

1 **Supplementary Table 1.** Offspring organ and tissue weights at 4 and 8 weeks of age.

Experimental Group	Male				Female			
	High LA (18% Fat)	High LA (36% Fat)	Low LA (18% Fat)	Low LA (36% Fat)	High LA (18% Fat)	High LA (36% Fat)	Low LA (18% Fat)	Low LA (36% Fat)
4 Week Offspring								
Heart (g)	0.54 ± 0.03 ^a	0.48 ± 0.01 ^b	0.54 ± 0.03 ^a	0.41 ± 0.03 ^b	0.51 ± 0.03 ^a	0.44 ± 0.02 ^b	0.51 ± 0.03 ^a	0.41 ± 0.02 ^b
Lungs (g)	1.16 ± 0.04	0.98 ± 0.09	1.09 ± 0.07	1.04 ± 0.07	1.32 ± 0.15 ^a	1.01 ± 0.07 ^b	1.20 ± 0.12 ^a	0.90 ± 0.05 ^b
Kidney (g)	1.21 ± 0.07 ^a	1.03 ± 0.03 ^b	1.18 ± 0.04 ^a	0.86 ± 0.05 ^b	1.12 ± 0.05 ^a	0.89 ± 0.04 ^b	1.12 ± 0.05 ^a	0.81 ± 0.04 ^b
Liver (g)	5.68 ± 0.43 ^a	4.52 ± 0.22 ^b	5.43 ± 0.27 ^a	3.81 ± 0.25 ^b	4.74 ± 0.33 ^a	3.82 ± 0.20 ^b	4.77 ± 0.16 ^a	3.55 ± 0.22 ^b
Gonadal fat (g)*	0.55 ± 0.06	0.47 ± 0.04	0.60 ± 0.04	0.32 ± 0.04	0.59 ± 0.08	0.55 ± 0.07	0.79 ± 0.05	0.42 ± 0.05
Retroperitoneal fat (g)	0.66 ± 0.09 ^a	0.48 ± 0.05 ^b	0.56 ± 0.03 ^a	0.40 ± 0.05 ^b	0.41 ± 0.08 ^a	0.28 ± 0.03 ^b	0.42 ± 0.03 ^a	0.27 ± 0.03 ^b
8 Week Offspring								
Brain (g)	1.91 ± 0.05 ^a	1.69 ± 0.05 ^b	1.87 ± 0.02 ^a	1.72 ± 0.03 ^b	1.71 ± 0.05 ^a	1.63 ± 0.05 ^b	1.66 ± 0.04 ^a	1.51 ± 0.04 ^b
Heart (g)	1.17 ± 0.04 ^a	1.09 ± 0.05 ^b	1.23 ± 0.04 ^a	1.14 ± 0.03 ^b	0.83 ± 0.04	0.79 ± 0.03	0.82 ± 0.04	0.76 ± 0.03
Lungs (g)	2.09 ± 0.24	1.83 ± 0.14	2.11 ± 0.19	1.91 ± 0.16	1.15 ± 0.11	1.31 ± 0.06	1.27 ± 0.05	1.28 ± 0.08
Kidney (g)	2.83 ± 0.20 ^a	2.47 ± 0.08 ^b	2.88 ± 0.08 ^a	2.66 ± 0.12 ^b	1.89 ± 0.10	1.70 ± 0.07	1.78 ± 0.06	1.67 ± 0.06
Liver (g)	16.28 ± 0.46 ^a	14.85 ± 0.75 ^b	17.04 ± 0.79 ^a	15.19 ± 0.44 ^b	9.63 ± 0.61	9.06 ± 0.43	9.37 ± 0.35	8.70 ± 0.24
Gonadal fat (g)	4.43 ± 0.40 ^a	3.73 ± 0.31 ^b	4.62 ± 0.38 ^a	3.62 ± 0.32 ^b	2.95 ± 0.32	2.83 ± 0.11	3.47 ± 0.27	3.01 ± 0.46
Retroperitoneal fat (g)	4.11 ± 0.30	3.88 ± 0.41	4.55 ± 0.40	3.52 ± 0.31	1.89 ± 0.26	1.89 ± 0.32	2.01 ± 0.21	1.40 ± 0.05

2 All values are mean ± SEM. A two-way ANOVA was used to analyse results with maternal dietary fatty acid ratio and maternal dietary fat content as factors, all comparisons
 3 are made within sex groups. Different superscripts denote values which are significantly different ($P < 0.05$). * indicates a significant interaction effect of maternal dietary
 4 fatty acid ratio and maternal fat content on gonadal fat weight in male and female offspring ($P < 0.05$). n=6-9 per dietary group.



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