

Supplementary Information

Supplementary Table 1. Serum fatty acid profiles of F1 generation animals on the HCO, SOY and DHA diets

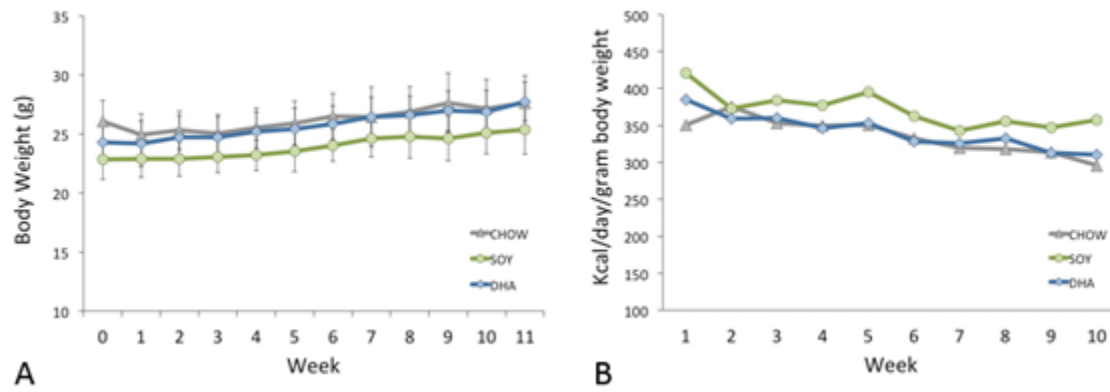
Fatty acid	HCO (N=4)	SOY (N=5)	DHA (N=5)	P
Saturated Fats				
Tetradecanoic (myristic) acid, 14:0	1.346±0.142	0.688±0.492	1.177±0.675	0.359
Hexadecanoic (palmitic) acid, 16:0	20.269±1.370	20.765±2.361	24.036±1.029	0.016
Octadecanoic (stearic) acid, 18:0	7.381±0.370	9.863±0.969	7.049±0.596	0.013
Monounsaturated Fats				
Hexadecenoic (palmitoleic) acid, 16:1ω7	8.308±0.782	2.936±1.383	6.412±1.023	0.005
Octadecenoic (vaccenic) acid, 18:1ω7	4.900±0.470	1.827±0.496	0.998±0.149	0.003
Octadecenoic (oleic) acid, 18:1ω9	22.766±1.252	14.935±3.228	15.493±1.067	0.009
Polyunsaturated Fats				
Octadecatrienoic (alpha-linolenic) acid, 18:3ω3	0.004±0.010	0.159±0.050	0	0.004
Eicosapentaenoic (trimnodonic) acid, 20:5ω3	0.078±0.012	0.229±0.057	5.558±0.638	0.003
Docosapentaenoic (clupanodonic) acid, 22:5ω3	0.089±0.022	0.226±0.162	0.538±0.061	0.008
Docosahexaenoic acid, 22:6ω3	2.865±0.301	9.215±2.264	24.949±2.791	0.003
Octadecadienoic (linoleic) acid, 18:2ω6	8.380±0.451	17.464±0.968	5.950±0.346	0.003
Octadecatrienoic (gamma-linolenic) acid, 18:3ω6	0.221±0.140	0.199±0.167	0	0.009
Eicosatrienoic (dihomo-gamma-linolenic) acid, 20:3ω6	1.611±0.094	0.899±0.353	0.132±0.081	0.003
Eicosatetraenoic (arachidonic) acid, 20:4ω6	8.795±0.586	19.502±5.444	6.409±0.317	0.003
Eicosatrienoic (mead) acid, 20:3ω9	9.370±1.002	0.123±0.044	0.018±0.039	0.004
Totals				
Total ω3	3.036±0.287	9.829±2.357	31.045±2.338	0.003
Total ω6	19.048±0.859	38.276±5.402	12.491±0.315	0.003
Total ω9	32.545±1.451	15.131±3.183	15.688±1.067	0.010
Total ω-7	5.134±0.533	1.827±0.496	1.032±0.192	0.003
Total saturated FA	30.856±1.004	31.849±2.921	33.333±1.452	0.113
Total monounsaturated FA	36.617±1.436	19.772±5.039	23.114±1.119	0.008
Total polyunsaturated FA	32.527±0.902	48.380±7.698	43.553±2.336	0.008
Ratios				
Triene:Tetraene ratio	1.072±0.170	0.006±0.002	0.003±0.006	0.006
ω6/ω3 ratio	6.305±0.440	3.981±0.484	0.404±0.033	0.003

All values represent percent ± SD.

Supplementary Table 2. Serum fatty acid profiles of aged animals following acute dietary treatment with the CHOW, SOY or DHA diet

Fatty acid	CHOW (N=5)	SOY (N=5)	DHA (N=5)	P
Saturated Fats				
Tetradecanoic (myristic) acid, 14:0	0.568±0.084	0.510±0.057	1.162±0.396	0.007
Hexadecanoic (palmitic) acid, 16:0	34.939±0.496	34.105±3.256	33.488±9.150	0.357
Octadecanoic (stearic) acid, 18:0	17.912±1.544	19.879±1.331	22.826±4.556	0.054
Monounsaturated Fats				
Hexadecenoic (palmitoleic) acid, 16:1ω7	2.091±0.356	2.342±0.256	3.247±0.863	0.090
Octadecenoic (vaccenic) acid, 18:1ω7	1.218±0.105	1.558±0.482	1.311±0.240	0.326
Octadecenoic (oleic) acid, 18:1ω9	9.976±1.422	11.301±1.436	11.617±2.483	0.275
Polyunsaturated Fats				
Octadecatrienoic (alpha-linolenic) acid, 18:3ω3	0.552±0.181	0.217±0.032	0.030±0.006	0.002
Eicosapentaenoic (trimnodonic) acid, 20:5ω3	1.112±0.125	0.363±0.069	4.865±0.792	0.002
Docosapentaenoic (clupanodonic) acid, 22:5ω3	0.147±0.018	0.060±0.017	0.159±0.036	0.008
Docosahexaenoic acid, 22:6ω3	2.253±0.261	2.759±0.556	7.282±1.245	0.005
Octadecadienoic (linoleic) acid, 18:2ω6	22.114±1.098	13.774±1.334	7.778±1.289	0.002
Octadecatrienoic (gamma-linolenic) acid, 18:3ω6	0.107±0.020	0.160±0.094	0.006±0.014	0.016
Eicosatrienoic (dihomo-gamma-linolenic) acid, 20:3ω6	0.572±0.032	0.813±0.171	0.299±0.055	0.002
Eicosatetraenoic (arachidonic) acid, 20:4ω6	5.693±0.773	10.998±1.547	4.793±0.315	0.003
Eicosatrienoic (mead) acid, 20:3ω9	0.047±0.012	0.217±0.051	0.130±0.037	0.003
Totals				
Total omega-3 (ω-3)	3.952±0.472	3.399±0.635	12.335±1.594	0.005
Total omega-6 (ω-6)	28.626±1.043	25.868±2.801	12.914±1.408	0.005
Total omega-9 (ω-9)	10.302±1.375	11.919±1.673	12.228±2.824	0.228
Total omega-7 (ω-7)	1.259±0.097	1.617±0.470	1.392±0.309	0.230
Total saturated fatty acids	53.742±1.828	52.767±4.370	57.871±4.702	0.395
Total monounsaturated fatty acids	13.605±1.739	15.661±2.187	16.750±3.823	0.395
Total polyunsaturated fatty acids	32.653±1.297	29.572±3.344	25.378±2.413	0.016
Ratios				
Triene:Tetraene ratio	0.009±0.003	0.020±0.002	0.027±0.007	0.005
Omega-6 (ω-6)/omega-3 (ω-3) ratio	7.318±0.830	7.749±1.149	1.057±0.144	0.009

All values represent percent ± SD.



Supplementary Figure 1. Animal growth and diet consumption in acute dietary treatment. There was no difference in (A) body weights or (B) kcal consumed at any time point spanning the 11week study. All data represented as mean \pm SD.