

Supplementary Materials

Table S1. Mouse Diet Formulations ^a.

	NO EPA+DHA/ LOW SUCROSE	NO EPA+DHA/ HIGH SUCROSE	2% EPA+DHA/ LOW SUCROSE	2% EPA+DHA/ HIGH SUCROSE
Ingredient	gm/kg	gm/kg	gm/kg	gm/kg
Casein	232.5	232.5	205	205
DL-Methionine	3	3	3	3
Corn Starch	450	100	450	100
Sucrose	100	500	100	500
Maltodextrin10	100	50	100	50
Cellulose	50	50	50	50
Soybean Oil	90	90	41	41
MEG-3, 30% Powder	0	0	81	81
Mineral mix	35	35	35	35
Vitamin mix	10	10	10	10
Choline	2	2	2	2
Protein (gm%)	19	19	19	19
Carbohydrate (gm%)	61	61	61	61
Fat (gm%)	8	8	8	8
Protein (kcal%)	19	19	19	19
Carbohydrate (kcal%)	61	61	61	61
Fat (kcal%)	19	19	19	19

^a Diets prepared by Research Diets, Inc.

Table S2. Fatty acid composition of mouse diets ^a.

Dietary Fatty Acid	Diets							
	NO EPA+DHA/ LOW SUCROSE		NO EPA+DHA/ HIGH SUCROSE		2% EPA+DHA/ LOW SUCROSE		2% EPA+DHA/ HIGH SUCROSE	
	<i>Mean %</i>	<i>SD</i>	<i>Mean %</i>	<i>SD</i>	<i>Mean %</i>	<i>SD</i>	<i>Mean %</i>	<i>SD</i>
C14:0	0.3127	0.0056	0.3465	0.0183	4.0342	0.0655	4.0396	0.1155
C16:0	10.8571	0.0044	10.8156	0.0162	15.6643	0.0515	15.6578	0.1455
C16:1n7	0.1246	0.0102	0.1256	0.0121	4.7284	0.0682	4.7533	0.1353
C16:2n4	ND ^b		ND		0.6467	0.0136	0.6746	0.0129
C16:3n4	0.0585	0.0033	0.0580	0.0018	0.7979	0.0132	0.7923	0.0207
C18:0	3.7595	0.0075	3.7911	0.0128	3.7329	0.0262	3.8003	0.0131
C18:1n9	19.9944	0.0661	19.9874	0.0771	14.3479	0.0526	14.5019	0.1299
C18:1n7	1.4386	0.0437	1.4651	0.0507	2.1407	0.0437	2.1796	0.0354
C18:2n6	55.7595	0.0116	55.7239	0.0613	28.0789	0.4165	27.4273	0.8709
C18:3n6	ND		ND		0.1622	0.0088	0.1744	0.0152
C18:3n3	7.1302	0.0301	7.1640	0.0585	4.0564	0.0457	3.9617	0.0978
C18:4n3	ND		ND		2.1081	0.0256	2.1021	0.0458
C20:0	0.2380	0.0153	0.2492	0.0068	0.4335	0.0129	0.4489	0.0220
C20:1n9	0.1587	0.0057	0.1676	0.0039	0.8631	0.0403	0.9112	0.0393
C20:2n6	0.0424	0.0044	ND		0.1139	0.0040	0.1141	0.0067
C20:3n6	ND		ND		0.0954	0.0057	0.0990	0.0071
C20:4n6	ND		ND		0.4834	0.0083	0.4938	0.0109
C20:4n3	ND		ND		0.5428	0.0136	0.5548	0.0225
C20:5n3	ND		ND		9.2107	0.1225	9.3503	0.2936
C22:4n6	0.0989	0.0152	0.0988	0.0067	0.1218	0.0623	0.1128	0.0966
C22:5n6	ND		ND		0.1417	0.0131	0.1481	0.0094
C22:5n3	0.0740	0.0256	0.0602	0.0035	0.8908	0.0689	0.9321	0.1051
C22:6n3	ND		ND		6.6043	0.1001	6.7700	0.2156
Total n-3	7.2042	0.0501	7.2041	0.0238	23.4131	0.3142	23.6710	0.5725
Total n-6	55.8537	0.0765	55.7897	0.0145	29.1974	0.4603	28.5695	0.9279
n-3/n-6	0.1290	0.0011	0.1291	0.0004	0.8021	0.0231	0.8296	0.0470
n-6/n-3	7.7533	0.0642	7.7442	0.0254	1.2474	0.0364	1.2080	0.0685

^a Values are averages of triplicate analysis by gas chromatography reported as percentage of total fatty acids. ^b ND=Not detectable.

Table S3. TaqMan primer/probes used in qPCR.

Gene	Assay ID
Tnfa	Mm00443260_g1
Il1b	Mm00434228_m1
Il6	Mm00446190_m1
Nfkb1	Mm00476361_m1
Shank3	Mm00683065_m1
Shank1	Mm01206737_m1
Dlg4 (PSD 95)	Mm00492193_m1

Table S4. Cumulative food intake and body weight over time by diet and injection groups in mice receiving 2% EPA+DHA or No EPA+DHA diets and two injections of vehicle or chemotherapy (Study 1).

	Chemo				Vehicle			
	2% EPA+DHA		No EPA+DHA		2% EPA+DHA		No EPA+DHA	
Food Consumption								
4 days post-injection	97.8	(7.5)	102.6	(8.9)	100.9	(8.9)	103.7	(6.0)
7 days post-injection	96.6	(11)	104.0	(8.2)	98.2	(10)	106.9	(8.1)
14 days post-injection	102.9	(4.6)	109.5	(7.1)	103.1	(14)	108.5	(4.5)
Body Weight								
Experiment day 1	18.9	(0.91)	19.3	(1.3)	18.7	(1.2)	19.0	(1.2)
Experiment day 14	20.9	(1.5)	20.8	(1.5)	20.9	(1.7)	20.5	(2.4)
Experiment day 28	20.2	(1.3)	20.0	(1.4)	21.2	(2.0)	20.8	(1.3)
Data are shown as mean (SD), grams								

Table S5: Cumulative food intake and body weight over time in mice receiving various combinations of omega-3 and sucrose diets and two injections of chemotherapy (Study 2)

	Chemo								Vehicle							
	2%				No				No				2%			
	EPA+DHA		EPA+DHA		2% EPA+DHA		EPA+DHA		2% EPA+DHA		EPA+DHA		EPA+DHA		EPA+DHA	
	Low sucrose		Low sucrose		High sucrose		High sucrose		Low sucrose		Low sucrose		High sucrose		High sucrose	
Food Consumption	87.8	(4.8)	94.7	(4.5)	94.6	(11.3)	97.1	(5.9)	92.5	(10.5)	97.3	(6.6)	98.8	(5.6)	101.3	(7.2)
Body Weight																
Experiment day 1	19.1	(1.6)	19.7	(2.1)	20.4	(2.1)	19.8	(1.9)	20.1	(2.0)	19.0	(2.1)	20.5	(1.8)	20.1	(1.5)
Experiment day 7	20.1	(1.6)	20.7	(1.5)	21.8	(1.8)	21.0	(1.8)	20.6	(2.5)	20.3	(1.8)	21.9	(1.2)	20.5	(1.3)
Experiment day 21	19.3	(1.1)	20.0	(2.4)	21.2	(1.8)	20.4	(1.6)	21.8	(1.2)	20.5	(2.2)	22.5	(1.4)	21.3	(2.0)

Data are shown as mean (SD)

Table S6: Brain fatty acids in mice fed varying n-3 FA and sucrose enriched diets for 5 weeks while undergoing two chemotherapy or vehicle injections ^a

	Diet Groups ^b								
Brain Fatty Acid	NO EPA+DHA/ LOW SUCROSE		NO EPA+DHA/ HIGH SUCROSE		2% EPA+DHA/ LOW SUCROSE		2% EPA+DHA/ HIGH SUCROSE		
	Mean %	SD	Mean %	SD	Mean %	SD	Mean %	SD	<i>p</i> ^c
C14:0	0.1391	0.0136	0.1381	0.0118	0.1563	0.0158	0.1478	0.0090	<.0001
C16:0	20.1449	2.0744	19.9560	2.1619	20.8191	2.0066	19.9090	2.0481	0.30
C16:1n7	0.4200	0.0441	0.4207	0.0441	0.4986	0.0453	0.4819	0.0422	<.0001
C18:0	21.4593	1.1054	21.2381	1.1453	21.7732	1.1227	21.1665	1.2914	0.38
C18:1n7	17.3091	2.3497	17.5575	2.4748	17.3809	2.5730	18.5290	2.7236	0.14
C18:1n9	3.6183	0.5099	3.6769	0.5413	3.3624	0.5143	3.5515	0.4935	0.40
C18:2n6	0.7304	0.1188	0.6755	0.0928	0.5346	0.0962	0.4802	0.0939	<.0001
C18:3n6	0.0514	0.0106	0.0516	0.0125	0.0485	0.0097	0.0518	0.0137	0.49
C20:0	0.4806	0.2066	0.4974	0.2138	0.4062	0.1785	0.4907	0.2069	0.31
C20:1n9	2.1975	1.1401	2.2741	1.1738	1.7018	1.0857	2.2318	1.1599	0.25
C20:2n6	0.1842	0.0721	0.1783	0.0691	0.1112	0.0408	0.1187	0.0400	<.0001
C20:3n6	0.4556	0.0483	0.4633	0.0477	0.4436	0.0353	0.4639	0.0344	0.12
C20:4n6	8.9350	1.4886	9.0276	1.5694	7.9746	1.5138	7.6110	1.4950	0.02
C20:5n3	0.0772	0.0738	0.0638	0.0553	0.2836	0.0625	0.2732	0.0672	<.0001
C22:0	0.5722	0.2322	0.5889	0.2497	0.4810	0.2030	0.6015	0.2519	0.34
C22:4n6	2.4320	0.3046	2.5176	0.2846	1.9197	0.2835	1.9721	0.2291	<.0001
C22:5n3	0.1924	0.0695	0.2364	0.1287	0.2014	0.0945	0.1773	0.0843	<.0001
C22:5n6	0.1837	0.0878	0.1532	0.0727	0.4430	0.0901	0.4515	0.0704	0.52
C22:6n3	19.2151	0.9643	19.0578	0.6641	20.4779	0.8827	20.0303	0.8260	<.0001
C24:0	0.9148	0.4048	0.9426	0.4832	0.7514	0.3494	0.9930	0.4332	0.33
AA/DHA	0.4660	0.0819	0.4739	0.0824	0.3894	0.0773	0.3796	0.0713	<.0001

^a Values obtained by gas chromatography, reported as percentage of total fatty acids in brain, averaging across injection treatment groups (chemotherapy and vehicle)

^b n=23-25 per diet group

^c P-value obtained from overall ANOVA F-test