

## THE EFFECTS OF AEROBIC TRAINING ON TRIGLYCERIDE LEVEL OF MALE SPORTS PERSONS

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### Methodology Was Used For The Lipid Profile:

Following methods was used for evaluating the lipid profile. For evaluating the lipid profile of the subjects, 12-hour fasting Blood samples of both the aerobic and anaerobic groups was taken before and after the training programme.

The blood sample was analyzed for

- Serum Cholesterol
- Triglyceride (TG)
- High Density Lipoprotein (HDL.)
- Low Density Lipoprotein (LDL.)
- Very Low Density Lipoprotein (VLDL)

### Lipid Profile Tests

- Cholesterol estimation test.
- Triglycerides Estimation Test.
- HDL Cholesterol Estimation Test
- VLDL-C Estimation Test
- LDL- C Estimation Test

### Training Programme:

The following training program was given to the subjects:-

**I. Aerobic Training:**

- a. From basal to 2 weeks, 40 W load intensity of exercise.
- b. From 2 to 4 weeks, 60 W load intensity of exercise.
- c. From 4 to 6 weeks, 80 W, Load intensity of exercise.

**II. Anaerobic Training:**

- a. Sprinting from basal to 2 weeks: 40 Mtr
- b. Sprinting from 2 weeks to 4 weeks: 60 Mtr
- c. Sprinting From 4 weeks to 6 weeks: 80 Mtr.
- d. Weight lifting: Number of repetition was increased gradually
- e. Weight resistance exercise: Weight was increased gradually according to their weight and heigh.
- f. Dumb bells: Number of repetition was increased

**TOOLS USED**

- i. Portable Weight Machine
- ii. Anthropometric rod
- iii. Bicycle Ergo meter
- iv. Weight lifting machine
- v. Dumb bells
- vi. Stop Watch
- vii. Spectromic 20 Colorimeter
- viii. Microscope
- ix. Neubar-counting slide
- x. Red blood cells fluid (0.9/Nacl. Sol.)
- xi. Pipette
- xii. Cover slip
- xiii. Spirit and water
- xiv. Clean cloth

**Methodology Was Used For The Resting Pulse Rate And Rbc Count:**

The resting pulse rate and R.B.C. count was tested after 2 weeks, 4 weeks and 6 weeks of both aerobic and anaerobic groups.

The following method was used for resting pulse rate:

### **Resting Pulse Rate:**

The resting pulse rate was taken early in the morning when the subjects are still at bed and at the time when the subjects are going to the bed at night.

### **Red Blood Cells**

Thoma-zeiss Haemocytometer method was used. The blood was taken on the nebular counting slide, which is already adjusted on the microscope, first at low power, then at high power and finally placing with cover slip.

### **R.B.C. Calculation**

The following formula was applied for calculation of total number of red blood cells:

Total number of Red Blood Cells:  $X / 64 \times 4000 \times 200$  where  $x / 64$  = numbers of red blood cells in sixty-four small squares.

4000 = reverse the cubic capacity of each square.

200 = dilution of blood.

### **STATISTICAL TREATMENT OF THE DATA**

Statistical methods play very significant role in the interpretation of the numerical data obtained from the subjects by giving numerical expressions to the relationship and the variations with respect to different aspects. Keeping in view the aims of the study following statistical tools was used for the interpretation of Data.

### **DISCUSSION ON RESULTS**

Within the limitations of the present study, the following conclusions have been drawn:

1. The effects of aerobic training on triglyceride level of male was more than the effects of anaerobic training on triglyceride level but not significant, therefore hypothesis was accepted. So, there was no significant difference in Aerobic and Anaerobic exercises on Lipid Profile (triglyceride) of male sport persons at 0.05 levels.
2. The effects of aerobic training on triglyceride level of female was also more than the effects of anaerobic training on triglyceride level but not significant, therefore hypothesis was accepted. So, there was no significant difference in Aerobic and Anaerobic exercises on Lipid Profile (triglyceride) of female sport persons at 0.05 levels.
3. The effects of aerobic training on LDL level of male were more than the effects of anaerobic training on LDL level and it was significant at the level of .05, hence the hypothesis was rejected. So, There was significant difference in Aerobic and Anaerobic exercises on Lipid Profile (LDL) of male sport persons.
4. The effects of aerobic training on LDL level of female was more than the effects of anaerobic training on LDL level and it was significant at the level of .05 hence, the hypothesis was rejected. So, There was significant difference in Aerobic and Anaerobic exercises on Lipid Profile (LDL) of female sport persons.
5. The effects of aerobic training on HDL level of male was more than the effects of anaerobic training on HDL level and it was significant at the level of .05 hence, the hypothesis was rejected. So, there was significant difference in Aerobic and Anaer (HDL) of male sport persons.
6. The effects of aerobic training on HDL level of female was more than the effects of anaerobic training on HDL level and it was significant at the level of .05 hence, the hypothesis was rejected. So, there was significant difference in Aerobic and Anaerobic exercises on Lipid Profile (HDL) of female sport persons.
7. The effects of aerobic training on VLDL level of male was more than the effects of anaerobic training on VLDL level and it was significant at the level of .05 hence, the hypothesis was rejected. So, there was significant difference in Aerobic and Anaerobic exercises on Lipid Profile (VLDL) of male sport persons.
8. The effects of aerobic training on VLDL level of male was more than the effects of anaerobic training on VLDL level and it was significant at the level of .05 hence, the hypothesis was rejected. So, there was significant difference in Aerobic and Anaerobic exercises on Lipid Profile (VLDL) of male sport persons.
9. The effects of aerobic training on total cholesterol level of male was more than the effects of anaerobic training on total cholesterol level and it was significant at the level of .05 hence, the

hypothesis was rejected. So, There was significant difference in Aerobic and Anaerobic exercises on Lipid Profile (total cholesterol) of male sport persons.

10. The effects of aerobic training on total cholesterol level of female was more than the effects of anaerobic training on total cholesterol level and it was significant at the level of .05 hence, the hypothesis was rejected. So, There was significant difference in Aerobic and Anaerobic exercises on Lipid Profile (total cholesterol) of female sport persons.
11. The effects of aerobic training on pulse rate level of male was more than the effects of anaerobic training on pulse rate level and it was significant at the level of .05 hence, the hypothesis was rejected. So, There was significant difference in Aerobic and Anaerobic exercises on pulse rate of male sport persons.
12. The effects of aerobic training on pulse rate level of female was more than the effects of anaerobic training on pulse rate level it was significant at the level of .05 hence, the hypothesis was rejected. So, There was significant difference in Aerobic and Anaerobic exercises on pulse rate of female sport persons.
13. The effects of aerobic training on RBC level of male was more than the effects of anaerobic training on RBC level it was significant at the level of .05 hence, the hypothesis was rejected. So, There was significant difference in Aerobic and Anaerobic exercises on RBC of male sport persons.
14. The effects of aerobic training on RBC level of female was more than the effects of anaerobic training on RBC level it was significant at the level of .05 hence, the hypothesis was rejected. So, there was significant difference in Aerobic and Anaerobic exercises on RBC of female sport persons.

In last after analysis of results we can say there are aerobic training is more effective for maintain the lipid profile

**American Heart Association endorses the National Cholesterol Education Program (NCEP) guidelines for detection of high cholesterol (2002)** revealed that the 20 week aerobic training decreases the low-density lipoprotein (LDL) or "bad" cholesterol and increases the high-density lipoprotein (HDL) or "good" cholesterol.

#### **RECOMMENDATION:-**

To improve the existing state to affairs the investigator gives following recommendation:-

1. It is recommended that stress should be laid on creating the more interest in parents of High and Sen. Sec. School children toward physical education activity. To achieve the aim of producing the harmoniously developed citizens. We must have a well planned physical education programme at school level.
2. Physical Education should form the integral part of the curriculum of educational institutions.
3. Parents should be awarded about the participation of their daughter in Physical Education activities so that they may restrict their participation.
4. Similar study may be conducted in different regions of the country to discover variations in the attitude of parents of regional basis.
5. A Similar study may be undertaken to assess the attitude of the parents of the students of different government schools as the present study did not have subjects from government schools.
6. A study may be made to assess the attitude of the parents of the children residing in rural areas.
7. A similar study may be undertaken on all the classes and all the age groups starting from Class-1 to Post Graduate and from all types of schools and colleges such as government, private engineering, arts colleges etc.

#### **SUGGESTION: -**

The result of the present study will have an important bearing on planning for future programming of physical education and sports and the remedial measures to be undertaken to educate the parents regarding the values of physical education and sports towards educational goals and development of personality of students. The results of the present study will also be significant in the following ways:

1. Finding of the present study will help the Physical Education Professionals, coaches and Sports Scientists to understand the role and attitude of parents in promoting Physical Education and Sports.
2. The findings of the present investigation will provide scientific evidence to the society regarding their attitude, which may be helpful in developing a Physical Education and sports Culture.

#### **REFERENCES**

- Amanda Jones, (2009), *“Training at Optimal Heart Rate”* life line publishers, USA
- Angela (2009), *“Regular exercise and pulse rate”* Microsoft publishers USA.
- Bergstorm, J.L, Hermansen, L. Hyltman, E., Saltin, B. (1967). Diet. Muscle glycogen and physical performance, Acta, Physiol. Scand., 71 : 140-150

- Brown, R.C., Cox, C.M. (1998) Effects of high fat versus high carbohydrate diets on plasma lipids and lipoproteins in endurance athletes. *Med. Sci. Sports, Exercise*, 30 (12) 1677-1683.
- Cooper, D.M., Weiler, R.D., Whipps, B.(1985) Growth related changes in oxygen uptake and heart rate during progressive exercise in children *Pediatr. Res.*, 18:845.
- Cox, C.M. Brown, R.C. Mann, J.I. (1996) the effect of high Carbohydrate versus high -fat dietary advice on plasma lipids, lipoproteins, apolipoproteins and performance in endurance trained cyclists *Nut. Metab. Cardiovascular. Dir.*, 6 : 227-233.
- Davier. C.T.M. and Thompson, M.W., (1979) Aerobic Performance of female marathon and male ultramarathon athletes. *Eur J. of Appl. Physiol* 41: 233-245.
- Eaton., C.B., Lapane, K.L. Garber, C.E. (1995) Physical activity, Physical fitness and coronary heart disease risk factors *Med. Sci. Sports, Exercise.*, 58 : 148-151.
- Gupta S.P. (2009) “Statistical Method” Sultan Chand & Sons educational Publishers, New Delhi.
- Holloszy. J.O. (1990) Utilization of fatty acids during exercise. In: *Bio-Chemistry of exercise VII*, Vol. 21, Human Kinetics PP 319-322.
- Jones, H.L. (1975) Exercise testing in Pulmonary Evaluation. Rationale, Methods and the Normal respiratory response to exercise, *N. Engl. J. Med.*, 293; 541-544.
- Katzmarzyk PT, et. Al. “Changes in blood lipids consequent to aerobic exercise training related to changes in body fatness and aerobic fitness. *Metabolism*” 50:841–848, 2001.
- Karanth J, Jeevaratnam K (2009) “Effect of dietary lipid, carnitine and exercise on lipid profile in rat blood, liver and muscle” *Biochemistry and Nutrition Discipline, Defence Food Research Laboratory, Mysore 570 011, India.*
- [Laaksonen DE](#) (2009) Aerobic exercise and the lipid profile in type 1 diabetic men: a randomized controlled trial. Department of Physiology, University of Kuopio, Finland.
- Leon, A.S. Cannett, J.MRFIT (1991) Research Group Physical activity and 10.5 year mortality in the Multiple sick factors intervention trial. *Int. J. Epidemiol*, 20; 690-697
- Morris, R, Digenio, A., Padayachee, G.N. (1993) The effect of a 6 month Cardiac rehabilitation program on serum lipoprotein and apoprotein A1 and B and lipoprotein. *a. S. Afr. Med. J.*, 83 ; 315- 318.
- Muoio DM Leddy JJ Horvath PJ Awad AB (1994), Effect of Dietary Fat on Metabolic Adjustment to Maximal  $\text{VO}_2$  and Endurance in Runners, *Med. Sci. Sports Exe.*; 26(1) 81-88
- P Black Wcruickhank and D Ledingham. (1993) “Physical Education in Action” Thomas Publishing company, South Melbourne Australia.

- Pathak (2002) Wheat grass a cheap cure for ailments. The Tribune, October 19th P. N.O. 11, 2002.
- Reseland JE, Et. Al. Effect of long-term changes in diet and exercise on plasma leptin concentrations. Am J Clin Nutr **73**:240–245, 2001.
- Sheiffield, I.T. Malwf. J.A. Sawyer J.A. and Roitman. D. (1978) Maximal Heart Rate and Treadmill Performance of Healthy women in relation to age Circulation **59** ; 79-84.
- Snell PG and Mitchell JH (1984), The Role of Maximal o<sub>2</sub> Consumption in Exercise Performance Clinics in Chest Medicine, 5:51-62
- Takanami. Y. Shimomitru, T. Kawai, Y. (1999) Can Exercise enhance the production of oxidized LDL in Plasma. Med. Sci, Sports Exercise **31** (5): 5109.
- *William J. Banz Et. Al. (2003) "Effects of Resistance versus Aerobic Training on Coronary Artery Disease Risk Factors" Departments of Animal Science, Food and Nutrition and †Physiology, Southern Illinois University, Carbondale, Illinois.*