

IMPACT OF TWELVE WEEKS OF AEROBIC CIRCUIT TRAINING ON RESTING PULSE RATE AND BREATH HOLD TIME OF COLLEGE BOYS

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ABSTRACT: The purpose of the study was to find out the effect of twelve weeks of aerobic circuit training on resting pulse rate and breath hold time of college boys. To achieve the purpose of the study, thirty (n = 30) boys students aged ranged from 18 to 25 years studying in various classes in St. Michael's College Cherthala, Kerala were randomly selected as subjects. They were equally divided into two groups of fifteen subjects each. Group-I (n=15) underwent aerobic circuit training for three session per week for eight weeks. Group-II (n=15) acted as control group which did not participate in any special training programme. The data were collected prior to and immediately after the training programme on resting pulse rate and breath holding time. The ANCOVA was used as statistical tool. The result of the study reveals that due to the impact of eight weeks of aerobic circuit training the resting pulse rate and breath holding time of the college boys have significantly altered.

Keywords: Aerobic circuit training, Resting pulse rate, Breath hold time.

INTRODUCTION

Aerobic exercise that intends to improve the oxygen system aerobic mean with oxygen aerobic exercise (also known as) is physical exercise of relatively low intensity that depends primarily on the aerobic energy generation process. Aerobic literally means living in air, and refer to the use of oxygen to adequately meet energy demands during exercise. Via aerobic metabolism. Generally, light to moderate intensity activities that are sufficiently supported by aerobic metabolism can be performed for extended period of time. The intensities should be between 60 and 85% maximum heart rate (en.wikipedia.org.).

Circuit training is a form of body conditioning or endurance training or resistance training using high-intensity. It targets strength building or muscular endurance. Traditionally, the time between exercises in circuit training is short, often with rapid movement to the next exercise. Circuit training is a great boredom buster: Moving quickly from one exercise to the next means your mind doesn't have time to wander or tune out. An all-strengthcircuit burns 30 percent more calories (about nine per minute!) than a typical weight workout and offers more cardio benefits.

METHODOLOGY

The purpose of the study was to investigate the effect of aerobic circuit training on resting pulse rate and breathe hold time of college boys. To achieve this purpose thirty (n=30) boys students aged between 18 and 25 years. studying in various classes in St. Michael's College Cherthala, Kerala were randomly selected as subjects. They were equally divided into two groups. Group I (n=15) underwent aerobic circuit training for three session per week for twelve weeks weeks. Group II (n=15) acted as control group which did not participate in any special training. The data were collected prior to and immediately after the training programme on resting pulse rate and breath hold time. The analysis of covariance (ANCOVA) was used as statistical tool. The level of confidence fixed to the test the significance was 0.05. Breath hold time and resting pulse rate were measured by pulse rate and stop watch.

Training protocol

Exercise were dose over a period of twelve weeks week, at three sessions in a week with 60 min for each session in the presence of an experience trainer. In the first place for about 5 min warm-up and stretch was performed, then the rapid movements of the limbs and trunk in a combined manner were done for 50 minutes and at the final 5 min, light stretching was done go back to the original state. Once a week and also to increased the intensity. The control group II did not participate any activity.

In every training session the works out including warmingup and limbering down exercise the experimental group underwent aerobic circuit training programme under strict supervision of the investigator. Aerobic training programme consist of a Jumping jack, knee lifts, zigzag run, skipping, step-up, grapevine, split jumps, shuttle run and V step. Repetitions 8 to 12, set recovery: station 30 to 40 second set – 4 to 5 minutes.

Table 1. Results of ANCOVA for resting pulse rate, breathhold time

Variables	Test	Aerobic circuit training group	Control group	Sources of Variances	Sum of Squares	df	Mean Square	Obtained 'F' Ratio
Resting pulse rate	Pre-Test Mean	74.6	73.3	Between	12.03	1	12.03	2.32
	S.D	2.32	2.32	Within	150.93	28	5.39	
	Post-Test Mean	70.13	72.27	Between	34.13	1	34.13	5.41
	S.D	2.20	2.79	Within	176.67	28	6.31	
Breath hold time	Adjusted post test mean	69.64	72.76	Between	67.58	1	67.58	21.40*
				Within	85.25	27	3.16	
	Pre-Test Mean	57.69	57.01	Within	3.37	1	3.37	0.21
	S.D	4.29	3.67	Between	446.28	28	15.94	
Post-Test Mean	60.16	57.27	Within	62.70	1	62.70	4.37	
S.D	3.82	3.75	Between	402.01	28	14.36		
Adjusted post test mean	59.87	57.57	Within	39.35	1	39.35	19.64*	
			Between	54.10	27	2.00		

*P>0.05, TV: df 1 and 27=4.20

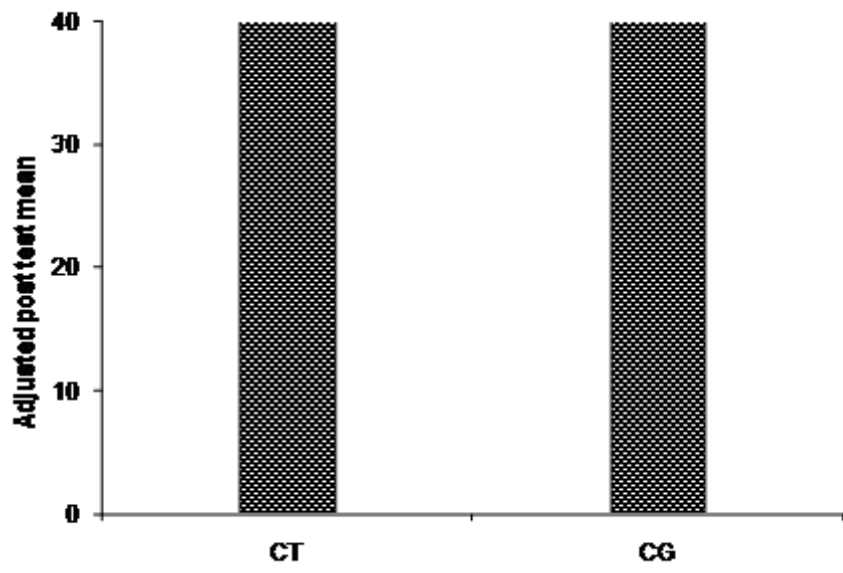


Figure 1: The adjusted post test mean value of aerobic circuit training group and control group on breath hold time

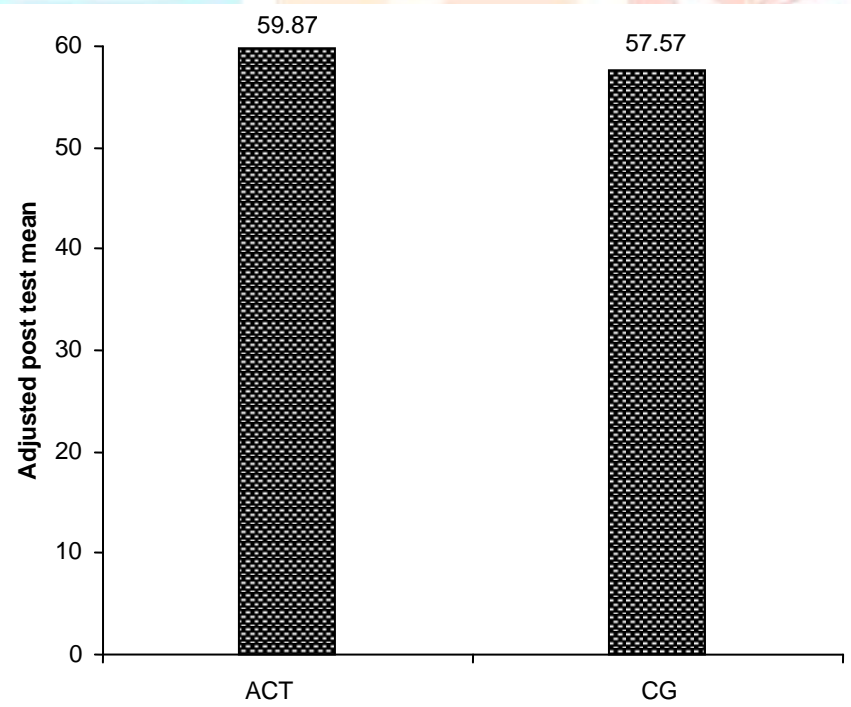


Figure 2: The adjusted post test mean value of aerobic circuit training group and control group on resting pulse rate

DISCUSSION

The result of the study reveals that there was a significant reduction of resting pulse rate and improvement of breath hold time due to twelve weeks aerobic circuit training result of the present study was in conformity with the finds of Adenrian and Toriola (1988); Brar (1986); Michel *et al.* (1960) and Madamohan *et al.* (1992).

Basal metabolic rate (BMR) is the number of calories used by the body when it is at rest. Along with, burning more calories aerobic training increase the basal metabolic rate and the basal metabolic rate can remain increased after 30 minutes of moderate physical activity. For aerobic training more blood must be supplied to the working tissue. This means that the heart will have to pump more blood and also more oxygen should reach the muscle by increased rate of respiration, oxygen helps to burn the calories more efficiency.

The aerobic training programme helps the person to achieve better oxygen, carbon-di-oxide exchange-resulting in better oxygen utilization, slower rate of breathing.

RESULTS

From the table the mean values are clearly stated twelve weeks of aerobic circuit training decrease the resting pulse rate and improves breath hold time for experimental group than control group. Hence it was concluded that, aerobic circuit training decrease resting pulse rate and improves breath hold time of boys.

CONCLUSION

The result of the study reveals that due to the impact of twelve weeks of aerobic circuit training the resting pulse rate and breath holding time of the college boys have significantly altered.

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