



Effect of Anaerobic Training on Selected Motor Fitness Components among University Men Students

D. J. Asath Ali Khan¹ & Dr. R. Sevi²

¹Research Scholar (Part Time – External), Department of Physical Education and Sports Sciences, Annamalai University, Chidambaram, Tamilnadu, India.

²Assistant Professor, Department of Physical Education and Sports Sciences, Annamalai University, Chidambaram, Tamilnadu, India.

Received 5th February 2018, Accepted 1st March 2018

Abstract

The purpose of the study was to find out the effect of anaerobic training on selected motor fitness components namely speed and agility. To achieve this purpose of the study, thirty university men studying in the Department of Physical Education and Sports Sciences, Annamalai University, Annamalainagar, Chidambaram, Tamilnadu, India were selected as subjects at random. The selected subjects were divided into two equal groups of fifteen subjects each, such as anaerobic training group and control group. The group I underwent anaerobic training for three days per week for twelve weeks. Group II acted as control who did not participate any special training programmes apart from their regular activities as per their curriculum. The following motor fitness components namely speed and agility were selected as criterion variables. All the subjects of two groups were tested on selected dependent variables at prior to and immediately after the training programme. The analysis of covariance (ANCOVA) was used to analyze the significant difference, if any among the groups. The .05 level of confidence was fixed as the level of significance to test the “F” ratio obtained by the analysis of covariance, which was considered as an appropriate. The results of the study revealed that there was a significant difference among anaerobic training group and control group on selected motor fitness components namely speed and agility. And also it was found that there was a significant change on speed and agility due to anaerobic training.

Keywords: Anaerobic, Motor, Fitness Components.

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Introduction

The word “anaerobic” means “without oxygen.” When doing anaerobic exercises, such as sprinting, you very quickly become out of breath. It is impossible to sprint for long periods of time. You must soon stop to catch your breath. Anaerobic exercises are used by top athletes to build up their speed. But in an ordinary physical fitness program, anaerobic exercises are not recommended. Instead you should concentrate on aerobic exercises. Aerobic interval training involves you shaking up your usual aerobic exercise routine in that you incorporate other exercises so as to make it fun to do. Take running; you can incorporate a short burst of jogging and then go back to running vigorously. This alternative way of doing exercises can help you lose more calories and also expend energy. While most athletes training regimen includes both strength and endurance training, there is relatively little research that shows a clear performance benefit of strength training for endurance athletes.

Methodology

The purpose of the study was to find out the effect of anaerobic training on selected motor fitness components namely speed and agility. To achieve this purpose of the study, thirty university men studying in the Department of Physical Education and Sports Sciences, Annamalai University, Annamalainagar, Chidambaram, Tamilnadu, India were selected as subjects at random. The selected subjects were divided into two equal groups of fifteen subjects each, such as anaerobic training group and control group. The group I underwent anaerobic training for three days per week for twelve weeks. Group II acted as control who did not participate any special training programmes apart from their regular activities as per their curriculum. The following motor fitness components namely speed and agility were selected as criterion variables. All the subjects of two groups were tested on selected dependent variables at prior to and immediately after the training programme. The analysis of covariance (ANCOVA) was used to analyze the significant difference, if any among the groups. The .05 level of confidence was fixed as the level of significance to test the “F” ratio obtained by the analysis of covariance, which was considered as an appropriate.

Correspondence

D.J.Asath Ali Khan

E-mail:asathalikhan@gmail.com, Ph. +9180560 70301

Training Programme

The anaerobic training group underwent their training programme as three days per week for twelve weeks. Training was given in the morning session. The training session includes warming up and limbering down. Every day the workout lasted for 45 to 60 minutes approximately. The subjects underwent their training programmes as per the schedules under the strict supervision of the investigator. During experimental

period control group did not participate in any of the special training.

Analysis of the Data

The influence of anaerobic training on speed and agility were analyzed and presented below. The analysis of covariance on speed of pre and post tests for SAQ training group and control group was analysed and presented in Table I.

Table 1

Ancova on speed of pre and post test for anaerobic training group and control group

Test	Anaerobic Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean			Between		1		
	7.60	7.67	Within	0.0403	28	0.0403	2.51
S.D.	0.15	0.15		0.4493		0.0160	
Post Test							
Mean			Between		1		
	7.39	7.66	Within	0.5333	28	0.5333	14.95*
S.D.	0.09	0.09		0.9987		0.0357	
Adjusted Post Test							
Mean	7.43	7.63	Between	0.2728	1	0.2728	87.81*
			Within	0.0839	27	0.0031	

* Significant at .05 level of confidence.

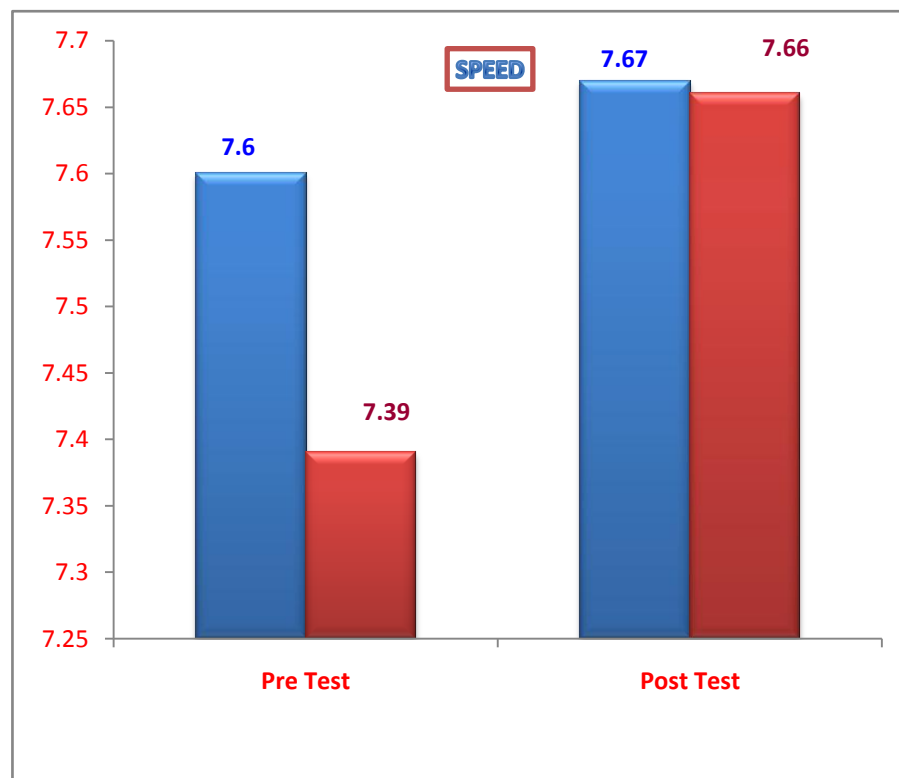
(The table values required for significance at .05 level of confidence for 1 and 28 and 1 and 27 are 4.20 and 4.21 respectively).

The table 1 shows that pre-test means on speed of anaerobic training group and control group are 7.60 and 7.67 respectively. The obtained "F" ratio of 2.51 for pre -test means is less than the table value of 4.20 for df 1 and 28 required for significance at .05 level of confidence on speed. The post-test means on speed of anaerobic training group and control group are 7.36 and 7.66 respectively. The obtained "F" ratio of 14.95 for post-test means is more than the table value of 4.20 for df 1 and 28 required for significance at .05 level of confidence on speed. The adjusted post-test means on

speed of anaerobic training group and control group are 7.43 and 7.63 respectively. The obtained "F" ratio of 87.81 for adjusted post-test means is more than the table value of 4.21 for df 1 and 27 required for significance at .05 level of confidence on speed. The results of the study indicated that there was a significant difference between the adjusted post-test means of anaerobic training group and control group on speed. The pre, post test mean values of anaerobic training group and control group on speed were graphically represented with Figure I.

Figure 1

Pre and post test data on speed



The analysis of covariance on agility of pre and post tests for anaerobic training group and control group was analysed and presented in Table 2.

Table 2

Ancova on agility of pre and post test for anaerobic training group and control group

Test	Anaerobic Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	6.87	6.83	Between	0.0083	1	0.0083	0.33
S.D.	0.17	0.16	Within	0.7067	28	0.0252	
Post Test							
Mean	6.65	6.80	Between	0.1763	1	0.1763	6.22*
S.D.	0.13	0.12	Within	0.7937	28	0.0283	
Adjusted Post Test							
Mean	6.63	6.81	Between	0.2475	1	0.2475	99.00*
			Within	0.0675	27	0.0025	

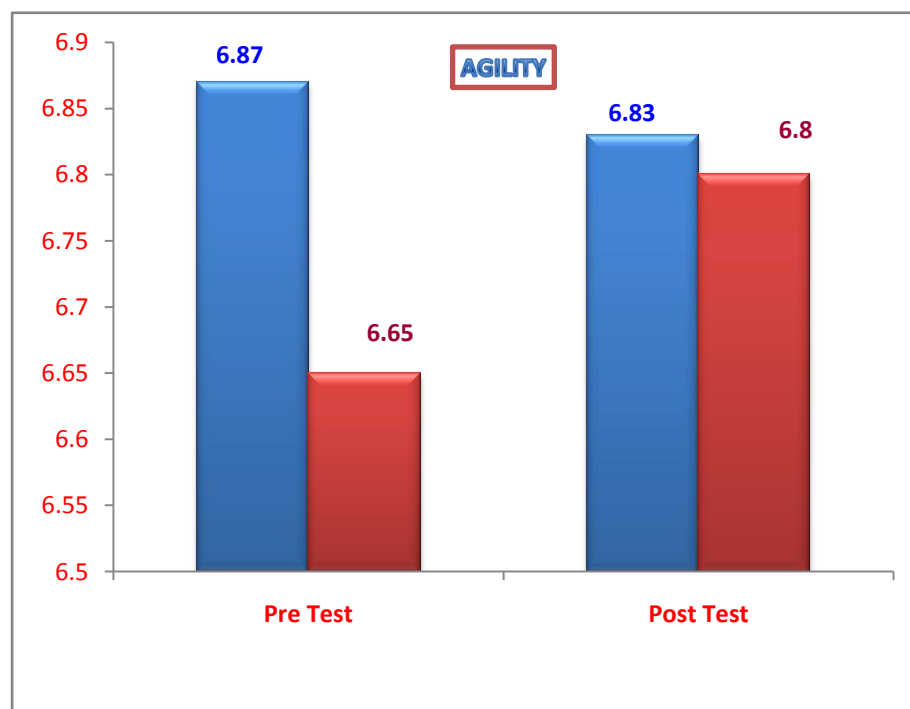
* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 1 and 28 and 1 and 27 are 4.20 and 4.21 respectively).

The table 2 shows that pre-test means on agility of anaerobic training group and control group are 6.87 and 6.83 respectively. The obtained “F” ratio of 0.33 for pre -test means is less than the table value of 4.20 for df 1 and 28 required for significance at .05 level of confidence on agility. The post-test means on agility of anaerobic training group and control group are 6.65 and 6.80 respectively. The obtained “F” ratio of 6.22 for post-test means is more than the table value of 4.20 for df 1 and 28 required for significance at .05 level of confidence on agility. The adjusted post-test means on agility of anaerobic training group and control group are 6.63 and 6.81 respectively. The obtained “F” ratio of 99.00 for adjusted post-test means is more than the table value of 4.21 for df 1 and 27 required for significance at .05 level of confidence on agility. The results of the study indicated that there was a significant difference between the adjusted post-test means of anaerobic training group and control group on agility. The pre, post test mean values of anaerobic training group and control group on agility were graphically represented with Figure II.

Figure II

Pre and Post Test Data on Agility



Results

1. There was a significant difference between anaerobic training group and control group on speed.
2. There was a significant difference between anaerobic training group and control group on agility.
3. There was a significant change on selected criterion variables namely speed and agility due to twelve weeks of anaerobic training.

References

1. Baker D, “Differences in strength and power among junior- high, senior high college-Aged, and elite professional rugby league players”. *Journal of Strength and Conditioning*, 16 :4, 2002.
2. Benedict Tan, “Manipulating Resistance Training Programme Variables to Optimize Maximum Strength in Men”, *The Journal of Strength and conditioning Research*, 13:3, 1999.
3. Blakey and D. Southard, “The Combined Effects of interval training and Ploymeric on Dynamic Leg Strength and Leg Power”, *Journal of applied Sports Science Research* ,1981.
4. Clarke and Clarke, *Application of Measurements to Physical Education*. New Jersey: The Prentice Hall Inc., 1978.
5. Dick, Frank W., *Sports Training Principles*, London: Henry Kimpton Publishers Limited, 1996.
6. Hass et. al. “Effects of training Volume on Strength and Endurance in experimental resistance trained adults”, *Medicine and Science in Sports and Exercise*, 30 :3, 1998.
7. Hiseada et al., “Influences of two different Modern of resistance training in female Subjects” *Ergonomies*, 39:6, (June, 1996).
8. Hooks, Gene, *Application of Weight training to Athletics*. New York: Ronald Press Company,1962.

9. John et. al. “*Effect of a interval Training Program on Leg Strength and Muscle Endurance of Older Women*”, as cited by *Medicine and Science in Sports had Exercise*, 12,1998.
10. Johnson, Barry L. and Jack K. Nelson, *Practical Measurements for Evaluation in Physical Education*. Delhi: The Surject Publications, 1982.
11. Mann Delores, “*The Relationship of the Strength and Flexibility to free Running Speed*”, *Completed Research in Health Physical Education and Recreation*, 1, (October 1967).