



Effect of Aerobic Endurance Training Programme on Selected Cardiovascular Functions

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Abstract

Objective: The first objective of the present study was to determine the level of variables chosen for the study (Resting heart rate, Blood pressure (Systolic and Dystolic), Endurance (Vo2 Max), Vital Capacity, Respiratory rate, Breath Holding Capacity. The second objective of the present study was to determine the prepare a comprehensive training programme. The third objective was to compare the experimental group and control group. **Methods:** For the present study the total fourty male subjects were randomly selected for the study. Out of 10 randomly chosen male having a place will distinctive aggregations with composition of one control and two experimental groups. Analysis of Co-variance was calculated followed by post hoc tes were employed to determine the effect of Low intensity Aerobic Programme on Cardiopulmonary and Respiratory functions of the selected subjects. **Results:** There may not be significant effect of Ergometric endurance training programme was accepted in case Vital capacity, Diastolic blood pressure and Vo2 max in 25 years whereas null hypothesis was and not accepted in case of vo2 max in 30 years. Further, the null hypothesis was rejected in case of Breathing Holding capacity, Resting heart rate, Resting respiratory rate and systolic blood pressure.

Key Words: Aerobic Endurance Training, Cardiovascular Etc.

1. Introduction:

Being a man or a woman has a significant impact on health, as a result of both biological and gender-related differences. The health of women and girls is of particular concern because, in many societies, they are disadvantaged by discrimination rooted in socio cultural factors. Better health is central to human happiness and well-being. It and makes an important contribution to economic progress, as healthy populations live longer, are more productive, and save more. Many factors influence health status and a country's ability to provide quality health services for its people. Ministries of health are important actors, but so are other government departments, donor organizations, civil society groups and communities themselves. As the study is limited to explain the different phenomena of fitness. First of all I like to explain in brief way the different kind of fitness and their various effects on the systems as well as body. As it is true if a individual apply physical pressure such as physical exercise whether it is light exercise or vigorous it makes the difference on their physical health, it improves the body not only physicaly as well as it improves the entire body mechanism like all the systems, muscle strength, body physique and so on. It depends upon the intensity of work which is being perform by individual and how long time he or she can sustain that work contineously. Several studies reveals that a systmatic physical exercise programme definitely improve the progress of human health but the amount of progress is differe. It depends upon so many factors like gender differences, geographical conditions, economical status, nutritional in take, age factor and so on accordingly we have to plan a set of training programme.

So the question is that if the progress of human health and fitness is depends upon so many factors so why the training programme is same for all individuals. It should also be change according to the factors effecting, therefore I further delimitte my study to two different age groups.

Cardiovascular effectiveness could be evaluated toward regulate estimation of maximal oxygen uptake (VO2 max) throughout a graded exercise test. The failure to test vast number of people in one time, and the prerequisite that members practice to depletion limits it's utilize. As a result, various sub-maximal practice test need been formed. Those Astrand rhying sub maximal vigorous rundown gives exact estimates from claiming VO2 max dependent upon body weight What's

more enduring state heart rate at An enduring state stepping pace. The utilization about sub-maximal prediction tests alleviates those necessity for members will practice during helter skelter intensities What's more might tolerance test with a chance to be performed for more than particular case member at once. Those result about sub maximal prediction tests might make used to evaluate VO2 max and screen progressions over VO2 max that happen as an aftereffect for physical preparation.

The concept of progressive overload was accepted from the time of the ancient Olympic Games. The fabled Milo of Croton gained his strength by regularly lifting a growing calf over his head each day. The improvement in fitness over time is not a linear process. The greatest improvements in fitness accrue during the early stages of a fitness training programme. Gains become increasingly difficult to obtain as the tissues approach their theoretical limit of adaptability.

The law of disuse indicates that the fitness of the organism deteriorates if it is not regularly subjected to load. Gains in fitness are reversed if the training stimulus is too low, if the athlete has incurred injury or training is abandoned during the offseason period. Gradually the physiological adaptations acquired through strenuous training are lost as 'detraining' sets in, although the rate of loss may be less than that at which gains were acquired. Without exercise skeletal muscles atrophy and the bones of the skeleton lose mineral content and become weakened. Some physical activity during detraining and recovery from injury helps to reduce the fall in fitness level and eases the later return to fitness training. The principle of specificity suggests that training effects are limited to the pattern of muscular involvement in the conditioning exercises that are used. Different types of motor units exist within skeletal muscle so that a given type of exercise recruits a specific combination of motor units best suited to the task in hand. Training programmes for soccer should, whenever possible, be related to the demands of the game. In some instances training can be designed for players to work 'with the ball'. In other instances, for example in training the strength of the hamstrings or adductor muscle groups, it is necessary to isolate the muscles for specific training.

The principles of overload, reversibility and specificity contain a framework for designing and regulating training programmes. Their operation at a generic level provides an understanding of how continuous adaptation is achieved. At the outset individuals will differ in their capabilities due to genetic factors. They will and vary in the extent to which these capabilities can be improved in training. The trainer's quandary is how to tread the thin line separating optimum physiological accommodation from unwanted harmful overload and a failure to adapt. The effects of training depend on the physiological stimulus provided by the exercise undertaken. The dimensions of exercise are its intensity, its duration and its frequency. A consideration relevant to these factors is the type of exercise performed.

Problem on Hand

The reason for the study is to figure out those impact factors provide vigorous effect on chosen cardiovascular and Furthermore Pulmonary works.

2. Methodology:

In this section selection of subjects, selection of variables, criterion measures, Sampling technique, collection of data, administration of test and statistical technique for the analysis of data has been described.

2.1 Selection of the Subjects:

Total fourty male subjects were randomly selected for the study. Out of 10 randomly chosen male having a place will distinctive aggregations with composition of one control and two experimental groups.

Table: 1
Classification of Subjetsc

Gender	Age	Group	Aerobic Training
Male	25 years	Experimental Group-A1	Ergometer Endurance
		Control Group-A	Normal training
	30 years	Experimental Group-B1	Ergometer Endurance
		Control Group-B	Normal training

2.2 Criterion Measures:

Harvard Step Test used for the Vo2 max that involved 5 min session and the recording of the heart rate (converted to 60 seconds in terms of number of beats/min) at the end of the test. Measuring criteria for vo2 max used was ml.kg.⁻¹.min⁻¹ using Astrand and Astrand Nomogram which later on converted to L/kg.

Rate of the Heart and Pressure of the Blood was measured with Automatic Digital Blood Pressure Monitor and the recording method was beats per minute B/M.

One minute Respiratory Rate was measured manually respiratory rate score of one.

Vital Capacity was measured in liters through Dry spirometer.

Manual method was used to measure Positive Breath Holding Capacity in seconds.

2.3 Training programme:

Training programme was provided during morning hours to students in the college campus. Data was taken when they were not busy and have enough time to spare for testing. Necessary instructions were given to the subjects before the administration of each test. An utmost care, precaution and importance was given to administration of the selected Aerobic Training program. Prior to conduct of experimental Aerobic training programs Pre test in all the criterion variables on which the effect of aerobic program was to seen were tested for control and experimental group. Finally, after ten week post test data was taken. Pretest-Posttest Randomized-Group Design was used for the present study.

2.3 Training programme:

Days	Time		Warming Up	Experimental Group	Control Group
	Start	Finish			
Monday, Wednesday Friday	5.30 am	6.30 am	General Light Jogging	10 min.	Ergometer training programme Normal Schedule

2.4 Statistical Technique:

Descriptive statistics involving mean and SD were calculated to achieve the purpose of the study.

Analysis of Co-variance was calculated followed by post hoc tes were employed to determine the effect of Low intensity Aerobic Programme on Cardiopulmonary and Respiratory functions of the selected subjects

3. Analysis of Data and Results of the Study:

The statistical analysis of data collected on 40 subjects belonging to experimental and control with 10 subjects in each individual groups has been presented in this chapter. The data on selected criterion measures for all the groups were collected under similar conditions.

In order to test the objective of the present study, the data was examined by applying mean, standard deviation and analysis of covariance (ANCOVA). Analysis of covariance was applied with regards to two experimental groups and a control group. The study was conducted at 0.05 level of significance.

Summary of the Results

Variables	25 Years	30 Years
	Significant effect	
Breath Holding Capacity	Yes	Yes
Resting Heart Rate	Yes	Yes
Vital Capacity	No	yes
Resting Respiratory Rate	Yes	Yes
Systolic blood pressure	Yes	Yes
Diastolic Blood Pressure	No	Yes
Vo2 Max	No	No

4. Discussion of Hypothesis:

The hypothesis that there may not be significant effect of Ergometric endurance training programme was accepted in case Vital capacity, Diastolic blood pressure and Vo₂ max in 25 years whereas null hypothesis was and not accepted in case of vo₂ max in 30 years. Further, the null hypothesis was rejected in case of Breathing Holding capacity, Resting heart rate, Resting respiratory rate and systolic blood pressure.

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