

EFFECT OF PHYSICAL EXERCISE ON LIPIDS IN WOMEN

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ABSTRACT

In this period of urbanisation it is well known fact that sedentary lifestyle leads to a poor cardiovascular health .To investigate the effect of physical exercise on lipids, a moderate activity program including walking, jogging, weight training and flexibility exercises was prepared for women aging 30-39 years of age. Blood samples were collected from 10 women volunteers with higher LDL before prescribing and starting the training schedule for six months and also after completing the training schedule after six months. The investigation of lipids LDL, VLDL, TG, TC and HDL was done from the blood samples. Descriptive statistics T-Test was used to compare the mean .The level of significance was at $p < 0.05$ and the calculations were done with SPSS 17 software. The present study shows that regular physical exercises play a significant role on controlling cholesterol level in women.

KEY WORDS –Lipids, Descriptive statistics, Cholesterol.

INRODUCTION

LIPIDS profile or lipid panel is a panel of blood tests that serves as an initial broad medical screening tool for abnormalities in lipids, such as cholesterol and triglycerides. The lipid profile typically included:

Low density lipoprotein (LDL)

High density lipoprotein (HDL)

Triglycerides

Total cholesterol

There are number of factors that influence the cholesterol and lipid profile of an individual such as age, gender, genetic makeup, environment, diet, smoking, alcoholism, lifestyle and menopausal status in women. Endurance trained athletes have much higher HDL-C values compared to sedentary population (Haskell,1984). Cross sectional studies confirm that active women have higher HDL-C levels than their sedentary counterparts. Apparently, the duration and frequency of aerobic exercise may be more important in altering HDL-C than the intensity of the exercise. However, because of exogenous hormone use, contraceptive use, alcohol consumption, and age, the specific exercise recommendations for increasing HDL-C have yet to be determined (Taylor and ward,1993).

METHODOLOGY

SUBJECTS-10 women volunteers for they were taken from Gwalior, M.P who had history of higher LDL. Individuals with history of previous surgery hypertension, asthma, diabetes, musculoskeletal disorders excluded. Fitness certificates from registered practitioners were obtained from volunteers before starting up the exercise schedule.

ADMINISTRATION OF TEST-The blood samples from these volunteers were taken after twelve hours of fasting initially as controlled and then after six months practicing the one hour

training program of moderate intensity or measuring lipid profile. Height, weight and blood pressure were also being measured.

TRAINING PROTOCOL-The exercise program was designed to moderate intensity including aerobic and resistance training activities. The heart rate of 50%-75% of heart rate of maximum reserve for the duration of 40 min. ,5 days/week were maintained.

FINDINGS AND RESULTS:

Significant difference was found with mean and S.D before exercise and after exercise of LDL – 175.1_30.5 & 172.0 & 32.3 , HDL – 35.7_3.7 & 36.8_4.0 ,VLDL- 23_4.5 & 19.5_4.1, TC- 175.1_30.5 & 172.0_32.3,Triglycerides- 113.6_23.7 &103.9 & 24 respectively shown in table 1

Table 1.

Variables	Before exercise Value Mean_ SD	After exercise Values Mean _SD
TOTAL CHOLESTEROL	175.1_30.5	172.0±32.3
LDL CHOLESTEROL	123.2 ±28.3	114.7±27.0
HDL CHOLESTEROL	35.7±3.7	37.5±3.9
VLDL CHOLESTEROL	23±4.5	19.5±4.1
TRIGLYCERIDES	113.6±10.5	103.9±24

*p-value-0.05[level of significance]

The volunteers completed the exercise protocol for a period of 24 weeks/6 months to participate in the study. The group was 30-39 years. Table shows the significant changes ($p < 0.05$) in lipid parameters before and after moderate intensity exercise . The heart rate maximum is also responsible for the minimum duration it has to be maintained for the desired results and metabolic activity for maximum oxygen consumption. Studies comparing aerobic and resistance exercise have observed a significant changes in VLDL and HDL only with aerobic exercise observed by Taylor , P.A & Ward, A (1993). Although standard management of abnormal blood lipids id drug therapy and diet, seems prudent to incorporate aerobic exercise as an important component of a healthy lifestyle. In certain individual, drug therapy may be decreased in dosage or perhaps discontinued in the patient who is “exercise trained,” especially if there is associated weight loss (Trejo -Gutierrez JF Fletcher G). However other studies also shows remarkable change in lipid profile performing high intensity exercises.

CONCLUSION:

There was no significant difference was found between age groups but there was significant change found between before and after moderate intensity exercise program was introduced for six months 5 days/week. Moderate intensity exercise alone is sufficient in reducing the lipids and blood pressure.

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