

Research Paper :

Aerobic training approaches on alteration in blood lipid profiles in adolescent male

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ABSTRACT

The modern living style attributed various changes in physiological mechanism in the human body of which the major concern is coronary heart disease. Measures to reduce the incidence of CHD were mainly focused to elderly aged group and are well documented. The present research was intended to examine the effects of aerobic training on blood lipids profiles of 14-16 year old male adolescents. The total 12 weeks aerobics working indicated variable effects in increasing the HDL-C concentration and decreasing TC and TG levels which are discussed in the present paper.

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The mortality due to coronary heart disease (CHD) has been steadily increasing in many parts of the world and research relating to this has undertaken extensively in this century (Brownell, *et al.*, 1982; Huttunen, *et al.*, 1979; Xiao-Rong *et al.*, 1997). Estimates of lipid profile have been used as one of the markers for cardiovascular risks. The high density lipoprotein cholesterol (HDL-C) has an antiatherogenic effects and lipoprotein lipase (LPL) is the enzyme responsible for increasing HDL-C level (Miller and Miller, 1975). LPL catabolise triglyceride rich lipoproteins to free fatty acid and protein, which has the effect of increasing HDL-C production by the liver (Krauss *et al.*, 1979; Peltonen *et al.*, 1981; Haskell, 1984)

Physical activity is one of the important tools in management of favourable blood lipid changes. When exercise is accompanied by a body mass, total cholesterol (TC) and low density lipoprotein cholesterol (LDL-C) concentration may get reduced. There is a large mass of research that advocated the benefits of aerobic exercise which influence the blood lipid profiles by modifying the activities of intravascular enzymes and transfer of proteins (Berg *et al.*, 1994, Crouse, *et al.*, 1995; Durstine and Haskell, 1994). The aerobic training approach has made dent impact on transient changes after one set of exercise. This included concerning decrease in TC, LDL-C and TG, elevation in HDL-C in both the HDL2 and HDL3

sub-fractions (Gordon *et al.*, 1994; Kantor *et al.*, 1987; Kuusi *et al.*, 1984).

The lack of physical activities has been suspected to be associated with an increased incidence of CHD. It is essential to assess the effect of aerobic training *de facto* physiological changes in blood lipid characteristics. The present investigation therefore, entails about the effects of aerobic training approach on alterations of lipid profiles in adolescent males and thus to assist in avoiding the risks of cardiovascular diseases.

METHODOLOGY

The untrained healthy adolescent male were screened and thus considered for the study from Kendriya Vidyalaya, Puri, Orissa, India. All the selected volunteers consented were considered healthy, if they were not presently taking any medication. A thorough orientation of the experimental procedure *vis-à-vis* exercise schedule and laboratory testing were explained to them. Total 30 subjects of 14 -16 yrs age participated in a voluntary programme of 12 weeks of aerobic training which included jogging and running. Experimental design was statistically worked out in which thirty subjects were randomly divided into one experimental and the other normal group consisting of 15 each subjects. Jogging and running were prescribed as a means of aerobic training