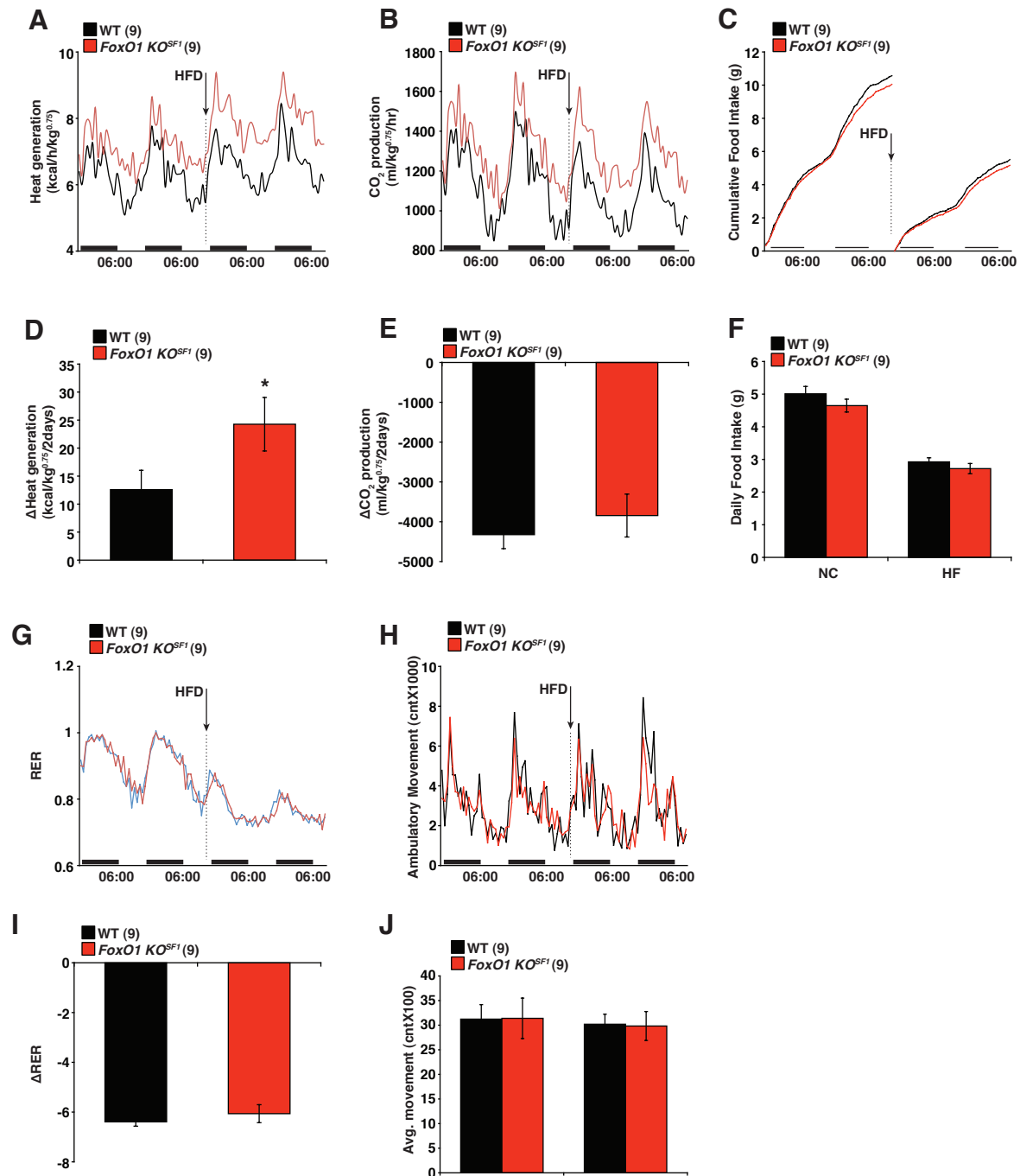


**Supplementary Figure 1. Histology of pituitary gland, adrenal gland, and testis.**

Sections from the indicated tissues from WT and *FoxO1*  $KO^{SF1}$  mice were analyzed using hematoxylin and eosin (H&E) staining. Ant, anterior lobe. Int, intermediate lobe. Post, posterior lobe. C, cortex. M, medulla. I, interstitium. S, spermatozoa. ST, seminiferous tubules. Scale bar = 200um.



**Supplementary Figure 2. Effect of acute high fat diet on metabolic parameters in WT and *FoxO1* KO<sup>SF1</sup> mice.**

Temporal changes of **(a)** heat generation, **(b)** CO<sub>2</sub> production, and **(g)** RER. Changes in **(d)** heat generation, **(e)** CO<sub>2</sub> production, and **(i)** RER between 2 days before and after HFD. **(c)** Cumulative food intake and **(f)** daily food intake between genotypes. **(h)** Ambulatory movement and **(j)** average in total movement. Numbers of animals examined are expressed in parenthesis in each graph. The data are expressed as either average **(a-c, g, h)** or mean±SEM (\*P<0.05, Student's t-test). cnt, beam breaks counts.

**Supplementary Table 1**  
**Effect of FoxO1 KO in the VMH on biochemical parameters**

Parameter	WT	<i>FoxO1</i> KO <sup>SF1</sup>	Age (wks)	Bleeding Time
Basal Corticosterone (ng/ml)	52.82±6.16 (6)	51.02±8.15 (5)	6-7	12:00-12:30
Basal Corticosterone (ng/ml)	46.58±10.43 (6)	44.82±9.03 (4)	5	08:00-08:30
Stressed Corticosterone (ng/ml)	118.82±27.18 (7)	120.76±30.47 (5)	5	08:00-08:30
Testosterone (ng/dl)	114.67±18.11 (9)	116.20±22.72 (7)	13-16	14:00-15:30
FSH (ng/ml)	185.89±25.51 (10)	162.31±26.60 (6)	13-16	14:00-15:30
LH (ng/ml)	0.97±0.38 (10)	0.82±0.36 (5)	13-16	14:00-15:30
T3 (ng/ml)-Fed	0.82±0.07 (9)	0.74±0.07 (8)	7-9	14:00-15:30
T3 (ng/ml)-Fasted (24hrs)	0.45±0.07 (10)	0.41±0.1 (6)	7-10	14:00-15:30
T4 (ng/ml)-Fed	12.76±1.16 (9)	10.67±1.2 (8)	7-9	14:00-15:30
T4 (ng/ml)-Fasted (24hrs)	4.34±0.65 (10)	5.48±1.25 (6)	7-10	14:00-15:30

The data were expressed as mean±SEM and numbers of experimental animals were indicated in parenthesis.  
No statistical significance was detected between genotypes.

**Supplementary Table 2**  
**Body length in various food conditions**

	WT	<i>FoxO1</i> <i>KO</i> <sup>SF1</sup>	Age (wks)
Male, normal chow (cm)	9.36±0.05 (10)	9.38±0.05 (9)	10
Female, normal chow (cm)	9.34±0.05 (10)	9.4±0.04 (8)	17-18
Male, high fat (cm)	9.67±0.09 (8)	9.85±0.12 (6)	11-12
Female, high fat (cm)	9.02±0.21 (6)	9.15±0.21 (4)	12-13

The data were expressed as mean±SEM and numbers of experimental animals were indicated in parenthesis.  
No statistical significance was detected between genotypes.