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APPENDICES

APPENDIX A

TABLE A I Physical characteristrics of subjects

Female item	Age	Weight (Kg.)	High (cm.)	BMI	VO_{2peak} (mL/kg./min)
1	30	51	166	19	22.70
2	25	49	154	20	31.90
3	28	48	165	19	23.70
4	23	46	162	17	21.70
5	23	52	160	20	20.80
6	25	50	153	21	27.50
7	24	46	160	17	26.50
8	29	52	151	23	20.80
9	28	50	150	22	23.00
10	38	42	152	18	21.00
11	47	59	162	22	23.00
12	46	54	160	21	23.00
13	32	45	153	19	24.30
14	34	47	152	20	29.00
15	23	56	153	24	24.40
16	45	55	156	18	16.80
17	29	50	156	20	21.90
18	34	44	155	18	29..6
19	45	51	157	20	27.50
20	32	42	161	16	30.20
21	30	56	169	19	20.50
22	28	46	156	18	24.00
23	30	55	163	20	28.00
24	29	42	157	17	29.50
25	31	45	161	17	26.00

Female item	Age	Weight (Kg.)	High (cm.)	BMI	VO_{2peak} (mL/kg./min)
26	25	48	163	18	30.10
27	43	65	159	19	19.70
28	28	50	156	20	27.30
29	24	72	161	27	16.40
30	23	44	156	18	25.60
31	26	54	165	19	13.80
32	41	53	14	24	27.40
33	27	48	153	20	29.00
34	30	58	168	20	23.60
35	19	50	158	20	22.70
36	32	48	156	19	23.20
MEAN *Female*	*30.72*	*50.64*	*154.25*	*19.69*	*24.19*
SD *Female*	*7.34*	*6.33*	*24.54*	*2.27*	*4.14*

Male item	Age	Weight (Kg.)	High (cm.)	BMI	VO_{2peak} (mL/kg./min)
37	36	70	176	22	33.50
38	37	63	162	24	39.10
39	30	58	165	21	29.60
40	37	55	163	21	32..3
41	30	69	165	25	33.10
42	30	67	176	22	30.30
43	23	60	176	19	22.70
44	47	82	169	28	24.60
45	46	72	167	25	20.10
46	36	68	167	24	35.00

Male item	Age	Weight (Kg.)	High (cm.)	BMI	VO_{2peak} (mL/kg./min)
47	41	72	163	27	18.50
48	40	77	173	25	29.70
49	39	61	161	23	36.30
50	47	67	167	24	34.00
51	32	78	173	26	31.50
52	32	69	173	23	25.90
53	43	80	169	28	27.30
54	37	58	163	21	44.70
55	39	73	161	28	29.90
56	45	70	170	24	35.90
57	24	46	164	17	40.70
58	25	73	175	24	36.70
59	24	56	174	18	34.30
60	33	63	171	21	34.20
61	40	63	171	21	45.90
62	42	75	174	24	34.00
MEAN *Male*	*35.96*	*67.12*	*168.77*	*23.27*	*32.30*
SD *Male*	*7.25*	*8.55*	*5.07*	*2.93*	*6.79*

TABLE A I Physical characteristrics of subjects
(Continue)

Male	HR rest	HR max	BP systolic	BP diastolic
1	79	184	110	70
2	66	183	120	90
3	76	190	120	70
4	68	183	122	80
5	84	190	100	70
6	100	190	110	70
7	88	197	110	70
8	72	173	150	110
9	64	174	120	80
10	80	184	110	70
11	96	178	100	70
12	94	180	130	80
13	77	185	100	70
14	69	179	120	70
15	72	188	110	70
16	80	188	120	80
17	66	177	120	80
18	78	183	100	70
19	80	181	100	70
20	76	175	130	90
21	64	196	120	60
22	72	195	120	60
23	72	196	90	50
24	64	187	120	70

Male	HR rest	HR max	BP systolic	BP diastolic
25	87	180	130	80
26	83	178	120	70
MEAN	77.19	184.38	115.46	73.85
SD	10.02	6.97	12.76	11.34

Female	HR rest	HR max	BP systolic	BP diastolic
1	80	190	100	70
2	82	200	110	70
3	80	192	100	70
4	80	197	100	60
5	72	197	100	90
6	74	195	110	60
7	80	196	110	60
8	78	192	110	80
9	75	192	110	70
10	80	182	110	70
11	79	173	100	70
12	68	174	110	60
13	88	188	100	68
14	80	186	110	70
15	80	197	100	70
16	84	175	90	60
17	60	191	100	60
18	81	186	100	60
19	71	175	90	70
20	83	188	100	60
21	68	190	90	60
22	89	192	94	70

Female	HR rest	HR max	BP systolic	BP diastolic
23	88	190	120	70
24	68	191	100	60
25	88	189	110	70
26	80	195	100	70
27	68	177	120	80
28	80	192	110	70
29	80	196	110	80
30	82	197	100	70
31	60	194	110	70
32	60	179	100	60
33	72	193	110	70
34	77	190	100	70
35	66	200	110	60
36	80	186	110	80
MEAN	76.69	189.36	104.28	68.28
SD	7.87	7.48	7.52	7.36

APPENDIX B

TABLE B I The level of LDL- DC 26 male and 36 female subjects

Female -LDL-DC		micromole per litre		
No.	Age (yr)	Pre-exercise	immediately Post-exercise	2hr. Post- exercise
1	30	6.44	5.86	6.85
2	25	5.42	5.39	6.37
3	28	4.92	9.02	6.81
4	23	11.49	11.39	9.19
5	23	10.03	5.36	10.98
6	25	5.97	4.1	8.44
7	24	12	10.92	9.19
8	29	11.49	12.81	10.24
9	28	4.1	4.14	3.76
10	38	6.81	6.31	7.19
11	47	10.24	11.05	6.37
12	46	4.68	6.98	7.05
13	32	8.27	11.86	6.34
14	34	4.88	5.39	7.05
15	23	5.66	4.85	11.02
16	45	7.29	12.41	10.58
17	29	5.8	4.51	5.22
18	34	9.36	8.78	6.2
19	45	5.66	6.03	7.15
20	32	4.64	4.51	4.51
21	30	3.66	4.14	3.97
22	28	8.95	9.22	15.49
23	30	4.41	4.98	4.47
24	29	9.29	9.36	11.76

Female -LDL-DC		micromole per litre		
No.	Age(yr)	Pre-exercise	immediately Post-exercise	2hr. Post- exercise
25	31	10.17	9.59	6.03
26	25	10.31	9.12	13.29
27	43	4.85	5.97	5.42
28	28	5.25	24.14	4.95
29	24	7.46	7.59	6.03
30	23	8.27	6.44	4.03
31	26	4.95	10.37	10.4
32	41	5.42	5.8	15.22
33	27	15.08	9.15	9.73
34	30	7.9	6.24	6.37
35	32	6.51	6.37	6.92
36	19	5.24	5.73	12.78
MEAN	30.72	7.30	7.94	7.98
SD	7.34	2.72	3.80	3.12

Male LDL-DC		micromole/L		
No.	Age (yr)	Pre-exercise	immediately Post-exercise	2hr.Post-exercise
1	36	4.37	5.63	5.53
2	37	8.2	11.19	6.47
3	30	5.97	6.54	8.85
4	37	6.88	14.58	10.51
5	30	10.64	6.85	6.37
6	30	8.34	15.22	14
7	23	4.85	12.47	4.98
8	47	5.08	8.47	13.05
9	46	5.22	10.92	12.37
10	36	4.24	4.81	5.39
11	41	5.08	5.36	6.85
12	40	6.1	24.41	6.88
13	39	10.61	4.47	12.37
14	47	6.27	8.54	8
15	32	7.32	7.53	6.75
16	32	4.31	5.32	6.24
17	43	5.02	5.66	15.86
18	37	8	11.36	8.41
19	39	5.63	5.69	5.36
20	45	4.71	5.83	7.29
21	24	7.53	5.86	7.15
22	25	7.02	17.19	5.9
23	24	4.31	6.14	8.58
24	33	5.53	2.95	4.68
25	40	10.03	13.8	7.73

Male LDL-DC		micromole/L		
No.	Age (yr)	Pre-exercise	immediately Post-exercise	2hr.Post-exercise
26	42	6.2	10.03	8.03
MEAN	**35.96**	**6.44**	**9.11**	**8.22**
SD	**7.25**	**1.92**	**4.90**	**3.01**

TABLE B II The level of LDL-DC of all subject

Subject	Pre-exercise	immediately Post-exercise	2hr.Post-exercise
1	6.44	5.86	6.85
2	5.42	5.39	6.37
3	4.92	9.02	6.81
4	11.49	11.39	9.19
5	10.03	5.36	10.98
6	4.37	5.63	5.53
7	5.97	4.10	8.44
8	12.00	10.92	9.19
9	11.49	12.81	10.24

Subject	Pre-exercise	immediately Post-exercise	2hr.Post-exercise
10	4.10	4.14	3.76
11	6.81	6.31	7.19
12	10.24	11.05	6.37
13	4.68	6.98	7.05
14	8.20	11.19	6.47
15	5.97	6.54	8.85
16	6.88	14.58	10.51
17	10.64	6.85	6.37
18	8.27	11.86	6.34
19	8.34	15.22	14.00
20	4.88	5.39	7.05
21	5.66	4.85	11.02
22	4.85	12.47	4.98
23	5.08	8.47	13.05

Subject	Pre-exercise	immediately Post-exercise	2hr.Post-exercise
24	7.29	12.41	10.58
25	5.22	10.92	12.37
26	4.24	4.81	5.39
27	5.08	5.36	6.85
28	5.80	4.51	5.22
29	6.10	24.41	6.88
30	10.61	4.47	12.37
31	6.27	8.54	8.00
32	9.36	8.78	6.20
33	5.66	6.03	7.15
34	4.64	4.51	4.51
35	3.66	4.14	3.97
36	7.32	7.53	6.75
37	4.31	5.32	6.24

Subject	Pre-exercise	immediately Post-exercise	2hr.Post-exercise
38	5.02	5.32	15.86
39	8.00	11.36	8.41
40	5.63	5.69	5.36
41	8.95	9.22	15.49
42	4.41	4.98	4.47
43	4.71	5.83	7.29
44	9.29	9.36	11.76
45	10.17	9.59	6.03
46	7.53	5.86	7.15
47	10.31	9.12	13.29
48	4.85	5.97	5.42
49	7.02	17.19	5.90
50	4.31	6.14	8.58
51	5.25	24.14	4.95

Subject	Pre-exercise	immediately Post-exercise	2hr.Post-exercise
52	5.53	2.95	4.68
53	7.46	7.59	6.03
54	10.03	13.80	7.73
55	8.27	6.44	4.03
56	4.95	10.37	10.41
57	5.42	5.80	15.22
58	15.08	9.15	9.73
59	7.90	6.24	6.37
60	6.51	6.37	6.92
61	4.44	5.73	12.78
62	6.20	10.03	8.03
Mean± SD	*6.93±2.43*	*8.42±4.27*	*8.08±3.03*

APPENDIX C

Quality control for assay of low density lipoprotein diene conjugation concentration

The assay of low density lipoprotein diene conjugation had been done by manual method.The standard low density lipoprotein(Control precenorm L) solution is used as the test agent. Intra –assay variation was done by 18 repeated assay on the same day. Inter – assay variation was done by performing the three repeated assay each day for 6 days. Mean, standard deviation and % CV were calculated and shown below.

Intra- assay variation	Inter- assay variation
14.8	14.8
14.8	14.8
14.8	14.8
14.8	14.8
14.8	14.8
14.8	16.6
16.6	16.6
16.6	16.6
16.6	16.6
16.6	16.6
16.6	16.6
16.6	16.6
15.1	15.1
15.1	15.1
15.1	15.1
15.2	15.2

15.2		15.2
15.2		15.2
15.51	$\bar{X}$	15.61
0.8020	SD.	0.8197
5.17	%CV*	5.25

$$* \%CV = \frac{SDx\ 100}{\bar{X}}$$

APPENDIX D

Tests of Normality

Group	Kolmogorov-Smirnov[a]			Shapiro- Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Female : pre- ex	.160	36	.021	.912	36	.010
Male : pre- ex	.151	26	.132	.893	26	.012
Female : immediate post-ex	.181	36	.004	.793	36	.010**
Male : immediate post-ex	.178	26	.034	.868	26	.010**
Female : 2 hour post-ex	.211	36	.000	.916	36	.014
Male : 2 hour post-ex	.186	26	.022	.870	26	.010**

[a] Lilliefors Significance Correction

**This is an upper bound of the true significance.

The null hypothesis for the data in this study were rejected. Therefore, the data in this study is not normal distribution. The Kruskal Wallis Test was applied to study for significant difference of this non parametric test.

Non- parametric Tests

Kruskal - Wallis Test

Group	N	Mean Rank
Female : pre- exercise	36	86.01
Male : pre- exercise	26	71.56
Female : immediately post-exercise	36	93.58
Male : immediately post-exercise	26	105.12
Female : 2 hour post-exercise	36	99.44
Male : 2 hour post-exercise	26	105.85
Total	186	

Test Statistics [a,b]

	Experimental Group
Chi- square	8.032
df	5
Asymp.Sig.	.154

[a.] Kruskal - Wallis Test

[b.] Grouping Variable : Group

BIOGRAPHY

Miss Siriluck Otakal was born on Jan 22,1971 at Udornthani, Thailand. She graduated the Bachelor degree in Physical Therapy from Mahidol University in 1993. At present, she is working at the Health Care Center, the Krung Thai Bank Public Company Limited.