5865.95	
<b>Adjusted post test mean</b>	1604.248	1760.13	1566.21	2	195023.96	2	97511.98	20.31*
				27	124819.21	26	4800.74	

\*Significant at 0.05 level of confidence. Table value required for significance at .05 level with df 2 and 27 are 3.27 and 2 and 26 are 3.28.

Table -1 shows that the pre test means of cardio respiratory endurance for yogic training, Circuit training and control group were  $1572.73 \pm 50.565$ ,  $1586.11 \pm 37.731$ ,  $1570.00 \pm 71.492$  respectively. The obtained "F" ratio value of 0.227 for pre test score of Circuit training, yogic and control groups on cardio respiratory endurance was less than the required table value of 3.27 for significance with df 2 and 27 at 0.05 level of confidence.

The post test mean values of the cardio respiratory endurance for Circuit, yogic and control groups were,  $1602.27 \pm 93.176$ ,  $1766.67 \pm 61.237$  and  $1562.50 \pm 69.956$  respectively. The obtained "F" ratio of 18.76 for post test scores of Circuit c, yogic and control groups were not more than the required table value of 3.27 for significance with df 2 and 27 at 0.05 level of confidence.

The adjusted post test mean values of yogic training, Circuit training and control groups were 1604.248, 1760.13 and 1566.21 respectively. The obtained 'F' ratio value of 31.51 for adjusted post test scores of Circuit, yogic training and control groups was greater than the required table value of 3.28 for significance with df 2 and 26 at .05 level of confidence.

The above statistical analysis indicates that there was a significant improvement in cardio respiratory endurance after the training period. Further to determine which the paired means has a significant increase, Scheffe's test was applied. The result of the follow- up test is presented in Table- II.

Table –II

**Scheffe's test for the difference between the adjusted post- test mean of Cardio Respiratory Endurance**

Yogic asanas Training	Plyometric Training	Control group	Mean difference	Confidence interval at .05 level
-	1760.13	1566.21	193.92*	79.325
1604.248	1760.13	-	155.882*	79.325
1604.248		1566.21	38.038	79.325

\*significant at .05 level of confidence.

Table –II shows that the adjusted post –test mean difference in cardio respiratory endurance between Circuit and control groups were 193.92, Circuit training and yogic training groups were 155.882, which was also significant at 0.05 level of confidence .yogic training and control groups were 38.038, which was insignificant at 0.05 level of confidence.

**Discussion**

(Madanmohan, 1992) in studies reported that 12 weeks of yoga practice results in significant increase in maximum expiratory pressure, maximum inspiratory pressure,

Joshi et al (1992) have also demonstrated that six weeks of pranayam breathing course resulted in improved ventilatory functions in the form of lowered respiratory rate,

Michael.et.al., (1995-1997)described on Cardio respiratory Fitness and Coronary Heart Disease Risk Factors. The data indicate that the levels of cardio respiratory fitness may confer resistance to elevations in CHD risk factors even in a low-risk sample of middle-aged men and women

Similar beneficial effects were observed by Makwana et al (1988) after 10 weeks of yoga practice. Increase in inspiratory and expiratory pressures suggests that yoga training improves the strength of expiratory and as well as inspiratory muscles. Respiratory muscles are like skeletal muscles.

Gurmej Singh Dhaliwal et.al., (2014) studied ,to determine the effect of 6-week yogic practices on physiological fitness status of university level girls.. The 6-week yogic practices had significant effect on cardiovascular endurance, body composition, muscular strength & cardio respiratory endurance and flexibility.

Yoga improves cardio-respiratory efficiency: Madanmohan et al (2008) have reported that yoga training of six weeks duration attenuates the sweating response to step test and produces a marked increase in respiratory pressures and endurance in 40 mm Hg test in both male and female subjects. During yoga practice, one consistently and consciously over-rides the stimuli to respiratory centers, thus acquiring control over the respiration. This, along with improved cardio-respiratory performance may explain the prolongation of breath holding time in yoga trained subjects.

## Results:

Therefore, this study have been reveal that the effect of Yogic Training and circuit training significantly adapts the Cardio Respiratory Endurance However efficiency metabolism is not affected. A current understanding of the relationship between sedentary lifestyles and Cardio Respiratory Endurance has emerged from pioneering works that used self-reported physical activity to represent the degree of exposure due to experimental groups when comparatively with control group.

## Conclusion

The Impact of Yogic Training and Plyometric training may be enhanced to develop the Cardio Respiratory Endurance and its parameters to withstand the demand their lifestyle. Adequate Cardio Respiratory Endurance reserve may be ensured before exhaustive workout through this and some other training also Yoga asnasa training when comparatively plyometric techniques involve isometric contraction Greater lung volume decreases the frequency and amplitude of involuntary contractions of respiratory muscles, thereby lessening the discomfort of breath holding. so the cardio respiratory endurance regulate in normal functioning way of life.

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