

Table S1

A

		Brain				Muscle				Respective Student t test P value	
		Ctrl		Spa-/-		Ctrl		Spa-/-		Brain Ctrl vs Spa-/-	Muscle Ctrl vs Spa-/-
		Mean	SEM	Mean	SEM	Mean	SEM	Mean	SEM		
SAFA	C16:0	7.218	0.794	6.832	1.031	1.314	0.098	0.857*	0.089	0.782	0.026
	C18:0	7.689	0.472	7.720	0.297	0.627	0.095	0.604	0.017	0.958	0.829
	C20:0					0.024	0.007	0.025	0.002		0.901
	C24:0	0.971	0.027	0.992	0.076					0.810	
MUFA	C16:1ω9	0.929	0.127	0.940	0.042	0.029	0.002	0.016 [#]	0.005	0.941	0.068
	C16:1ω7	0.472	0.080	0.430	0.063	0.038	0.003	0.021 [#]	0.006	0.700	0.053
	C18:1ω9c	10.805	0.968	10.913	0.552	0.531	0.055	0.419	0.015	0.927	0.122
	C18:1ω9t	0.406	0.130	0.670	0.024	0.108	0.022	0.106	0.001	0.117	0.943
	C20:1ω9					0.143	0.033	0.161	0.013		0.632
	C24:1ω9	0.572	0.074	0.595	0.062	0.179	0.036	0.170	0.025	0.822	0.841
PUFA	C16:2ω4	0.581	0.038	0.939	0.205	0.158	0.002	0.048*	0.017	0.161	0.003
	C16:3	29.687	2.609	36.370	2.235	0.304	0.017	0.149*	0.024	0.124	0.006
	C18:2ω6	1.606	0.150	1.861	0.042	0.522	0.095	0.515	0.016	0.176	0.941
	C18:3ω6	0.407	0.056	0.396	0.019	0.023	0.005	0.019	0.003	0.863	0.553
	C18:3ω3	1.338	0.305	2.010	0.143	0.036	0.004	0.030	0.002	0.116	0.316
	C20:2ω6	0.197	0.063	0.214	0.021	0.026	0.006	0.021	0.001	0.802	0.405
	C20:3ω6	0.140	0.021	0.154	0.026	0.012	0.006	0.007	0.000	0.708	0.446
	C20:4ω6	2.555	0.184	2.606	0.160	0.121	0.021	0.110	0.001	0.843	0.611
	C20:5ω3	1.977	0.441	1.652	0.142	0.215	0.036	0.200	0.001	0.522	0.700
	C22:4ω6	0.618	0.096	0.640	0.021	0.043	0.012	0.028	0.003	0.833	0.261
	C22:5ω3	0.463	0.014	0.406	0.021	0.089	0.018	0.078	0.006	0.087	0.610
	C22:6ω3	10.669	0.502	10.730	0.430	1.475	0.335	1.455	0.019	0.932	0.955
Saturated		15.878	1.163	15.544	0.939	1.965	0.198	1.486	0.095	0.834	0.095
Mono-unsaturated		13.183	1.138	13.547	0.641	1.028	0.147	0.893	0.044	0.794	0.428
Poly-unsaturated		50.237	3.080	57.977	3.201	3.025	0.540	2.660	0.077	0.156	0.540
Total		79.298	4.802	87.069	4.085	6.017	0.877	5.039	0.204	0.285	0.338

B

		Brain				Muscle				Student test	
		Ctrl		Spa-/-		Ctrl		Spa-/-		Brain Ctrl vs Spa-/-	Muscle Ctrl vs Spa-/-
		Mean	SEM	Mean	SEM	Mean	SEM	Mean	SEM		
Cholesterol		56.844	4.746	60.343	1.579	2.303	0.227	1.725 [#]	0.080	0.523	0.074
Cho-C16		nd	nd	nd	nd	0.080	0.021	0.043	0.004		0.159
Cho-C18		nd	nd	nd	nd	0.186	0.017	0.104*	0.003		0.008
Total Est Chol		nd	nd	nd	nd	0.266	0.013	0.147*	0.005		0.001
C49-TG (14/16/16)		nd	nd	nd	nd	0.546	0.116	0.146*	0.049		0.034
C51-TG (16/16/16)		0.368	0.028	0.446	0.207	3.193	0.574	1.012*	0.297	0.659	0.028
C53-TG (16/16/18)		1.756	0.118	1.607	0.823	9.452	1.869	3.667 [#]	0.993	0.867	0.052
C55-TG (16/18/18)		2.948	0.154	2.935	1.551	12.727	2.722	5.541 [#]	1.405	0.994	0.079
C57-TG (18/18/18)		2.106	0.111	2.294	1.202	7.780	1.787	3.441	0.812	0.884	0.092
C59-TG (18/18/20)		0.374	0.029	0.389	0.246	2.387	0.526	1.072	0.263	0.957	0.089
Total TG		7.553	0.435	7.522	4.012	36.085	7.461	14.878 [#]	3.816	0.994	0.065
Total NL		64.397	4.316	67.865	2.573	38.654	7.683	16.751 [#]	3.890	0.528	0.064

C

		Brain				Muscle				Student test	
		Ctrl		Spa-/-		Ctrl		Spa-/-		Brain Ctrl vs Spa-/-	Muscle Ctrl vs Spa-/-
		Mean	SEM	Mean	SEM	Mean	SEM	Mean	SEM		
Cer	Cer d18:1/16_0	3.311	0.235	2.267	0.484	0.760	0.231	0.561	0.075	0.124	0.458
	Cer d18:1/18:0	10.487	0.978	7.529*	0.248	0.038	0.007	0.024	0.003	0.043	0.133
	Cer d18:1/20:0	0.993	0.081	1.010	0.044	0.038	0.012	0.023	0.001	0.864	0.287
	Cer d18:1/22:0	9.119	1.064	10.240	0.249	0.129	0.011	0.068*	0.008	0.363	0.011
	Cer d18:1/24:0	20.896	2.185	20.810	1.073	0.663	0.096	0.418	0.040	0.973	0.078
	Cer d18:1/24:1	14.634	1.913	15.031	0.490	0.548	0.087	0.399	0.037	0.850	0.190
	Cer d18:1/26:0	1.739	0.119	1.788	0.207	0.093	0.016	0.052 [#]	0.003	0.848	0.075
	Cer d18:1/26:1	2.084	0.121	2.092	0.292	0.113	0.019	0.061 [#]	0.003	0.981	0.052
Total Cer		63.263	6.132	60.767	1.473	2.382	0.373	1.607	0.154	0.712	0.128
PC	PC28:0	0.467	0.094	0.539	0.054	0.073	0.012	0.061	0.002	0.544	0.394
	PC30:0	28.927	4.114	33.825	2.977	2.396	0.271	2.534	0.222	0.389	0.715
	PC30:1	2.606	0.216	3.359 [#]	0.228	0.380	0.119	0.415	0.029	0.074	0.792
	PC32:0	797.964	103.598	1072.857	113.992	33.948	7.400	37.786	4.404	0.149	0.679
	PC32:1	138.487	34.894	194.801	35.386	5.851	1.340	5.806	0.545	0.320	0.977
	PC32:2	7.125	1.231	11.886	1.948	0.622	0.146	0.738	0.081	0.108	0.526
	PC34:0	302.382	60.189	443.347	78.403	10.780	2.033	12.720	1.025	0.227	0.442
	PC34:1	2257.603	515.734	3125.793	551.501	78.857	16.692	89.072	7.074	0.314	0.603
	PC34:2	170.364	44.014	280.255	52.777	38.984	8.709	54.449	2.589	0.185	0.164
	PC34:3	14.520	3.575	23.919	3.616	2.234	0.489	3.118	0.183	0.138	0.166
	PC36:1	680.319	135.087	1026.926	196.113	20.288	4.378	28.666	1.790	0.219	0.151
	PC36:2	174.682	41.550	289.778	62.017	12.306	2.711	15.994	1.018	0.198	0.272
	PC36:3	43.693	12.593	69.569	13.079	10.931	2.644	15.630	0.753	0.227	0.163
	PC36:4	42.139	10.646	58.045	6.525	10.396	2.419	15.049	1.082	0.272	0.154
	PC38:2	68.034	13.911	109.263	23.167	2.109	0.542	3.387	0.227	0.202	0.095
	PC38:3	21.483	5.544	32.935	5.504	2.736	0.698	4.177	0.243	0.213	0.123
	PC38:4	39.890	9.457	51.568	5.263	3.712	0.898	4.609	0.143	0.341	0.380
	PC38:5	174.018	42.580	233.986	36.994	18.262	4.014	24.053	2.104	0.348	0.270
	PC38:6	980.405	235.988	1371.361	240.577	73.954	15.794	103.834	13.526	0.311	0.224
	PC40:3	28.435	6.529	48.519	10.650	0.364	0.084	0.673 [#]	0.089	0.183	0.065
PC40:6	407.301	72.280	529.827	56.646	18.207	3.774	25.875	2.459	0.253	0.164	
Total PC		6380.842	1347.258	9012.356	1493.600	347.392	71.925	448.648	38.115	0.261	0.281
PE	PE32:0	2.478	0.319	3.448 [#]	0.252	0.093	0.012	0.086	0.008	0.075	0.619
	PE32:1	1.694	0.203	2.379	0.230	0.061	0.009	0.052	0.003	0.089	0.381

PE	PE34:0	26.756	2.250	36.017*	2.406	1.163	0.116	1.048	0.063	0.048	0.434
	PE34:1	5.980	0.857	8.543 [#]	0.656	0.401	0.058	0.414	0.015	0.076	0.842
	PE36:1	46.716	1.317	60.546*	2.776	3.082	0.540	3.078	0.145	0.011	0.996
	PE36:2	14.488	1.305	20.884*	1.546	1.404	0.224	1.507	0.046	0.034	0.674
	PE36:3	5.476	0.933	8.059	0.755	0.733	0.116	0.813	0.022	0.098	0.536
	PE36:4	3.021	0.593	4.035	0.424	0.439	0.079	0.487	0.022	0.236	0.591
	PE38:2	5.191	0.682	6.296	0.594	0.532	0.119	0.519	0.007	0.289	0.918
	PE38:3	12.114	1.667	15.046	0.828	1.706	0.294	1.938	0.088	0.190	0.490
	PE38:4	15.473	2.319	19.647	1.823	2.432	0.458	2.613	0.090	0.230	0.718
	PE38:5	56.499	8.732	72.128	7.426	3.854	0.802	4.013	0.432	0.244	0.869
	PE38:6	99.722	18.803	134.666	17.142	6.595	1.390	6.998	0.674	0.242	0.807
	PE40:3	4.404	0.222	5.734*	0.380	0.411	0.090	0.450	0.024	0.039	0.703
	PE40:5	402.640	64.147	525.824	41.413	28.268	6.446	37.517	2.730	0.182	0.257
	PE40:6	213.375	28.221	278.489	23.704	18.616	4.787	23.464	1.686	0.152	0.393
PE40:7	20.946	2.951	28.802 [#]	1.122	6.515	2.091	7.885	0.086	0.068	0.548	
Total PE	936.973	134.729	1230.544	101.329	76.304	17.399	92.883	5.510	0.157	0.415	
SM	SM d18:1/14:0	13.848	2.932	18.324	0.369	5.705	1.548	5.758	0.991	0.204	0.978
	SM d18:1/16:0	400.951	23.185	413.808	13.821	61.229	5.998	36.565*	6.127	0.659	0.045
	SM d18:1/16:1	0.000	0.000	0.000	0.000	0.700	0.153	0.801	0.146		0.658
	SM d18:1/18:0	388.146	32.231	455.013	61.430	1.545	0.236	0.920	0.185	0.390	0.105
	SM d18:1/18:1	0.000	0.000	0.000	0.000	0.437	0.120	0.393	0.082		0.780
	SM d18:1/20:0	67.837	8.131	82.354	7.445	4.459	0.554	3.426	0.446	0.258	0.220
	SM d18:1/20:1	2.283	2.283	5.070	2.549	0.859	0.299	0.766	0.151	0.461	0.796
	SM d18:1/22:0	277.781	45.499	309.104	21.076	8.839	1.709	5.738	0.790	0.566	0.175
	SM d18:1/22:1	76.723	14.225	96.609	8.134	13.783	3.693	13.800	2.403	0.292	0.997
	SM d18:1/24:0	436.328	78.428	517.728	38.429	12.273	2.883	6.629	0.703	0.404	0.130
	SM d18:1/24:1	908.975	139.843	1146.070	69.147	41.404	8.637	27.745	3.081	0.203	0.211
	Total SM	2572.872	340.273	3044.081	176.047	151.232	20.175	102.541	14.892	0.286	0.124
PI	PI34:1	8.480	0.978	9.152	0.299	0.892	0.133	0.692	0.044	0.547	0.226
	PI34:2	5.085	2.585	7.175	0.800	0.818	0.112	0.717	0.026	0.483	0.430
	PI36:1	13.379	2.246	15.342	1.004	2.895	0.213	3.346	0.434	0.470	0.403
	PI36:2	20.269	4.272	24.730	1.343	6.517	0.690	7.215	0.739	0.376	0.528
	PI36:3	21.572	1.151	24.759	1.870	4.173	0.539	3.924	0.457	0.220	0.743
	PI38:1	1.455	1.455	0.000	0.000	0.000	0.000	0.000	0.000	0.374	
	PI38:2	16.968	0.410	20.483*	0.712	2.387	0.311	1.949	0.207	0.013	0.306
	PI38:3	168.473	15.334	152.943	1.708	32.138	4.457	27.760	2.626	0.371	0.445
	PI38:4	421.773	13.295	398.324	14.058	84.220	10.807	79.319	1.633	0.292	0.677
	PI38:5	277.248	8.893	255.669	15.066	56.148	6.137	49.441	3.433	0.285	0.394
	PI40:3	0.386	0.386	0.000	0.000	0.000	0.000	0.000	0.000	0.374	
	PI40:4	21.565	2.154	21.561	0.542	5.897	0.998	5.540	0.079	0.999	0.739
	PI40:5	104.222	9.297	105.964	6.880	28.680	5.823	29.190	1.204	0.888	0.936
	PI40:6	217.425	24.378	209.865	19.240	50.320	10.304	49.004	2.788	0.820	0.908
Total PI	1298.301	68.772	1245.966	52.456	275.087	39.650	258.097	11.896	0.578	0.703	