Supplemental Table 1. Statistical analyses of muscle thermogenic response to predator threat (ferret odor) before and after 3 weeks of 50% calorie restriction (CR).

		Effect	F	Degrees of freedom	p-value
Home-cage temperature after odor presentation	Main effects	Before CR vs After CR	0.932	1,7	0.366
		Control < Predator Odor	18.215	1,7	**0.004**†
		Baseline through 90 min	12.742	2.405, 16.835	**0.001**†
	Interactions	Before/After CR X Control/Predator Odor	2.819	1,7	0.137
		Before/After CR X 90 min	6.309	5,35	**<0.001**†
		Control/Predator Odor X 90 min	14.254	4.473,31.313	**<0.001**†
		3-way Interaction	3.727	5,35	**0.008**†
Before CR	Main effects	Control < Predator Odor	11.714	1,7	**0.011**
		Baseline through 90 min	12.575	3.941,27.585	**<0.001**†
	Interaction	Control/Predator Odor X 90 min	13.958	4.587,32.109	**<0.001**†
After CR	Main effects	Control < Predator Odor	7.518	1,7	**0.029**
		Baseline through 90 min	3.326	2.451,17.155	0.052†
	Interaction	Control/Predator Odor X 90 min	4.497	4.276,29.930	**0.005**†
Control odor	Main effects	Before CR vs After CR	0.094	1,7	**0.768**
		Baseline through 90 min	6.371	5,35	**<0.001**†
	Interaction	Before/After CR X 90 min	20.66	5,35	0.093†
Predator odor	Main effects	Before CR vs After CR	6.490	1,7	**0.038**
		Baseline through 90 min	14.508	2.275,15.927	**<0.001**†
	Interaction	Before/After CR X 90 min	11.452	5,35	**<0.001**†
Home-cage temperature AUC (60 min)	Main effects	Before > After CR	18.626	1,7	**0.003**
		Control < Predator Odor	33.632	1,7	**0.001**
	Interaction	Before/After CR X Control/Predator Odor	7.743	1,7	**0.027**
Home-cage temperature AUC (90 min)	Main effects	Before CR > After CR	14.646	1,7	**0.006**
		Control < Predator Odor	37.157	1,7	**<0.001**
	Interaction	Before/After CR X Control/Predator Odor	12.308	1,7	**0.010**
Treadmill-walking muscle temperature	Main effects	Before vs After CR	3.456	1,7	0.105
		Time on treadmill (15 min)	234.26	2.850,19.948	**<0.001**†
	Interaction	Before/After CR vs Time on treadmill	4.874	2.7,818.9	**0.013**†

3-way repeated-measures analysis of variance (ANOVA): 2X2X6. †Huynh-Feldt correction for violations of sphericity. AUC, baseline-corrected area under the curve. N = 8.

Supplemental Table 2. Statistical analyses of muscle thermogenic response to predator threat (ferret odor) in high-capacity runners (HCR) and low-capacity runners (LCR).

		Effect	F	Degrees of freedom	p-value
Home-cage temperature after odor presentation (6 hrs)	Main effects	HCR > LCR	5.922	1,14	**0.029**
		Control < Predator Odor	54.496	1,14	**<0.001**
		Baseline through 6 hrs	171.261	5.630,78.825	**<0.001**†
	Interactions	Line X Control/Predator Odor	13.598	1,14	**0.002**
		Line X 6 hrs	4.309	5.630,78.825	**0.001**†
		Control/Predator Odor X 6 hrs	9.475	6.014,84.196	**<0.001**†
		3-way Interaction	3.007	6.014,84.196	**0.010**†
Home-cage temperature after odor presentation (3 hrs)	Main effects	HCR > LCR	7.226	1,14	**0.018**
		Control < Predator Odor	93.591	1,14	**<0.001**
		Baseline through 3 hrs	121.276	7.409,103.724	**<0.001**†
	Interactions	Line X Control/Predator Odor	20.850	1,14	**<0.001**
		Line X 3 hrs	6.237	7.409,103.724	**<0.001**†
		Control/Predator Odor X 3 hrs	7.960	4.559,63.820	**<0.001**†
		3-way Interaction	3.957	4.559,63.820	**0.004**†
Control odor	Main effects	HCR > LCR	0.522	1,14	**0.482**
		Baseline through 6 hrs	52.317	5.069,70.967	**<0.001**†
	Interaction	Line X 6 hrs	0.544	5.069,70.967	0.744†
Predator odor	Main effects	HCR > LCR	11.708	1,14	**<0.001**
		Baseline through 6 hrs	108.333	6.227,87.179	**<0.001**†
	Interaction	Line X 6 hrs	6.177	6.227,87.179	**<0.001**†
HCR	Main effects	Control < Predator Odor	43.799	1,7	**<0.001**†
		Baseline through 6 hrs	92.465	3.382,23.676	**<0.001**†
	Interaction	Control/Predator Odor X 6 hrs	11.955	6.230,43.608	**<0.001**†
LCR	Main effects	Control < Predator Odor	11.538	1,7	**0.011**†
		Baseline through 6 hrs	82.043	5.881,41.164	**<0.001**†
	Interaction	Control/Predator Odor X 6 hrs	1.367	4.813,33.691	0.262†

†Huynh-Feldt correction for violations of sphericity. N = 8 HCR and 8 LCR.

Supplemental Table 3. Statistical analyses of muscle thermogenic response to predator threat (ferret odor) in rats with monogenic obesity secondary to loss of function in *Melanocortin 4 receptor* (*Mc4r*$^{K314X/K314X}$; HOM), rats heterozygous for the mutation (*Mc4r*$^{+/K314X}$; HET), and wild-type rats with intact MC4R function (*Mc4r*$^{+/+}$; WT).

		Effect	F	Degrees of freedom	p-value
Home-cage temperature after odor presentation	Main effects	Genotype	0.851	2,27	0.438
		Control vs Predator Odor	3.598	1,27	0.069
		Baseline through 120 min	44.308	2.458,66.378	**<0.001**
	Interactions	Control/Predator Odor X Genotype	0.001	2,27	0.999
		Genotype X 3 hrs	1.644	4.917,66.378	0.162
		Control/Predator Odor X 3 hrs	6.490	2.527,68.236	**0.001**†
		3-way Interaction	0.450	5.055,68.236	0.814
Home-cage temperature AUC (120 min)	Main effects	Genotype	2.594	2,27	0.093
		Control vs Predator Odor	10.984	1,27	**0.003**
	Interaction	Control/Predator Odor X Genotype	0.317	2,27	0.731
Treadmill-walking muscle temperature (35 min)	Main effects	Genotype	1.150	2,23	0.334
		Control vs Predator Odor	1.468	1,23	0.238
		Baseline through 120 min	11.244	4.757,109.420	**<0.001**†
	Interactions	Control/Predator Odor X Genotype	1.994	2,23	0.195
		Genotype X 35 min	0.261	9.515,109.420	0.986†
		Control/Predator Odor X 35 min	0.712	5.470,125.799	0.628†
		3-way Interaction	0.857	10.939,125.799	0.583†
Treadmill-walking muscle temperature AUC (35 min)	Main effects	Genotype	0.335	2,23	0.719
		Control vs Predator Odor	0.578	1,23	0.455
	Interaction	Control/Predator Odor X Genotype	0.866	2,23	0.434

Treadmill-walking muscle temperature and baseline-corrected area under the curve (AUC) at 35 min of walking. †Huynh-Feldt correction for violations of sphericity. N = 5/genotype/sex.