

Table S1
Indirect calorimetry

	<i>Mstn</i> ^{+/+}	<i>Mstn</i> ^{-/-}	<i>P</i> value			
Body weight (g)	32.7 ± 0.8	35.3 ± 0.4	0.028			
Lean mass (g)	23.1 ± 0.4	31.7 ± 0.3	<0.001			
Fat mass (g)	9.5 ± 0.6	3.3 ± 0.4	<0.001			
	23°C			30°C		
	<i>Mstn</i> ^{+/+}	<i>Mstn</i> ^{-/-}	<i>P</i> value	<i>Mstn</i> ^{+/+}	<i>Mstn</i> ^{-/-}	<i>P</i> value
Energy expenditure (kcal/hr)						
Resting	0.56 ± 0.01	0.63 ± 0.01	<0.001	0.37 ± 0.01	0.43 ± 0.01	0.002
Total	0.66 ± 0.01	0.73 ± 0.01	0.001	0.48 ± 0.02	0.54 ± 0.01	0.031
Resting vO ₂ (mL/hr)	114.8 ± 2.5	128.6 ± 1.3	<0.001	74.5 ± 2.3	86.8 ± 2.0	0.002
Total vO ₂ (mL/hr)	141.3 ± 3.9	146.3 ± 3.9	0.390	102.7 ± 4.5	105.9 ± 2.8	0.599
Resting vO ₂ (mL/hr/lean mass ^{0.75})	10.9 ± 0.2	9.6 ± 0.1	<0.001	7.1 ± 0.2	6.5 ± 0.2	0.055
Total vO ₂ (mL/hr/lean mass ^{0.75})	13.4 ± 0.3	11.0 ± 0.3	<0.001	9.7 ± 0.4	7.9 ± 0.2	0.003
Resting RER (vCO ₂ /vO ₂)	0.837 ± 0.016	0.861 ± 0.017	0.354	0.871 ± 0.019	0.935 ± 0.013	0.024
Total RER (vCO ₂ /vO ₂)	0.843 ± 0.015	0.889 ± 0.008	0.035	0.862 ± 0.017	0.945 ± 0.012	0.003
Activity (beam breaks/min)						
Total	185.2 ± 29.8	143.2 ± 30.7	0.355	159.4 ± 21.7	119.6 ± 12.0	0.176
Ambulating	57.2 ± 14.7	45.6 ± 12.2	0.578	44.2 ± 9.5	27.9 ± 4.8	0.200

All data are expressed as mean ± SEM (*Mstn*^{+/+}, *n* = 10 and *Mstn*^{-/-}, *n* = 7). *P* values < 0.05 were considered significant.

Table S2
Liver triglyceride concentration on standard or HFD

	Liver triglyceride ($\mu\text{mol/g}$)	<i>P</i> value (between diets within a genotype)	<i>P</i> value (versus control within a diet)
Standard Chow			
<i>Mstn</i> ^{+/+}	22.5 \pm 2.4		
<i>Mstn</i> ^{-/-}	6.1 \pm 1.0		0.036
HFD			
<i>Mstn</i> ^{+/+}	73.3 \pm 6.3	<0.001	
<i>Mstn</i> ^{-/-}	24.8 \pm 3.0	0.004	<0.001
Standard Chow			
<i>Non-transgenic</i>	18.6 \pm 1.2		
<i>Muscle-DN</i>	11.4 \pm 1.1		1.000
HFD			
<i>Non-transgenic</i>	23.3 \pm 2.3	0.282	
<i>Muscle-DN</i>	16.2 \pm 1.1	0.341	1.000
Standard Chow			
<i>Non-transgenic</i>	19.9 \pm 1.5		
<i>Fat-DN</i>	20.4 \pm 2.0		1.000
HFD			
<i>Non-transgenic</i>	50.8 \pm 5.1	<0.001	
<i>Fat-DN</i>	40.8 \pm 3.6	<0.001	0.321

Data are expressed as mean \pm SEM of 4-11 per group.