Supplememtal Table 1. Gene expression in liver and perigonadal WAT of WT and *Pnpla3*-KO mice.

			Liver					Perigonadal WAT				
Pathway	**Gene**	**Genotype**	**Chow**	**LFLS**	**LFHS**	**HFHS**	**p<0.05**	**Chow**	**LFLS**	**LFHS**	**HFHS**	**p<0.05**
Pnpla family	**Pnpla3**	**WT**	1.00±0.25	29.08±8.10^{d}	111.44±20.63^{d}	15.38±2.13	***g, d,***	1.00±0.20	1.36±0.12	1.85±0.39^{d}	0.87±0.23	***g, d,***
		KO	0.00±0.00^{g}	0.00±0.00^{g}	0.00±0.00^{g}	0.00±0.00^{g}	***gxd***	0.00±0.00^{g}	0.00±0.00^{g}	0.00±0.00^{g}	0.00±0.00^{g}	***gxd***
	Pnpla5	**WT**	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00		1.00±0.26	1.33±0.20	1.78±0.31	1.02±0.22	***g***
		KO	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00		1.25±0.39	2.87±0.46^{g}	3.12±0.47^{g}	1.99±0.29^{g}	
FA/TAG Synthesis	**Acaca**	**WT**	1.00±0.22	1.40±0.18	4.20±0.80^{d}	1.71±0.29	***d***	1.00±0.10	1.64±0.19^{d}	1.80±0.11^{d}	0.76±0.16	***d***
		KO	0.76±0.09	1.77±0.24	4.68±0.97^{d}	1.60±0.13		0.90±0.05	1.38±0.15^{d}	1.58±0.16^{d}	0.86±0.05	
	Fas	**WT**	1.00±0.23	2.66±0.28	7.13±1.05^{d}	2.74±0.61	***d***	1.00±0.04	2.04±0.33	2.36±0.28^{d}	1.30±0.33	***d***
		KO	1.36±.0.22	3.69±0.69	8.96±1.99^{d}	3.21±0.32		1.03±0.11	2.19±0.38^{d}	2.29±0.32^{d}	1.25±0.15	
G3P→LPA	**Gpat1**	**WT**	1.00±0.12	1.27±0.17	1.43±0.30	1.47±0.25	***d***	1.00±0.12	1.11±0.10	1.02±0.11	0.97±0.16	
		KO	0.83±0.12	1.22±0.17	2.03±0.42^{d}	1.32±0.14		1.24±0.15	1.03±0.08	1.14±0.12	0.88±0.06	
	Gpat3	**WT**	1.00±0.16	0.92±0.06	0.96±0.11	1.18±0.12	***d***	1.00±0.18	0.86±0.06	0.97±0.07	0.85±0.06	
		KO	1.00±0.08	0.88±0.08	1.13±0.15	1.28±0.09		1.01±0.14	0.90±0.06	0.82±0.04	1.03±0.08	
	Gpat4	**WT**	1.00±0.13	0.95±0.09	0.90±0.12	0.93±0.09		1.00±0.07	1.01±0.16	1.17±0.06	1.03±0.15	
		KO	0.96±0.10	0.88±0.11	1.00±0.09	0.87±0.05		1.15±0.14	1.21±0.13	1.02±0.10	0.91±0.07	
LPA→PA	**Agpat1**	**WT**	1.00±0.20	1.73±0.15^{d}	1.65±0.18^{d}	1.58±0.13	***d***	1.00±0.17	1.11±0.18	1.16±0.08	0.80±0.12	***d***
		KO	1.01±0.08	1.72±0.21^{d}	1.85±0.16^{d}	1.77±0.20^{d}		1.10±0.15	1.04±0.06	1.02±0.07	0.85±0.07	
	Agpat2	**WT**	1.00±0.04	1.00±0.10	1.29±0.10	1.61±0.13^{d}	***d***	1.00±0.06	1.18±0.14	1.37±0.19	1.09±0.21	
		KO	1.02±0.06	0.81±0.12	1.30±0.17	1.27±0.19		1.04±0.10	1.06±0.14	1.26±0.12	1.18±0.11	

	Agpat3	**WT**	1.00±0.20	1.11±0.15	1.20±0.06	1.55±0.14[d]	***d***	1.00±0.10	1.16±0.13	0.78±0.14	0.65±0.14	***d***
		KO	0.97±0.12	1.20±0.11	1.49±0.08[d]	1.52±0.10[d]		1.06±0.08	1.06±0.13	0.93±0.08	0.75±0.06	
	Agpat4	**WT**	1.00±0.09	1.16±0.42	1.06±0.19	1.70±0.14	***d***	1.00±0.09	1.23±0.22	1.21±0.10	0.96±0.09	
		KO	0.75±0.16	1.18±0.14	1.33±0.24	1.56±0.21[d]		0.91±0.02	1.10±0.16	1.24±0.06	1.47±0.15	
	Agpat5	**WT**	1.00±0.09	1.03±0.11	1.04±0.11	1.22±0.09		1.00±0.13	0.89±0.12	0.87±0.19	1.00±0.12	
		KO	0.86±0.02	0.86±0.10	0.95±0.12	1.07±0.09		1.13±0.12	1.02±0.15	1.08±0.10	1.13±0.08	
PA→DAG	**Pap1**	**WT**	1.00±0.06	1.47±0.19	2.02±0.27[d]	1.41±0.17	***d***	1.00±0.07	1.29±0.13	1.24±0.15	0.87±0.18	
		KO	0.89±0.09	1.72±0.27[d]	2.24±0.36[d]	1.92±0.28[d]		1.01±0.05	1.06±0.14	1.33±0.24	0.93±0.09	
	Pap2	**WT**	1.00±0.10	1.42±0.18	1.27±0.30 [d]	1.34±0.12	***d***	1.00±0.21	0.72±0.07	0.97±0.20	0.89±0.10	
		KO	0.81±0.11	1.32±0.23[d]	1.46±0.22[d]	1.64±0.15[d]		0.96±0.15	0.72±0.13	0.97±0.15	0.83±0.17	
	Pap3	**WT**	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00		1.00±0.15	0.93±0.15	1.05±0.10	0.90±0.13	
		KO	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00		1.04±0.13	0.62±0.06	0.82±0.08	0.79±0.06	
DAG→TAG	**Dgat1**	**WT**	1.00±0.05	0.83±0.12	0.94±0.08	1.74±0.23[d]	***d***	1.00±0.03	1.24±0.24	1.48±0.08	1.12±0.18	
		KO	0.92±0.11	0.88±0.09	1.12±0.10	1.92±0.27[d]		1.05±0.07	1.25±0.20	1.27±0.10	1.16±0.09	
	Dgat2	**WT**	1.00±0.09	1.27±0.11	1.65±0.21[d]	1.55±0.13[d]	***d***	1.00±0.06	0.92±0.15	0.98±0.11	0.79±0.13	
		KO	0.83±0.05	1.24±0.12	2.13±0.29[d]	1.31±0.07		0.95±0.01	0.86±0.10	0.94±0.08	0.89±0.08	
TAG hydrolysis	**Pnpla2**	**WT**	1.00±0.17	1.36±0.16	1.42±0.23	1.70±0.30[d]	***d***	1.00±0.29	1.16±0.19	1.26±0.22	0.76±0.22	
		KO	0.94±0.05	1.17±0.10	1.61±0.26[d]	1.42±0.07		1.13±0.20	1.15±0.16	0.99±0.07	0.87±0.10	
	HSL	**WT**	1.00±0.19	1.01±0.13	0.94±0.12	1.25±0.08		1.00±0.10	1.01±0.16	0.92±0.11	0.84±0.14	
		KO	0.83±0.06	0.95±0.10	1.11±0.17	1.14±0.12		1.09±0.09	1.00±0.07	0.99±0.06	1.02±0.09	

Experimental information is provided in the legend for Fig. 7. Significant main effects ($p<0.05$) of diet (*d*) and genotype (*g*) as well as interactions between diet and genotype (*d x g*) are indicated in the right-hand column for each tissue. Where significant main effects were identified, simple effects for pairwise comparisons are indicated as superscripts (^{d} for effect of diet; ^{g} for effect of genotype) where appropriate. For simple effects of diet, only comparisons with the chow-fed control group within a given genotype group are shown for clarity. Abbeviations are as follows: Acaca, acetyl-CoA carboxylase; Agpat, acyl glycerol acyltransferase; DAG, diacylglycerol; Dgat, diacylglycerol acyltransferase; Fas, fatty acid synthase; G3P, glycerol 3-phosphate; HSL, hormone sensitive lipase; LPA, lysophosphatidic acid; PA, phosphatidic acid; Pap, phosphatidic acid phosphatase; Pnpla, patatin-like phospholipase domain containting protein. $p<0.05$ for main and simple effects using factorial ANOVA.