

## CHAPTER IV

### RESULT

The study group comprised of 72 sedentary volunteers. However, only 62 healthy volunteers were completely continued throughout this experiment (26 men and 36 women). Dropping out from this study due to someone's illness during this program.

The male and female subjects had a mean  $\pm$  SD (range) age of  $35.96 \pm 7.25$  and  $30.72 \pm 8.34$  yr., a height of  $168.77 \pm 5.07$  and  $154.25 \pm 24.54$  cm., a body weight of  $67.12 \pm 8.55$  and  $50.64 \pm 6.33$  kg., a body mass index of  $23.27 \pm 2.93$  and  $19.69 \pm 2.27$  and peak oxygen uptake of  $32.30 \pm 6.79$  and  $24.19 \pm 4.14$  ml/ kg /min , heart rate rest of  $77.19 \pm 10.02$  and  $76.69 \pm 7.87$  beats /min , maximum heart rate of  $184.38 \pm 6.97$  and  $189.36 \pm 7.48$  beats /min , blood pressure of  $115.46 \pm 12.76 / 73.85 \pm 11.34$  and  $104.28 \pm 7.52 / 68.28 \pm 7.36$  mmHg , respectively. (Table4.1) (Appendix A )

Table 4.2 illustrates the changes in blood lipid profiles of 62 subjects following various time of pre , immediately post exercise and 2 hr. post exercise of all total cholesterol ( $214.19 \pm 43.79$  mg/dL,  $220.93 \pm 51.10$  mg/dL and  $208.53 \pm 4.77$  mg/dL, respectively ) , triglyceride ( $116.96 \pm 114.59$  mg/dL,  $123.93 \pm 110.91$  mg/dL and  $126.31 \pm 100.56$  mg/dL , respectively ) , high density lipoprotein (  $59.42 \pm 13.18$  mg/dL ,  $61.40 \pm 15.94$  mg/dL and  $57.16 \pm 13.88$  mg/dL, respectively ) , low density lipoprotein ( $131.38 \pm 36.90$  ,  $134.74 \pm 41.03$  and  $126.10 \pm 39.08$ , respectively ) , Low density lipoprotein by precipitation method in this study (  $105.48 \pm 37.55$  mg/dL,  $112.64 \pm 40.48$  mg/dL and  $105.13 \pm 35.38$  mg/dL , respectively ) Furthermore, we calculated the percent of recovery of LDL precipitation from low density lipoprotein comparing to calculated from the formula following various mode of pre, immediately post and 2 hr. post exercise which were 80.28%, 83.59% and 83.37 % , respectively.

In addition, their occupations almost were the clerks and students. Moreover, all subjects were exercised less than two days per week or rarely doing physical activity. These sedentary behaviors can be linked to health weakness, obesity, diabetes and heart disease.

We found that the value of baseline lipoprotein diene conjugation , immediately post exercise and 2 hour post exercise were  $6.93 \pm 2.43 \mu\text{mol/L}$  ,  $8.42 \pm 4.27 \mu\text{mol/L}$  and  $8.08 \pm 3.03 \mu\text{mol/L}$ . Although, there were no significant different value of lipoprotein diene conjugation among three values, we could see the change due to exercise and during recovery period.

There were no significant exercise-induced increase in the concentration of lipoprotein diene conjugation (LDL-DC) when comparing between pre and immediately post exercise , pre and 2 hour post exercise , and immediately post exercise and 2 hour post exercise . According to test for normality and Kruskal Wallis test which p values = 0.154. However, P- values < 0.05 were considered as significant ( Appendix D ).

Moreover, we divided subjects into two groups ie, male and female. We illustrate the concentration of lipoprotein diene conjugation (LDL-DC) following various time of pre, immediately post exercise , and 2 hour post exercise. The concentration of lipoprotein diene conjugation (LDL-DC ) of male group was  $6.44 \pm 1.92$  ,  $9.11 \pm 4.90$  and  $8.22 \pm 3.01 \mu\text{mol/L}$ . In addition , the concentration of lipoprotein diene conjugation (LDL-DC ) of female group was  $7.30 \pm 2.72$  ,  $7.94 \pm 3.80$  and  $7.78 \pm 3.12 \mu\text{mol/L}$  . Both the value of LDL- DC of male and female groups were not significant different. (p value > 0.05). (Table 4.3) (Appendix B)

There was no significant different of LDL- DC baseline data in both male and female. Nevertheless, the magnitude of changes in observed LDL-DC in male was higher than in female during the time of studies.

Table 4.1 The characteristics data of the subjects ( n=62 )

	Male ,n= 26	Female ,n = 36
Age (yr)	35.96± 7.25	30.72± 7.34
Weight (kg )	67.12± 8.55	50.64 ± 6.33
Height (cm)	168.77 ± 5.07	154.25± 24.54
BMI	23.27±2.93	19.69±2.27
VO <sub>2</sub> peak ml/kg/min	32.30±6.79	24.19±4.14
HR rest (bpm)	76.69±7.87	77.19±10.02
Blood pressure (mmHg )	104.28±7.52/68.28±7.36	115.46±12.76/ 73.85±11.34

Table 4.2 Blood lipid profile of all subjects

	Pre exercise	immediately post exercise	2 hr.post exercise
Chol (mg/dl )	214.19±43.79	220.93±51.10	208.53±4.77
TG (mg/dl )	116.96±114.59	123.93±110.91	126.31±100.56
HDL (mg/dl)	59.42±13.18	61.40±15.94	57.16±13.88
LDL* (mg/dl )	131.38±36.9	134.74±41.03	126.10±39.08
LDL precipitation** (mg/dl )	105.48±36.9	112.64±40.48	105.13±35.38

Data are expressed as mean ± SD

\* The LDL data were obtained by using formular

$$\text{LDL cholesterol} = \text{total cholesterol} - \text{HDL} - \text{Triglyceride}$$

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\*\* The LDL data obtained in this study by precipitation method.

Table 4.3 LDL-DC value pre and post exercise

The LDL-DC ( $\mu\text{mol/L}$ )	Pre-exercise.	immediately post-exercise.	2 hr. post- exercise.
The LDL-DC in female	7.30 $\pm$ 2.72	7.94 $\pm$ 3.80	7.98 $\pm$ 3.12
The LDL-DC in male	6.44 $\pm$ 1.92	9.11 $\pm$ 4.90	8.22 $\pm$ 3.01
The LDL-DC in male and female ( $\mu\text{mol/L}$ )	6.93 $\pm$ 2.43	8.42 $\pm$ 4.27	8.08 $\pm$ 3.03

Data are expressed as mean  $\pm$  SD

NS = No significant difference

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