

Fig. S1. Picture of high foraging cost treatment (HF) cage setup.



Fig S2. Plot of all tissue masses in (A) females and (B) males. Filled circles represent CTR birds; Filled triangles represent HF birds. “lint” = large intestine; “sint” = small intestine”; “pect”=flight muscle. Data shown are least-squared means \pm s.e.

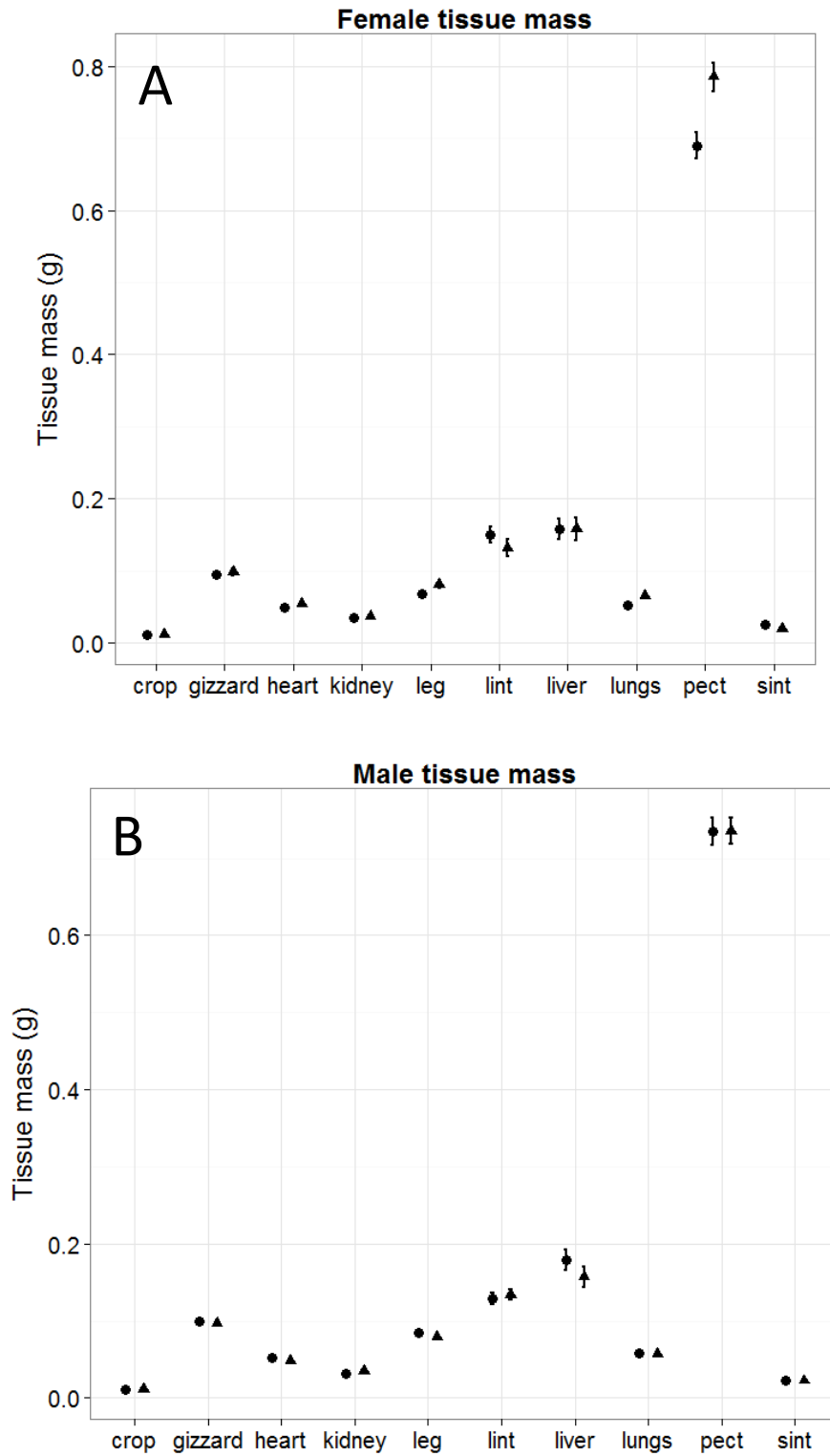


Fig S3. Day 3 and Day 60 data for (A) body mass, (B) basal metabolic rate (BMR), (C) hematocrit (Hct) and (D) hemoglobin (Hb), using pre-treatment (Day 0) values as covariate. Filled circles and solid lines represent CTR birds; Filled triangles and dashed lines represent HF birds. Data shown are least-squared means \pm s.e.

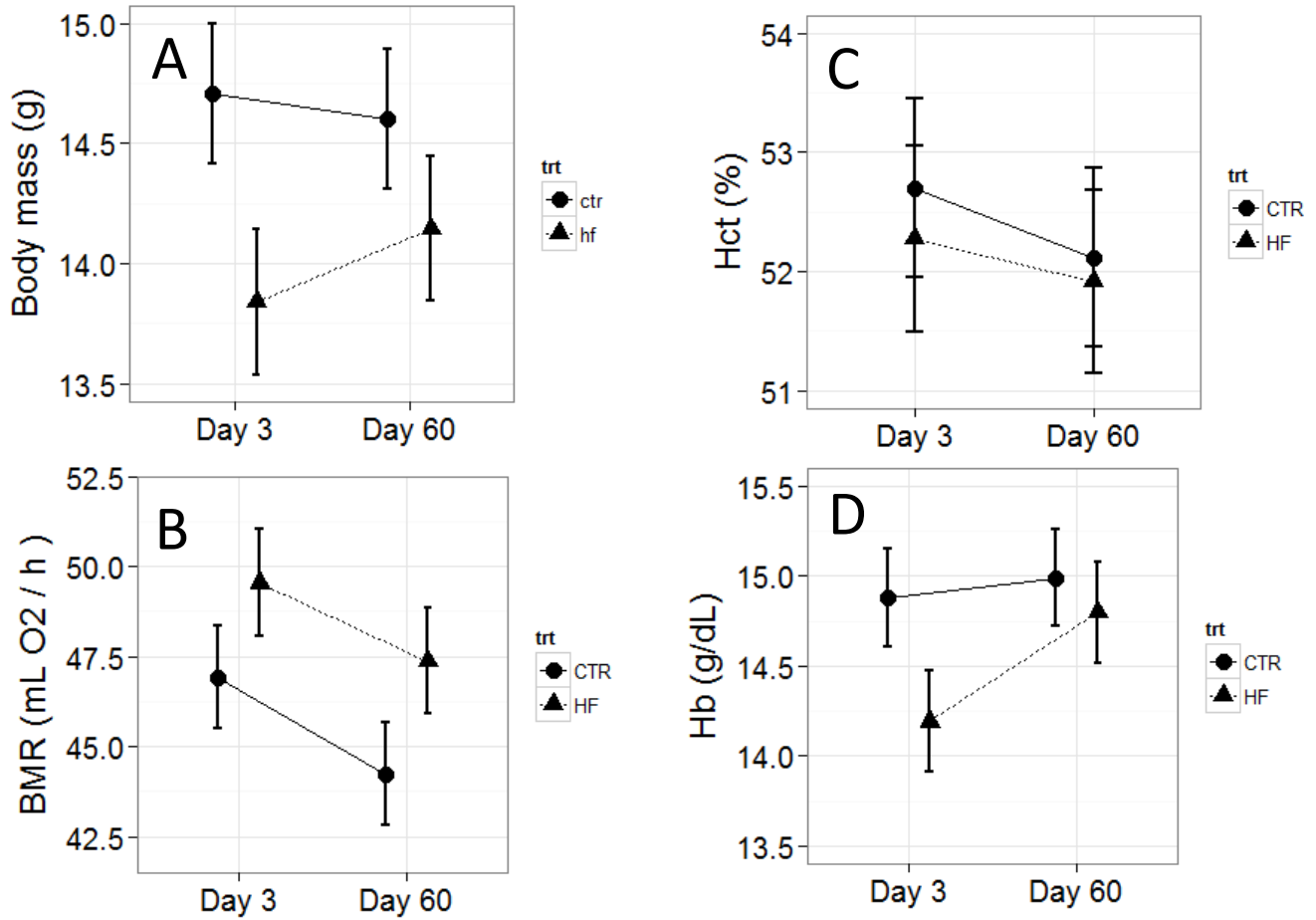


Table S1. Sample sizes for each physiological measurement (organized by sex and treatment)

	HF Male	HF Female	CTR Male	CTR Female
BMR	18	9	18	11
Hct	18	9	18	11
Hb	18	9	18	11
Body composition	18	9	16	11
Glucose	10	6	8	5
Triglyceride and glycerol	15	7	7	8
OXY	16	8	13	11
dROMs	15	8	9	8

Table S2. Statistical model showing Time by Treatment interaction in body mass, BMR, hematocrit, hemoglobin, and glucose, and treatment effect on behavior, immediate food consumption, tissue masses, glycerol, triglyceride, OXY and dROMs. Data shown are least-squared means \pm s.e. with both sexes pooled.

Trait	Pre-trt		Day 3		Day 60		Day 90		Random factor	Estimated Variance	Residual Variance	numDF	denDF	W-value	Z-value	F-value	P-value
	CTR	HF	CTR	HF	CTR	HF	CTR	HF									
Body mass (g)	14.43 \pm 0.29	14.37 \pm 0.30	14.69 \pm 0.29	13.85 \pm 0.30	14.60 \pm 0.29	14.15 \pm 0.30	NA	NA	Bird ID	1.930	0.468	2	108	.	.	4.499	0.01
BMR (mL O ₂ /h)	44.72 \pm 1.32	48.42 \pm 1.37	47.08 \pm 1.32	49.47 \pm 1.38	44.39 \pm 1.32	47.35 \pm 1.37	NA	NA	Bird ID	7.491	42.834	2	107	.	.	0.137	0.87
Hematocrit (%)	52.69 \pm 0.72	51.30 \pm 0.74	52.67 \pm 0.72	53.62 \pm 0.75	52.05 \pm 0.72	51.96 \pm 0.75	NA	NA	Bird ID	9.479	5.500	2	107	.	.	1.163	0.32
Hemoglobin (g/dL)	14.91 \pm 0.26	14.35 \pm 0.27	14.82 \pm 0.27	14.23 \pm 0.28	14.92 \pm 0.26	14.86 \pm 0.27	NA	NA	Bird ID	0.937	1.079	2	107	.	.	1.095	0.34
Glucose (mmol/L)	15.23 \pm 0.62	16.39 \pm 0.56	15.27 \pm 0.58	14.33 \pm 0.56	14.37 \pm 0.59	14.32 \pm 0.56	NA	NA	Bird ID	1.393	3.578	2	53	.	.	2.225	0.12
Trips to feeder	NA	NA	NA	NA	NA	NA	1.921 \pm 2.130	15.843 \pm 2.209	.	.	.	1	54	215	.	.	< 0.01
Time spent resting (s)	NA	NA	NA	NA	NA	NA	1106.66 \pm 61.831	1011.625 \pm 59.382	.	.	.	1	54	.	1.10	.	0.27
Immediate food consumption (g)	NA	NA	NA	NA	NA	NA	0.177 \pm 0.029	0.275 \pm 0.029	.	.	.	1	54	215	.	.	0.009
Leg muscle mass (g)	NA	NA	NA	NA	NA	NA	0.077 \pm 0.003	0.080 \pm 0.003	.	.	.	1	52	.	-0.79	.	0.43
Flight muscle mass (g)	NA	NA	NA	NA	NA	NA	0.719 \pm 0.014	0.750 \pm 0.014	.	.	.	1	52	.	-1.59	.	0.11
Heart mass (g)	NA	NA	NA	NA	NA	NA	0.509 \pm 0.001	0.500 \pm 0.001	.	.	.	1	52	.	0.41	.	0.68
Lung mass (g)	NA	NA	NA	NA	NA	NA	0.055 \pm 0.018	0.061 \pm 0.019	.	.	.	1	52	.	-1.59	.	0.11
Crop mass (g)	NA	NA	NA	NA	NA	NA	0.012 \pm 0.0008	0.011 \pm 0.0008	.	.	.	1	52	.	0.54	.	0.59
S. intestine mass (g)	NA	NA	NA	NA	NA	NA	0.023 \pm 0.001	0.021 \pm 0.001	.	.	.	1	52	.	1.09	.	0.27
L. intestine mass (g)	NA	NA	NA	NA	NA	NA	0.138 \pm 0.007	0.132 \pm 0.007	.	.	.	1	52	.	0.59	.	0.56
Gizzard mass (g)	NA	NA	NA	NA	NA	NA	0.097 \pm 0.003	0.096 \pm 0.003	.	.	.	1	52	.	-0.10	.	0.92
Liver mass (g)	NA	NA	NA	NA	NA	NA	0.171 \pm 0.01	0.157 \pm 0.01	.	.	.	1	52	.	1.01	.	0.31
Kidney mass (g)	NA	NA	NA	NA	NA	NA	0.033 \pm 0.002	0.035 \pm 0.002	.	.	.	1	52	.	-0.73	.	0.47
Glycerol (mmol/L)	NA	NA	NA	NA	NA	NA	0.950 \pm 0.155	1.067 \pm 0.127	.	.	.	1	35	.	-0.57	.	0.57
Triglyceride (mmol/L)	NA	NA	NA	NA	NA	NA	4.611 \pm 0.362	4.527 \pm 0.296	.	.	.	1	35	.	0.18	.	0.86

OXY (mmol/L HOCl neutralized)	NA	NA	NA	NA	NA	NA	243.06 ± 9.803	233.28 ± 9.803	.	.	.	1	46	.	0.70	.	0.48
dROMs (mmol/L H2O2 equivalent)	NA	NA	NA	NA	NA	NA	4.919 ± 0.318	5.769 ± 0.253	.	.	.	1	38	.	-2.11	.	0.03