Supplemental Data

A HFD suppresses de novo lipogenesis and desaturation, but not elongation and triglyceride synthesis in mice

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Running Header: High fat diet suppresses hepatic lipogenesis

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Supplemental table 1: Hepatic glycerol and fatty acid concentrations

	SREBP1-a			Coconut Oil			SCD-1 Inhibitor		
	control	transgenic	p value	control	Oil gavage	p value	control	inhibitor	p value
Fatty acid per glycerol unit	2.82±0.08	2.95±0.03	NS	3.07±0.12	2.99±0.13	NS	3.30±0.10	4.28±1.06	NS
Hepatic glycerol concentration (mg/g liver)	1.50±0.37	10.65±0.60	<0.001	4.39±0.85	4.51±0.57	NS	3.09±0.82	0.32±0.06	<0.05
Hepatic fatty acid concentration (mg/g liver)	12.50±3.06	91.54±5.83	<0.01	41.69±9.42	41.41±3.63	NS	31.49±6.10	3.36±0.47	<0.01

Supplemental table 2: Fatty acid characteristics in SREBP1-a transgenic and control liver

	control	SREBP1-a transgenic	p value
Average number of carbons per fatty acid	17.2±0.4	17.2±0.1	NS
Average molecular weight of fatty acids	270±5	270±2	NS

Data are represented as the mean ± SE (n=5).

Supplemental table 3: ^{2}H enrichments of each detectable individual NMR peak

	SREBP1-a			Coconut Oil			SCD-1 Inhibitor		
	control	transgenic	p value	Control	Oil gavage	p value	control	inhibitor	p value
A	0.51±0.04	1.27±0.03	<0.001	0.25±0.02	0.24±0.02	NS	0.44±0.14	0.18±0.06	NS
D	0.34±0.03	0.77±0.01	<0.001	0.21±0.005	0.22±0.05	NS	0.40±0.13	0.15±0.05	NS
E	0.38±0.03	0.68±0.03	<0.001	0.30±0.01	0.32±0.05	NS	0.40±0.06	0.27±0.04	NS
F	0.13±0.03	0.56±0.01	<0.001	0.05±0.02	0.04±0.02	NS	0.03±0.01	0.00±0.00	<0.05
H	0.42±0.03	0.96±0.02	<0.001	0.30±0.01	0.34±0.04	NS	0.41±0.07	0.35±0.07	NS
L	1.17±0.14	1.06±0.04	NS	1.17±0.15	1.29±0.10	NS	1.30±0.18	1.27±0.05	NS

Supplemental table 4: Body water ^{2}H enrichments

	SREBP1-a			Coconut Oil			SCD-1 Inhibitor		
	control	transgenic	p value	Control	Oil gavage	p value	control	inhibitor	p value
Body Water enrichment	3.85±0.19	4.09±0.24	NS	3.48±0.10	3.87±0.17	NS	3.28±0.12	2.91±0.06	NS

Supplemental table 5: Hepatic and WAT triglycerides in HFD and control non-fasted BDF1 mice

	Liver			White adipose tissue		
	Control	High fat diet	p value	Control	High fat diet	p value
Fatty acid per glycerol unit	3.04±0.02	3.05±0.01	NS	3.2±0.3	2.93±0.02	NS
Hepatic glycerol concentration (mg/g tissue)	2.96±0.20	4.65±0.20	<0.05	38±8	46±4	NS
Fatty acid concentration (mg/g tissue)	27±2	41±2	<0.05	320±63	396±31	NS

Data are represented as the mean ± SE (n=5).

Supplemental table 6: Chain length and molecular weight of fatty acid species in HFD and control BDF1 mice

	Liver			**White Adipose tissue**		
	Control	High fat diet	p value	Control	High fat diet	p value
Average number of carbons per fatty acid	17.4±0.4	16.9±0.1	NS	15.7±1	17.1±0.12	NS
Average molecular weight of fatty acids	273±5	267±1	NS	249±13	268.46±1	NS

Data are represented as the mean ± SE (n=5).

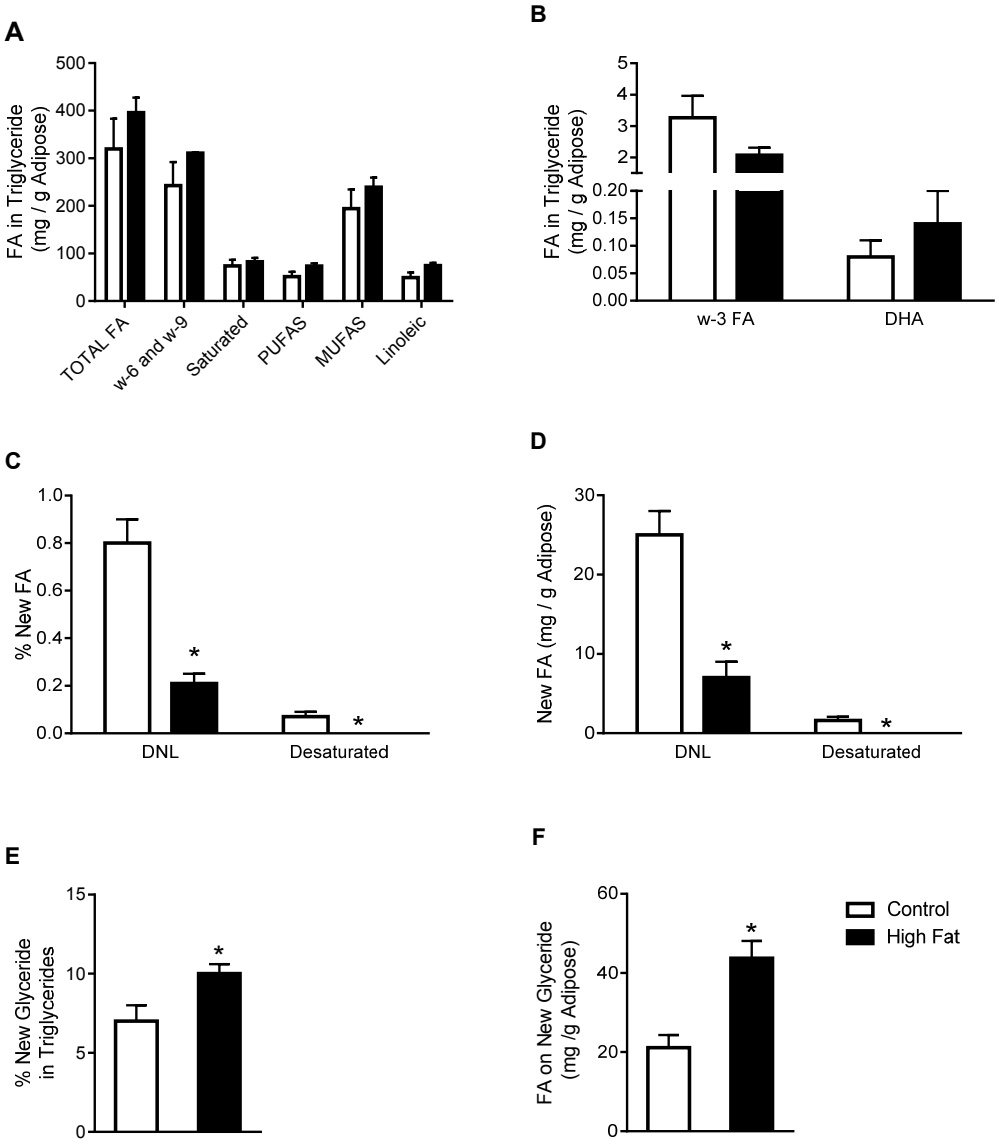
Supplemental table 7: ^{2}H enrichments of each detectable individual NMR peak of BDF1 mice

	Liver			White adipose tissue		
	Control	High fat diet	p value	Control	High fat diet	p value
A	0.32±0.02	0.05±0.01	<0.001	0.07±0.04	0.01±0.0003	NS
D	0.22±0.01	0.05±0.01	<0.001	0.05±0.02	0.001±0.001	NS
E	0.25±0.01	0.10±0.02	<0.001	0.02±0.01	0.001±0.001	NS
F	0.13±0.01	0.004±0.002	<0.001	0.01±0.009	0.00±0.00	NS
H	0.33±0.06	0.11±0.02	<0.05	0.03±0.02	0.002±0.001	NS
L	0.53±0.02	0.59±0.06	NS	0.36±0.06	0.55±0.03	<0.05

Supplemental table 8: Body water ^{2}H enrichments of BDF1 mice

	BDF1		
	control	HFD	p value
Body Water enrichment	4.85±0.40	5.09±0.35	NS

Supplemental Figure 1: Lipidomic and flux in adipose of mice fed a low fat control or HFD. (A-B) Lipid species determined from ^{1}H NMR spectra of liver. (C) Percent contribution of de novo lipogenesis (DNL) and desaturation and elongation to adipose triglyceride fatty acids during 4 days of $^{2}H_2O$ exposure. (D) Mass of triglyceride fatty acids derived from DNL and desaturation. (E) Percent of triglyceride glycerol that was newly made during $^{2}H_2O$ exposure. (F) Mass of fatty acids on new glyceride. Data are presented as the mean ± SE (n=4-5). * Different from control $p<0.05$.



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