

# EFFECT OF AEROBIC AND AEROBIC CROSS TRAINING ON VITAL CAPACITY AMONG VOLLEYBALL PLAYERS

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**Abstract-** The purpose of the study was to find out the effect of aerobic training and aerobic cross training on vital capacity among volleyball players. To achieve this purpose of the study, sixty subjects were selected as subjects who were participated Inter collegiate volleyball tournament in Thajavur district. The selected subjects were aged between 18 to 25 years and they were examined by a qualified physician and certified that they were medically and physically fit to participate above programme. The selected subjects were randomly divided into three groups of 20 subjects each group. Group one acted as experimental group I (aerobic training) and group two acted as experimental group II (aerobic cross training) and group three acted as a control group. The experimental group subjects were underwent regular practice for twelve weeks. The subjects were tested on selected criterion variable such as vital capacity prior to and immediately after the training period. The selected criterion variable such as vital capacity was measuring by spirometer. In order to test the effect of training, the collected data before, and after the experimentation on the variable was statistically analysed by using ANCOVA. Whenever, the ANCOVA is found significant, the Scheffe's post hoc test is applied. The result of the present study has revealed that there was a significant improves the vital capacity among volleyball players.

**Keywords –** aerobic training, aerobic cross training, volleyball players, vital capacity

## I. INTRODUCTION

Active work is unpredictable conduct with various variables impacting its structure and setting. Various measures of active work seem, by all accounts, to be required for explicit wellbeing results. Two major inquiries for research are the degree to which active work gives wellbeing and additionally wellness advantage, and what definitions and measurements of active work are expected to help estimation of advantageous movement. The medical advantages of active work have been all around archived. Proof in the writing shows that there are positive physiological, mental, and social changes related to actual work. Wellness can be considered as the coordinating of the person to their physical and social climate. The world Health association characterized Fitness as "the capacity to perform strong work sufficiently". With regards to this definition, wellness suggests that the individual has accomplished those attributes that license a decent exhibition of a given actual undertaking in a predetermined physical, social and mental climate. The parts of wellness are various and are controlled by a few factors including the person's example of living propensities, diet, and heredity. The advantages of oxygen-consuming activity and wellness incorporate improved course and breath; the decreased danger of heart infections; improved fat digestion and diminished body weight (fat-free weight); fortified bones, tendons, and ligaments; character changes like upgraded self idea and self-perception and enthusiastic dependability. The expanded limit and flexibility related to high-impact wellness can add life to your years, not only years to your life. Oxygen-consuming activity work out can be separated into 4 stages: warm-up, expertise survey, heart stimulating exercise, and cool down. Each stage has its motivation without which the work-out is inadequate. Each period of the program is essential if the oxygen-consuming activity is to give the ideal advantages. The best explanation for beginning vigorous exercise is that it is fun, you can tailor-make your workout to music you

like, with companions you appreciate. However, high-impact practice likewise manages the cost of every member the advantages of all parts of wellness including adaptability, strength, cardiovascular perseverance, nimbleness, equilibrium, and coordination. Through reinforcing exercise, the muscles become better characterized, and your body gets firmer and all the more alluringly focused. By reinforcing the muscles you are requested to accomplish the right body arrangement and body carriage with expanded adaptability and strength you can move with opportunity, musicality, and elegance. The delicate bounce-back abilities increment your equilibrium and coordination, which persist to numerous different games and consistently exercises with expanded energy and indications of essentialness, you take on a solid, energetic appearance. In addition to the fact that you look better, you feel better and you are better! Vigorous exercise is additionally one type of preparation, which causes physical and physiological changes. The word 'heart stimulating exercise' just signifies 'with oxygen' and can subsequently be utilized to depict numerous types of activity or game-like running, swimming, moving, etc. The reason for every one of these types of activity is to make the muscles including the heart, which is a muscle-work more diligently than ordinary. This increment their requirement for oxygen and the body reacts both by breathing all the more profoundly, raising the oxygen admission through the lungs, and by accelerating the pulse, so more oxygen-rich blood is siphoned around the body to supply the muscles. The muscles accordingly become more grounded and more effective, while the entire cardiovascular framework the heart, lungs, and circulatory framework is turned up and improved ineffectiveness.

## II. MATERIALS AND METHODS

In the present study the subjects participating inter collegiate volleyball tournament in Thanjavur were considered as population for the study. A representative sample of 60 volleyball players in the age of 18-25 years was chosen as sample for the study. For this study vital capacity was chosen as a variable. The selected subjects were randomly divided into three groups of 20 subjects each group. Group one acted as experimental group I (aerobic training) and group two acted as experimental group II (aerobic cross training) and group three acted as a control group. The experimental group subjects were underwent regular practice for twelve weeks. The experimental group subjects were underwent regular practice for twelve weeks. The subjects were tested on selected criterion variable such as vital capacity prior to and immediately after the training period. The selected criterion variable such as vital capacity was measuring by spirometer. In order to test the effect of training, the collected data before, and after the experimentation on the variable was statistically analysed by using ANCOVA. Whenever, ANCOVA is found significant, the Scheffe's post hoc test is applied. In all the cases, 0.05 level was used to test this significance.

## III. EXPERIMENT AND RESULT

The examination of covariance on imperative limit of the aerobic training group (ATG), aerobic cross training group (ACTG) and the control groups (CG) were dissected and the outcomes are introduced in table I.

Table I shows that the pre-test implies on crucial limit of the oxygen consuming preparing bunch (ATG), vigorous broadly educating bunch (ACTG) and the benchmark groups (CG) are  $3258.36 \pm 384.01$ ,  $3287.42 \pm 352.12$  and  $3254.12 \pm 212.47$  individually. The acquired "F" proportion 1.02 for pre-test implies on imperative limit was not exactly the necessary table worth 3.15 for importance at .05 degree of certainty with df 2 and 57.

The post test implies on indispensable limit of the oxygen consuming preparing bunch (ATG), vigorous broadly educating bunch (ACTG) and the benchmark groups (CG) are  $3547.53 \pm 424.16$ ,  $3692.24 \pm 408.64$  and  $3256.27 \pm 212.47$  individually. The acquired "F" proportion 5.84 for post-test mean on essential limit was more prominent than the necessary table worth 3.15 for importance at .05 degree of certainty with df 2 and 57.

The changed post test implies on imperative limit of the vigorous preparing bunch (ATG), oxygen consuming broadly educating bunch (ACTG) and the benchmark groups (CG) are 3517.22, 3703.53 and 3261.42 individually. They got "F" proportion 33.48 for changed post-test implies on fundamental limit was more noteworthy than the necessary table worth 3.16 for importance at .05 degree of certainty with df 2 and 56.

It demonstrates that there was a critical contrast among the post test and changed post test methods for fundamental limit of the oxygen consuming preparing bunch (ATG), vigorous broadly educating bunch (ACTG) and the benchmark groups (CG).

TABLE I  
THE BAR DIAGRAM SHOWS THAT THE PRE, POST AND ADJUSTED POST TEST MEAN ON VITAL CAPACITY OF AEROBIC, AEROBIC CROSS TRAINING AND CONTROL GROUPS

	Aerobic Training	Aerobic Cross Training	Control Group	SOV	Sum of Squares	df	Mean Square	'F' ratio
Pre- test Mean S.D.	3258.36	3287.42	3254.12	B	1048.45	2	524.23	1.02
	384.01	352.12	212.47	W	29295.15	57	513.95	
Post-test Mean S.D.	3547.53	3692.24	3256.27	B	12508.24	2	6254.12	5.84*
	424.16	408.64	257.64	W	61041.87	57	1070.91	
Adjusted Post-test Mean	3517.22	3703.53	3261.42	B	2512.69	2	1256.35	33.48*
				W	2101.68	56	37.53	

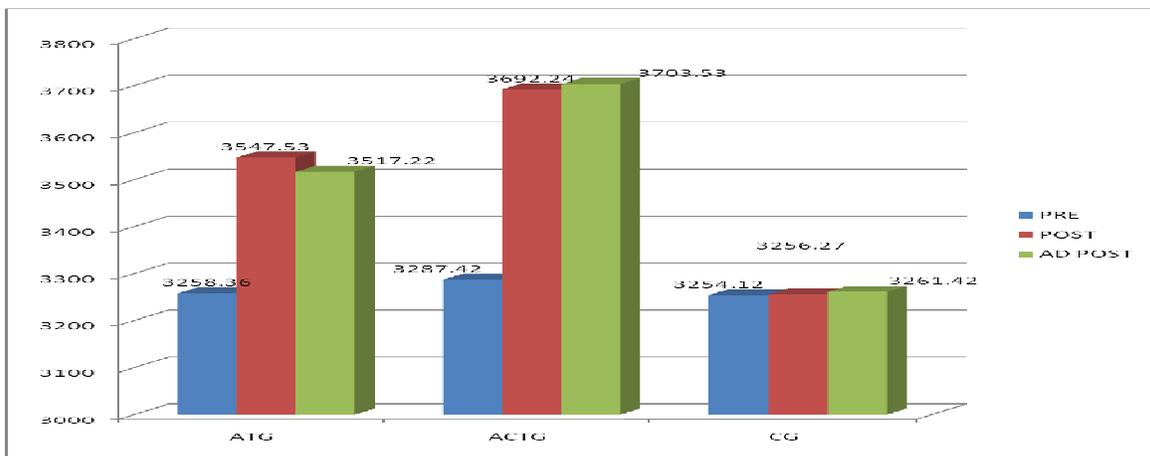
To discover which of the matched methods had a huge contrast, the Scheffe's post-hoc test is applied and the outcomes are introduced in table II.

Table II  
Scheffe's test for the differences between the adjusted post-test paired means on vital capacity

Aerobic Training	Aerobic Cross Training	Control Group	Mean Difference	C I Value
3517.22	3703.53		186.31*	122.57
3517.22		3261.42	255.80*	
	3703.53	3261.42	442.11*	

Table II shows that the changed post-test mean contrast in crucial limit among ATG and ACTG, ATG and CG, and among ACTG and CG are 186.31, 255.80 and 442.11 which were more noteworthy than the certainty stretch worth 122.57 at 0.05 degree of certainty.

The pre, post and changed post-test mean upsides of vigorous, high-impact broadly educating gatherings and control bunch on crucial limit were graphically addressed in Figure.



## IV.CONCLUSION

The consequences of the examination signifies that the trial bunches specifically oxygen consuming preparing and high-impact broadly educating bunch have fundamentally contrasted from the chosen subordinate factors in particular imperative limit, with the benchmark group. It is additionally tracked down that the improvement brought about by aerobic cross training was more prominent when contrasted with the impacts brought about by the aerobic training group and control group.

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