EFFECT OF CONTINUOUS TRAINING AND INTERVAL TRAININGON SELECTED VO2 MAXAMONG COLLEGE LEVEL MEN BOXERS

Dr.M.Girinathan,

Physical Director, University College of Engineering Arni

Abstract:

*Aim:*The objective of the present study is to identify the effects of continuous training and interval training performances on VO2 MAXamong college level boxers.

Methodology: Twelve weeks of continuous trainingwas studied with constant-VO2 MAXprocedure and constant-time procedure.Twelve weeks of interval training was studied.ANCOVA statistical analyses have been used to analyses the performance and outcome of the men boxers and Scheffe's post hoc test was used to find out the mean difference of confidence continuous training and Interval training.

Result: The submaximal-performance effects on VO2 MAXF-ratio at 0.05 level of confidence for 2 and 87 (df) =3.06, 2 and 86 (df) =3.06. Significant is better than control group.

Keywords: VO2 MAX, continuous and interval training

1.0. Introduction

The present study sought to evaluate the inconsistencies previously observed regarding the pre dominance of continuous and interval training for improving VO2 MAX .The experimental design initially equated and subsequently maintained the same relative exercise intensity by both groups throughout the programs. Thirty subjects were equally divided into continuous training (continuous training, exercise at 50% to 60% maximal work) or interval training (30 subject as working group and control group respectively at 100% maximal work) training groups that performed 30 min per day for 3 days in all 12 weeks. Following continuous training and interval training, exercising work rates were parallel examined both the interval training and continuous training.Three equated groups were performed to measure the performance of VO2 MAX; one group act as control group and another two group act as experimental group. Interval training and continuoustraining regimens are used to improved physiological aspect. There is conflicting evidence as to which is the more effective in improving biochemical, physiological, and performance measures (Cunninghametal. 1979). The purpose of this study were to compare the effects of using the same relative work intensities in the two training modes and examine their effect in continuous training and Interval training tests.

2. 0. Methodology

2.1. Sample selection

Simple random procedure was used to select the subjects for the present study. To delimit the present study only male boxers of Tamilnadu were selected. Totally,90 members have been taken as sample size. The samplesize was divided into three groups namely; continuous training group, interval traininggroup and control group.

2.2. Collection of data

A selected package of continuous training and interval training were administered to collect the data. 12 weeks was administered to all three groups. The performance of all groups was administered for only 30 min per day especially for continuously 3 days in all 12 weeks.

2.3. Analysis

ANCOVA and Scheffe's post hoc test were used for the study. The mean, sum of squares, mean square and f-ratio are identified by using the SPSS package and Microsoft version is used to all the tabular columns and figures.

2.4. Selection of Variables

The various scientific literatures have been reviewed, based on the review VO2 MAXamong college level boxers in Tamil Nadu was selected as variables of the present study.

3. 0. COMPUTATION OF ANALYSIS OF COVARIANCE AND POST HOC TEST RESULTS ON VO2 MAX

The statistical analysis comparing the initial and final means of VO2 MAXdue to Continuous training and Interval training among college level boxers is presented in Table 1.

Table I

ANCOVA RESULTS ON EFFECT OF CONTINUOUS TRAINING AND INTERVAL TRAINING COMPARED WITH CONTROLS ON VO2 MAX

	CONTINUOUS TRAINING	INTERVAL TRAINING	CONTROL GROUP	SOURCE OF VARIANCE	SUM OF SQUARES	df	MEAN SQUARES	OBTAINED F
Pre Test Mean	37.38	35.95	36.82	Between	31.28	2	15.64	0.78
				Within	1734.16	87	19.93	
Post Test Mean	40.76	40.00	36.90	Between	251.65	2	125.83	8.98*
				Within	1219.34	87	14.02	
Adjusted Post Test Mean	40.38	40.45	36.83	Between	256.12	2	128.06	17.47*
				Within	630.41	86	7.33	
Mean Diff	3.39	4.05	0.07					

Table F-ratio at 0.05 level of confidence for 2 and 87 (df) =3.06, 2 and 86 (df) =3.06.
*Significant

As shown in Table I, the obtained pre test means on VO2 max on Continuous training group was 37.38, Interval training group was 35.95 was and control group was 36.82. The obtained pre test F value was 0.78 and the required table F value was 3.06, which proved that there was no significant difference among initial scores of the subjects.

The obtained post test means on VO2 max on Continuous training group was 40.76, Interval training group was 40.00 was and control group was 36.90. The obtained post test F value was 8.98 and the required table F value was 3.06, which proved that there was significant difference among post test scores of the subjects.

Taking into consideration of the pre test means and post test means adjusted post test means were determined and analysis of covariance was done and the obtained F value 17.47 was greater than the required value of 3.06 and hence it was accepted that there was significant differences among the treated groups.

Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table II.

Table II
Multiple Comparisons of Paired Adjusted Means and Scheffe's Confidence Interval Test Results on VO2 max

MEANS				Required . C I
Continuous training Group	Interval training Group	Control Group	Mean Difference	
40.38	40.45		-0.07	1.73
40.38		36.83	3.54*	1.73
	40.45	36.83	3.61*	1.73

* Significant

The post hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between Continuous training group and control group (MD: 3.54). There was significant difference between Interval training group and control group (MD: 3.61). There was no significant difference between treatment groups, namely, Continuous training group and Interval training group. (MD: -0.07).

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure 1.

Figure 1BAR DIAGRAM SHOWING PRE TEST, POST TEST AND ORDERED ADJUSTED MEANS ON VO2 MAX
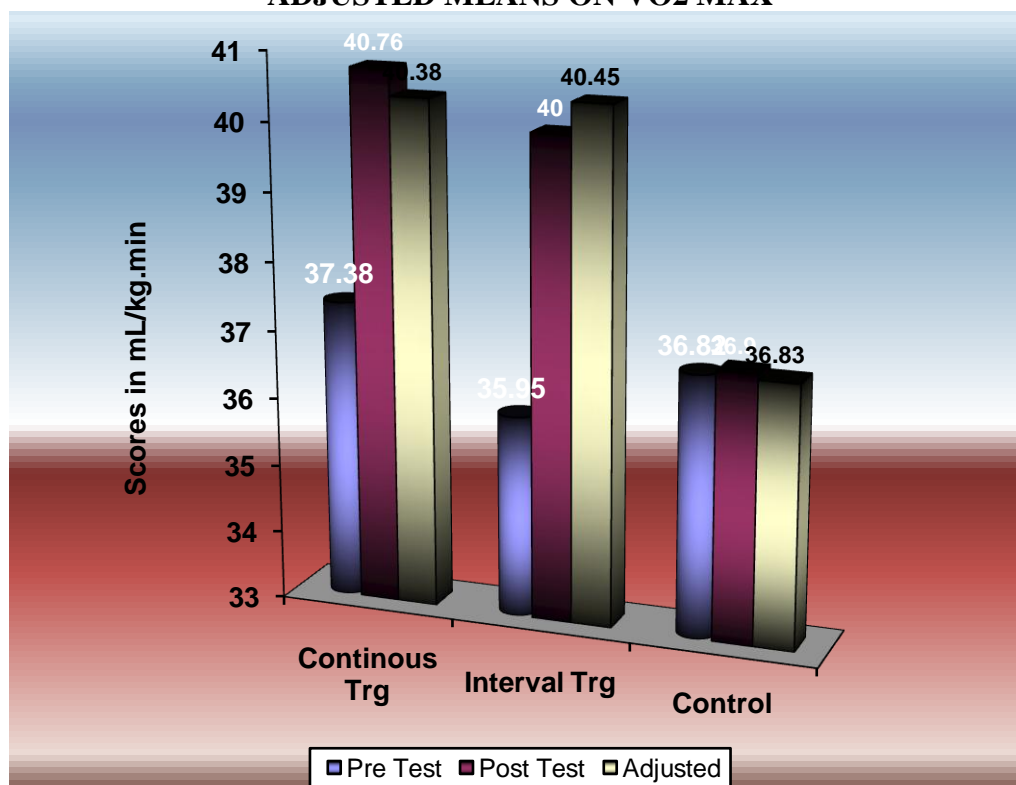
3.2 DISCUSSIONS ON FINDINGS ON VO2 MAX

In order to find out the effect of Continuous training and Interval training on VO2 max the obtained pre and post test means were subjected to ANCOVA and post hoc analysis through Scheffe's confidence interval test.

The effect of Continuous training and Interval training on VO2 max is presented in Table I. The analysis of covariance proved that there was significant difference between the experimental

group and control group as the obtained F value 17.47 was greater than the required table F value to be significant at 0.05 level.

Since significant F value was obtained, the results were further subjected to post hoc analysis and the results presented in Table II proved that there was significant difference between Continuous training group and control group (MD: 3.54) and Interval training group and control group (MD: 3.61). Comparing between the treatment groups, it was found that there was no significant difference between Continuous training and Interval training group among college level boxers.

Thus, it was found that continuous training and interval training was significantly better than Continuous training and control group in improving VO2 max of the college level boxers.

4.0. RESULTS ON VO2 MAX
The statistical analysis comparing the initial and final means of **VO2 MAX**Due to Continuous training and Interval training among college level boxers is presented in Table I

5.0. Conclusion
In the present study, the effects of 12 week of exercise(continuous training and interval training), were studied in college level men boxers. The data showsthat here is a significantincrease in theperformanceof **VO2 MAX**sports training of the college level male boxers.

Reference
1. Abate N, Burns D, Peshock RM, Garg A, Grundy SM. Estimation of adipose tissue mass by magnetic resonance imaging: validation against dissection in human cadavers. J Lipid Res 35: 1490 –1496, 1994.
2. Ahotupa M, Suomela JP, Vuorimaa T, Vasankari T. Lipoproteinspecific transport of circulating lipid peroxides. Ann Med 42: 521–529, 2010. doi:10.3109/07853890.2010.510932.
3. Ait-Omar A, Monteiro-Sepulveda M, Poitou C, Le Gall M, Cotillard A, Gilet J, Garbin K, Houllier A, Chateau D, Lacombe A, Veyrie N, Hugol D, Tordjman J, Magnan C, Serradas P, Clement K, Leturque A, Brot-Laroche E. GLUT2 accumulation in enterocyte apical and intracellular membranes: a study in morbidly obese human subjects and ob/ob and high fat-fed mice. Diabetes 60: 2598 –2607, 2011. doi:10.2337/ db10-1740.
4. Aston JAD, Cunningham VJ, Asselin MC, Hammers A, Evans AC, Gunn RN. Positron emission tomography partial volume correction: estimation and algorithms. J Cereb Blood Flow Metab 22: 1019 –1034, 2002. doi:10.1097/00004647-200208000-00014.
5. Burgomaster KA, Hughes SC, Heigenhauser GJF, Bradwell SN, Gibala MJ. Six sessions of sprint interval training increases muscle oxidative potential and cycle endurance capacity in humans. J ApplPhysiol (1985) 98: 1985–1990, 2005. doi:10.1152/japplphysiol.01095.2004.
6. Drozdowski L, Thomson AB. Intestinal hormones and growth factors: effects on the small intestine. World J Gastroenterol 15: 385–406, 2009. doi:10.3748/wjg.15.385.
7. Eskelinen JJ, Heinonen I, Löyttyniemi E, Saunavaara V, Kirjavainen A, Virtanen KA, Hannukainen JC, Kalliokoski KK. Muscle-specific glucose and free fatty acid uptake after sprint interval and moderateintensity training in healthy middle-aged menJApplPhysiol(1985)118: 1172–1180,2015/japplphysiol.01122.2014.
8. Albright A, Franz M, Hornsby G, et al. American College of Sports Medicine position stand. Exercise and type 2 diabetes. Med Sci Sports Exerc2000;32:1345–60.
9. Cuff DJ, Meneilly GS, Martin A, et al. Effective exercise modality to reduce insulin resistance in women with type 2 diabetes. Diabetes Care 2003;26:2977–82.

10. Mourier A, Gautier JF, De Kerviler E, et al. Mobilization of visceral adipose tissue related to the improvement in insulin sensitivity in response to physical training in NIDDM. Effects of branched-chain amino acid supplements. Diabetes Care 1997;20:385–91.

11. Sigal RJ, Kenny GP, Boulé NG, et al. Effects of aerobic training, resistance training, or both on glycemic control in type 2 diabetes: a randomized trial. Ann Intern Med 2007;147:357–69.

12. Panel OE. American College of Cardiology/American Heart Association Task Force on Practice Guidelines, Obesity Expert Panel, 2013. Expert Panel Report: Guidelines (2013) for the management of overweight and obesity in adults. Obesity 2014;22(Suppl 2):S41–1.