

Supplemental Table 1. *Ceramide metabolism gene expression*

SPT Women

	SPT Absolute Change			
	PRE	POST	POST+3D	POST+2W
control	1.767 ± 0.109	1.734 ± 0.156		
low/moderate	1.726 ± 0.142	1.708 ± 0.110	1.536 ± 0.067	2.226 ± 0.278*
low/vigorous	1.633 ± 0.147	1.712 ± 0.136	1.681 ± 0.141	1.747 ± 0.110
high/vigorous	1.402 ± 0.062	1.559 ± 0.088	1.495 ± 0.050	1.553 ± 0.081

* $P < 0.05$ vs POST + 3D

SPT Men

	SPT Absolute Change			
	PRE	POST	POST+3D	POST+2W
control	1.791 ± 0.142	2.42 ± 0.277*		
low/moderate	1.943 ± 0.214	1.889 ± 0.228	2.112 ± 0.288	2.102 ± 0.215
low/vigorous	1.820 ± 0.126	1.817 ± 0.174	1.767 ± 0.190	2.002 ± 0.213
high/vigorous	2.448 ± 0.575	2.072 ± 0.298	2.427 ± 0.421	2.005 ± 0.326

* $P < 0.05$ vs PRE

AC Women

	AC Absolute Change			
	PRE	POST	POST+3D	POST+2W
control	1.804 ± 0.154	1.616 ± 0.119		
low/moderate	1.662 ± 0.102	1.661 ± 0.107	1.433 ± 0.051	1.981 ± 0.172*
low/vigorous	1.376 ± 0.065	1.651 ± 0.075	1.639 ± 0.178	1.623 ± 0.146
high/vigorous	1.455 ± 0.080	1.622 ± 0.127	1.610 ± 0.110	1.566 ± 0.108

* $P < 0.05$ vs POST + 3D

AC Men

	AC Absolute Change			
	PRE	POST	POST+3D	POST+2W
control	1.841 ± 0.204	2.144 ± 0.344		
low/moderate	1.722 ± 0.149	1.841 ± 0.197	1.937 ± 0.253	1.841 ± 0.166
low/vigorous	1.88 ± 0.189	1.928 ± 0.266	1.796 ± 0.196	2.05 ± 0.213
high/vigorous	1.925 ± 0.320	2.028 ± 0.270	2.325 ± 0.376	2.02 ± 0.311

SPT % change

control	low/moderate	low/vigorous	high/vigorous
-0.493 ± 7.689	4.132 ± 10.33	7.04 ± 5.828	12.23 ± 6.705

SPT % change
grouped exercisers

control	exercise
-0.493 ± 7.68	7.8 ± 4.427

SPT % change

control	low/moderate	low/vigorous	high/vigorous
37.66 ± 16.54	-2.648 ± 4.587	2.338 ± 11.38	0.086 ± 14.16

 $P = 0.12$ SPT % change
grouped exercisers

control	exercise
37.66 ± 16.54	-0.067 ± 6.188*

* $P < 0.05$ vs control

AC % change

control	low/moderate	low/vigorous	high/vigorous
-7.353 ± 6.136	3.599 ± 9.682	22.38 ± 7.983	11.31 ± 5.255

 $P = 0.052$ AC % change
grouped exercisers

control	exercise
-7.353 ± 6.136	12.43 ± 4.604*

* $P < 0.05$ vs control

AC % change

control	low/moderate	low/vigorous	high/vigorous
17.44 ± 13.08	7.388 ± 7.074	3.741 ± 10.64	12.05 ± 10.60

AC % change
grouped exercisers

control	exercise
17.44 ± 13.08	7.898 ± 5.405

Supplemental Table 2. *Fatty acid metabolism gene expression*

SCD-1 Women

	SCD-1 Absolute Change			
	PRE	POST	POST+3D	POST+2W
control	3.075 ± 0.498	4.667 ± 2.295		
low/moderate	2.389 ± 0.494	2.332 ± 0.409	2.06 ± 0.579	2.357 ± 0.332
low/vigorous	2.839 ± 0.7572	3.074 ± 1.052	3.034 ± 0.685	2.76 ± 0.914
high/vigorous	2.19 ± 0.336	2.355 ± 0.535	1.98 ± 0.340	2.414 ± 0.382

SCD-1 % change			
control	low/moderate	low/vigorous	high/vigorous
46.09 ± 62.63	10.56 ± 17.91	8.54 ± 19.41	27.09 ± 30.74

SCD-1 % change grouped exercisers	
control	exercise
46.09 ± 62.63	15.4 ± 13.13

SCD-1 Men

	SCD-1 Absolute Change			
	PRE	POST	POST+3D	POST+2W
control	2.258 ± 0.465	3.58 ± 1.246		
low/moderate	2.505 ± 0.545	2.142 ± 0.437	2.619 ± 0.460	2.573 ± 0.421
low/vigorous	2.312 ± 0.434	2.554 ± 0.668	1.746 ± 0.229	2.763 ± 0.654
high/vigorous	2.941 ± 0.778	2.47 ± 0.514	3.072 ± 0.904	2.325 ± 0.437

SCD-1 % change			
control	low/moderate	low/vigorous	high/vigorous
66.94 ± 49.12	-7.019 ± 10.46	10.31 ± 14.54	37.81 ± 43.41

SCD-1 % change grouped exercisers	
control	exercise
66.94 ± 49.12	14.66 ± 16.45

CPT-1β Women

	CPT-1β Absolute Change			
	PRE	POST	POST+3D	POST+2W
control	1.423 ± 0.129	1.388 ± 0.173		
low/moderate	1.396 ± 0.114	1.359 ± 0.121	1.234 ± 0.072	1.449 ± 0.136
low/vigorous	1.26 ± 0.090	1.584 ± 0.198	1.359 ± 0.149	1.398 ± 0.108
high/vigorous	1.266 ± 0.086	1.489 ± 0.161	1.316 ± 0.090	1.334 ± 0.099

CPT-1β % change			
control	low/moderate	low/vigorous	high/vigorous
-3.4 ± 4.351	-1.08 ± 6.476	22.67 ± 7.872	18.15 ± 12.09
<i>P</i> = 0.06			

CPT-1β % change grouped exercisers	
control	exercise
-3.4 ± 4.351	13.25 ± 5.434*
* <i>P</i> < 0.05 vs control	

CPT-1β Men

	CPT-1β Absolute Change			
	PRE	POST	POST+3D	POST+2W
control	1.416 ± 0.112	1.63 ± 0.175		
low/moderate	1.488 ± 0.131	1.416 ± 0.170	1.47 ± 0.155	1.427 ± 0.195
low/vigorous	1.495 ± 0.105	1.653 ± 0.332	1.365 ± 0.862	1.804 ± 0.218
high/vigorous	1.445 ± 0.114	1.855 ± 0.369	1.659 ± 0.193	1.43 ± 0.108

CPT-1β % change			
control	low/moderate	low/vigorous	high/vigorous
14.14 ± 8.563	-2.877 ± 9.255	9.742 ± 17.98	29.73 ± 22.77

CPT-1β % change grouped exercisers	
control	exercise
14.14 ± 8.563	12.9 ± 10.40

Supplemental Table 3. Triglyceride metabolism gene expression

DGAT-1 Women

	DGAT-1 Absolute Change			
	PRE	POST	POST+3D	POST+2W
control	1.605 ± 0.159	1.358 ± 0.065 *		
low/moderate	1.465 ± 0.104	1.405 ± 0.076	1.358 ± 0.057	1.508 ± 0.113
low/vigorous	1.443 ± 0.131	1.55 ± 0.164	1.442 ± 0.139	1.38 ± 0.086
high/vigorous	1.424 ± 0.116	1.539 ± 0.125	1.462 ± 0.092	1.316 ± 0.065

* $P < 0.05$ vs PRE

DGAT-1 % change			
control	low/moderate	low/vigorous	high/vigorous
-11.78 ± 4.403	-2.498 ± 4.666	6.582 ± 2.790*	9.268 ± 6.518*

* $P < 0.05$ vs control

DGAT -1 % change grouped exercisers	
control	exercise
-11.78 ± 4.403	4.45 ± 2.886*

* $P < 0.05$ vs control

DGAT-1 Men

	DGAT-1 Absolute Change			
	PRE	POST	POST+3D	POST+2W
control	1.696 ± 0.137	2.179 ± 0.308#		
low/moderate	1.695 ± 0.132	1.689 ± 0.118	1.772 ± 0.171	1.539 ± 0.141
low/vigorous	1.811 ± 0.167	1.838 ± 0.252	1.718 ± 0.183	1.608 ± 0.098
high/vigorous	1.774 ± 0.298	1.848 ± 0.207	1.861 ± 0.216	1.505 ± 0.119

$P = 0.09$ vs PRE

DGAT-1 % change			
control	low/moderate	low/vigorous	high/vigorous
27.66 ± 14.5	1.124 ± 5.774	1.134 ± 7.919	12.79 ± 10.80

DGAT -1 % change grouped exercisers	
control	exercise
27.66 ± 14.5	5.328 ± 4.925 #

$P = 0.06$ vs control

HSL Women

	HSL Absolute Change			
	PRE	POST	POST+3D	POST+2W
control	1.596 ± 0.092	1.557 ± 0.076		
low/moderate	1.739 ± 0.187	1.591 ± 0.105	1.594 ± 0.093	1.462 ± 0.056
low/vigorous	1.795 ± 0.158	1.72 ± 0.147	1.631 ± 0.230	1.586 ± 0.245
high/vigorous	1.555 ± 0.106	1.789 ± 0.174	1.539 ± 0.089	1.519 ± 0.151

HSL % change			
control	low/moderate	low/vigorous	high/vigorous
1.259 ± 8.368	-4.668 ± 6.076	-1.973 ± 7.546	16.43 ± 10.55

HSL % change grouped exercisers	
control	exercise
1.259 ± 8.368	3.262 ± 4.925

HSL Men

	HSL Absolute Change			
	PRE	POST	POST+3D	POST+2W
control	1.956 ± 0.160	2.164 ± 0.195#		
low/moderate	1.852 ± 0.228	1.861 ± 0.277	2.207 ± 0.423	1.762 ± 0.281
low/vigorous	2.106 ± 0.287	1.903 ± 0.155	2.07 ± 0.263	1.797 ± 0.183
high/vigorous	1.909 ± 0.219	2.119 ± 0.294	2.408 ± 0.406	2.392 ± 0.801

$P = 0.08$ vs PRE

HSL % change			
control	low/moderate	low/vigorous	high/vigorous
10.84 ± 5.187	-0.098 ± 7.602	-3.538 ± 8.103	10.49 ± 10.49

HSL % change grouped exercisers	
control	exercise
10.84 ± 5.187	2.286 ± 5.024

Supplemental Table 4. *Lipid metabolism transcription factor gene expression*

SREBP-1c Women

	SREBP-1c Absolute Change			
	PRE	POST	POST+3D	POST+2W
control	2.224 ± 0.293	2.052 ± 0.195		
low/moderate	1.828 ± 0.203	1.885 ± 0.197	1.773 ± 0.121	2.159 ± 0.358
low/vigorous	1.998 ± 0.250	2.131 ± 0.268	1.927 ± 0.326	1.884 ± 0.225
high/vigorous	1.885 ± 0.179	2.101 ± 0.341	1.796 ± 0.109	2.179 ± 0.264

SREBP-1c % change			
control	low/moderate	low/vigorous	high/vigorous
-2.797 ± 6.29	6.528 ± 9.857	7.927 ± 9.382	15.84 ± 22.02

SREBP -1c % change grouped exercisers	
control	exercise
-2.797 ± 6.29	10.1 ± 8.359

SREBP-1c Men

	SREBP-1c Absolute Change			
	PRE	POST	POST+3D	POST+2W
control	2.028 ± 0.215	4.31 ± 1.580		
low/moderate	2.3 ± 0.226	2.459 ± 0.245	2.277 ± 0.269	2.484 ± 0.411
low/vigorous	2.494 ± 0.362	2.506 ± 0.678	1.992 ± 0.192	2.279 ± 0.242
high/vigorous	2.018 ± 0.266	2.13 ± 0.257	1.949 ± 0.267	2.171 ± 0.304

SREBP-1c % change			
control	low/moderate	low/vigorous	high/vigorous
127.9 ± 93.57	9.286 ± 10.33	-7.337 ± 8.951	8.049 ± 7.22
<i>P</i> = 0.13			

SREBP -1c % change grouped exercisers	
control	exercise
127.9 ± 93.57	3.332 ± 5.17 *
* <i>P</i> < 0.05 vs control	

PGC-1α Women

	PGC-1α Absolute Change			
	PRE	POST	POST+3D	POST+2W
control	2.002 ± 0.183	1.662 ± 0.127 *		
low/moderate	1.981 ± 0.249	1.668 ± 0.131	1.573 ± 0.093	1.706 ± 0.196
low/vigorous	1.555 ± 0.113	1.957 ± 0.332	1.958 ± 0.296	1.704 ± 0.216
high/vigorous	1.616 ± 0.168	1.942 ± 0.183 *	1.661 ± 0.108	1.629 ± 0.155

PGC-1α % change			
control	low/moderate	low/vigorous	high/vigorous
-15.21 ± 3.968	-4.391 ± 13.32	26.32 ± 17.69	24.46 ± 11.54
<i>P</i> = 0.06			

PGC-1α % change grouped exercisers	
control	exercise
-15.21 ± 3.968	14.39 ± 8.571 *
* <i>P</i> < 0.05 vs control	

* *P* < 0.05 vs PRE

PGC-1α Men

	PGC-1α Absolute Change			
	PRE	POST	POST+3D	POST+2W
control	1.778 ± 0.284	2.673 ± 0.467		
low/moderate	1.806 ± 0.300	2.009 ± 0.378	2.03 ± 0.319	1.82 ± 0.281
low/vigorous	1.97 ± 0.435	1.833 ± 0.275	2.391 ± 0.531	2.069 ± 0.352
high/vigorous	1.62 ± 0.246	2.273 ± 0.378	2.386 ± 0.429	2.346 ± 0.869

PGC-1α % change			
control	low/moderate	low/vigorous	high/vigorous
74.04 ± 42.65	10.55 ± 6.825	4.045 ± 13.86	47.97 ± 22.11

PGC-1α % change grouped exercisers	
control	exercise
74.04 ± 42.65	20.39 ± 9.208#
# <i>P</i> = 0.06 vs control	

Supplemental Table 5. *Lipoprotein lipase gene expression*

LPL Women

	LPL Absolute Change			
	PRE	POST	POST+3D	POST+2W
control	4.046 ± 0.903	3.351 ± 0.631		
low/moderate	3.227 ± 0.603	3.764 ± 0.620	3.115 ± 0.446	4.032 ± 0.785
low/vigorous	2.779 ± 0.307	4.087 ± 0.733	3.296 ± 0.411	3.394 ± 0.495
high/vigorous	2.789 ± 0.431	3.765 ± 0.615	2.966 ± 0.441	2.314 ± 0.333*

* $P < 0.05$ vs POST

LPL Men

	LPL Absolute Change			
	PRE	POST	POST+3D	POST+2W
control	1.531 ± 0.218	1.898 ± 0.321		
low/moderate	1.243 ± 0.055	1.485 ± 0.108	1.383 ± 0.090	1.42 ± 0.151
low/vigorous	1.345 ± 0.083	1.32 ± 0.066	1.446 ± 0.132	1.484 ± 0.066
high/vigorous	1.772 ± 0.363	1.862 ± 0.284	2.027 ± 0.469	1.572 ± 0.233

LPL % change

control	low/moderate	low/vigorous	high/vigorous
-6.11 ± 13.74	28.40 ± 19.74	42.08 ± 14.24	42.06 ± 20.07

LPL % change
grouped exercisers

control	exercise
-6.11 ± 13.74	37.51 ± 10.22*

* $P < 0.05$ vs control

LPL % change

control	low/moderate	low/vigorous	high/vigorous
28.86 ± 21.3	19.91 ± 8.131	-0.4932 ± 5.011	12.85 ± 11.97

LPL % change
grouped exercisers

control	exercise
28.86 ± 21.3	10.84 ± 5.346