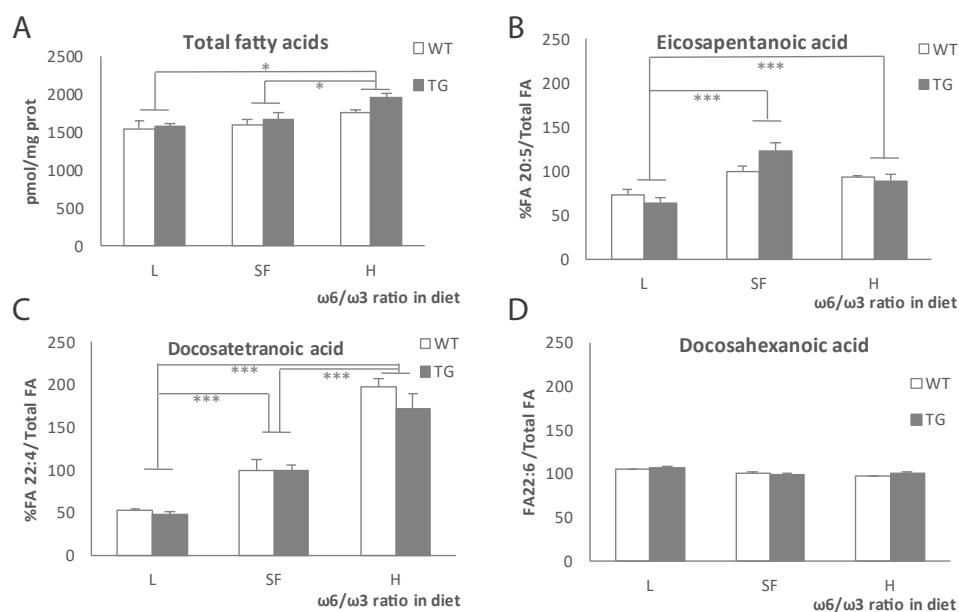


Supplementary Table S1. Total fat content of the three diets: L, H and SF. (n.d.= non-detectable, L= low ω -6/ ω -3 ratio, SF = standard food, H= high ω -6/ ω -3 ratio).

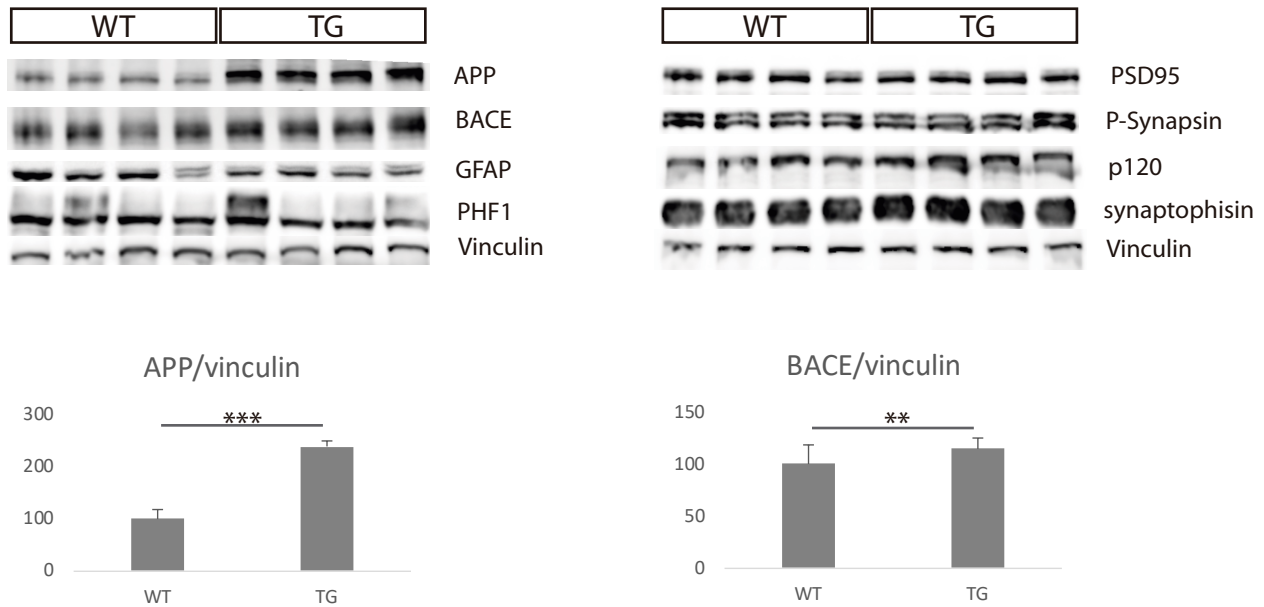
		L		SF		H	
Total fat contain		6.9g/100g		4.6g/100g		7.3g/100g	
		relative %	mg/100g	relative %	mg/100g	relative %	mg/100g
Myristic acid	C14:0	1.3	95	0.1	<10	0.1	<10
Myristoleic acid	C14:1	nd	nd	nd	nd	nd	nd
Pentadecylic acid	C15:0	0.2	<10	nd	nd	nd	nd
Palmitic acid	C16:0	8	552	11.4	495	5.1	356
Palmitoleic acid	C16:1	1.6	109	0.2	<10	0.1	<10
Margaric acid	C17:0	0.1	<10	nd	nd	0.1	<10
Stearic acid	C18:0	2.4	162	2.4	104	2.2	156
Oleic acid	C18:1	38.2	2582	46	1961	53.6	3685
Linoleic acid	C18:2	29.1	1952	34.2	1446	34.5	2356
Alpha-Linolenic acid	C18:3	2.9	193	2.8	116	1.2	80
Stearidonic acid	C18:4	0.4	26	nd	nd	nd	nd
Nonadecylic acid	C19:0	nd	nd	nd	nd	nd	nd
Arachidic acid	C20:0	0.4	24	0.3	12	0.4	26
Gadoleic acid	C20:1	2.7	180	0.6	25	0.3	23
Eicosadienoic acid	C20:2	0.7	47	0.1	<10	nd	nd
Eicosatrienoic acid	C20:3	0.5	32	0.1	<10	nd	nd
Arachidonic acid	C20:4	0.2	12	nd	nd	nd	nd
Eicosapentaenoic acid	C20:5	1.7	108	nd	nd	nd	nd
Heneicosylic acid	C21:0	nd	nd	nd	nd	nd	nd
Behenic acid	C22:0	0.2	15	0.5	23	0.3	18
Erucic acid	C22:1	0.4	26	nd	nd	nd	nd
Docosadienoic acid	C22:2	nd	nd	nd	nd	nd	nd
Docosatrienoic acid	C22:3	nd	nd	nd	nd	nd	nd
Docosatetraenoic acid	C22:4	nd	nd	nd	nd	nd	nd
Docosapentaenoic acid	C22:5	0.8	52	nd	nd	nd	nd
Docosahexaenoic acid	C22:6	2.8	177	nd	nd	0.2	14
Tricosylic acid	C23:0	nd	nd	0.1	<10	nd	nd
Lignoceric acid	C24:0	0.1	<10	0.3	11	0.1	<10
Nervonic acid	C24:1	0.3	23	nd	nd	0.1	<10

Antibody	Host	Reference
Phospho-Synapsin Serine 9	Rabbit	#2311 Cell Signaling
P120	Mouse	#610133 BD Transduction Lab
PSD95	Rabbit	#3450 Cell Signaling
Synaptophysin (SY38)	Rabbit	#10701 Progen
Beta amyloid, 1-16(6E10) monoclonal antibody	Mouse	#9331 Cell Signaling
GFAP	Rabbit	#Z0334Dako
BACE	Rabbit	#5606 Cell Signaling
PHF1	Mouse	Dr. Davies gift
GAPDH	Mouse	#47724 Santa Cruz Laboratories
Actin	Mouse	#A5441 Sigma-Aldrich
Vinculin	Mouse	#V9131 Sigma-Aldrich

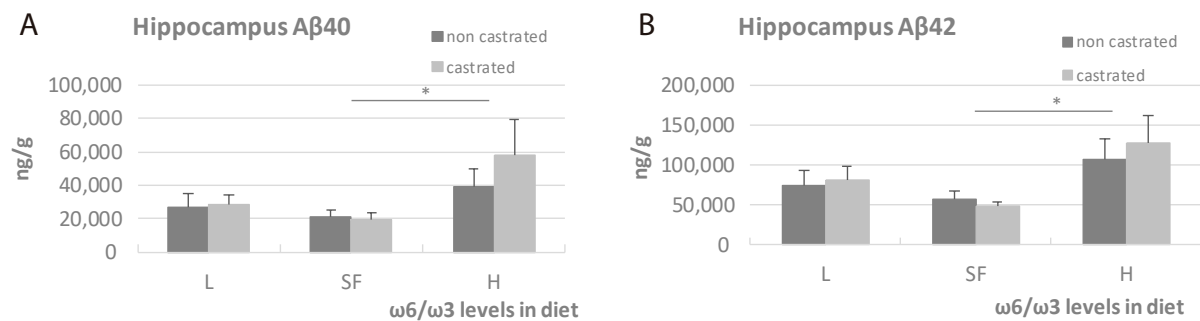
Supplementary Table S2. Primary and secondary antibodies used.



Supplementary Fig. S1. (A) Fatty acid (FA), (B) eicosapentaenoic acid (C20:5), (C) docosatetraenoic acid (C22:4) and (D) docosahexaenoic acid (C22:6) levels in the brains of transgenic (TG) and wild-type (WT) male mice after being fed with L, SF and H diets for 3 months. Results are shown as the medium \pm SEM of the percentage with respect to total FA and represented with respect to ω -6/ ω -3 ratio in the diet. *: $p < 0.05$; ***: $p < 0.001$. L=lower ω -6/ ω -3 ratio, H= higher ω -6/ ω -3 ratio, SF= standard food.



Supplementary Fig. S2. Synaptic and pathological markers in transgenic (TG) and wild-type (WT) mice. PSD95, phospho-synapsin, p120 and synaptophysin were checked as synaptic markers. APP, BACE, GFAP and PHF1 were checked as markers involved in the pathological process, A β accumulation and Tau phosphorylation. Results are shown as the medium \pm SEM as the percentage respect to WT. **: p<0.01, ***: p<0.001.



Supplementary Fig. S3. A β 1-40 (A) and A β 1-42 (B) levels in the hippocampus of transgenic male mice after being fed with L, SF and H diets for 3 months. The castrated group was operated on at two months-of-age, one month before the modified-diet was supplied. Data are represented with respect to ω -6/ ω -3 ratio in the diet. Results are shown as the medium \pm SEM. *: $p < 0.05$.