## Investigation of the Effects of Aerobic Exercise Programs on Hematological Parameters of Sedentary People

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Abstract : Background: A variety of studies warn that sedentary lifestyles can contribute to many preventable causes of death. This study was taken to determine the effects of two types of aerobic training programs on erythrocytes, leukocytes, hemoglobin concentration (Hb), platelets and hematocrit of sedentary people (N=60) with age group 20 to 30 years. Methods: All the subjects were randomly divided into three groups i.e. two experiments groups (aerobic dance & cardio fitness) and control group. Each group having 10 male and 10 females. Experimental groups undergone 60 minutes of training 5 times a week for 12 weeks whereas the control group did not participate in any training program except their daily routine. The aerobic dance group was chosen to perform exercise like step -touch, side-to-side, V-step and hand and body movements, etc. The cardio fitness group was chosen to perform exercises with modern fitness equipment like treadmill, elliptical trainer, stationary bike and rowing machine. Rating of perceived exertion (RPE) scale developed by Gunner Borg was used to monitor the intensity of the workout. Aerobic programs were encompassed of low-impact (0-4 week & perceived exertion from 6 to 12), moderate-impact (4-8 week and perceived exertion from 12 to 16) and high-impact (8-12 week & perceived exertion from 16 to 20). Results: To test the effectiveness of training programs paired t-test was used and significant difference (p < 0.05) was observed in erythrocytes, hemoglobin concentration, platelets, hematocrit but no significant effects of training was found in leukocytes (p>0.05). Paired t-test also showed that no effect of time was seen in the control group in all the cases (p>0.05). Further analysis of covariance was used to know which program was more effective and it was seen that F value was found significant in the case of erythrocytes, hemoglobin concentration, platelets, and hematocrit as their associated p-value (p<0.05) is lesser than 0.05. As F value was found significant for hematological parameters, fishers least significant difference test was used and results of post hoc mean comparison indicated that experimental groups (aerobic dance group and cardio fitness group) had significant difference with control group in erythrocytes, hemoglobin concentration, platelets and hematocrit and insignificant difference was found between aerobic dance group & cardio fitness group in all the cases. Thus, it may be concluded that in general, both the aerobic training programs had adequate effects on all the hematological parameters except leukocytes.

**Keywords :** aerobic dance, cardio fitness, hematological variables, rating perceived exertion scale **Conference Title :** ICASST 2017 : International Conference on Air Sports Science and Technology **Conference Location :** Zurich, Switzerland **Conference Dates :** January 13-14, 2017