**Supplemental Figure S1. Specificity of the Adipoq-*Cre* transgene.** (A) Quantitative RT-PCR studies of *Cre* expression in gonadal WAT and liver in male and female *Lmna*[PLAO/PLAO]*Zmpste24*^{fl/fl}Adipoq-*Cre*[−] (*grey*) and *Lmna*[PLAO/PLAO]*Zmpste24*^{fl/fl}Adipoq-*Cre*[+] (*blue*) mice. Gene expression was normalized to cyclophilin A. Graphs show mean ± SEM; 3 mice/group. *P < 0.01. (B) Adipoq-*Cre* expression in adipose tissue detected with the *Rosa*[mT/mG] reporter mouse. The expression of *Cre* in *Rosa*[mT/mG] mice results in the loss of tdTomato fluorescence (*red*) and the appearance of EGFP fluorescence (*green*). Gonadal WAT and kidney (with attached perirenal fat) were collected from *Rosa*[mT/mG]Adipoq-*Cre*[−] and *Rosa*[mT/mG]Adipoq-*Cre*[+] mice, and tissue sections were imaged by fluorescence microscopy. Nuclei were stained with DAPI (*white*). The border between perirenal fat and kidney is marked with a dashed line. Scale bars; 50 μm for WAT and 25 μm for kidney. (C) Detection of Adipoq-*Cre* expression in peritoneal macrophages using the *Rosa*[mT/mG] reporter mouse. Macrophages isolated from a *Rosa*[mT/mG]Adipoq-*Cre*[+] mouse were stained with DAPI to identify nuclei (*white*) and examined by fluorescence microscopy. The macrophages expressed tdTomato fluorescence (*red*) but not EGFP (*green*). Scale bar, 20 μm. (D) Measurement of *Zmpste24* expression in peritoneal macrophages isolated from male *Lmna*[PLAO/PLAO]*Zmpste24*^{fl/fl}Adipoq-*Cre*[−] (*grey*) and *Lmna*[PLAO/PLAO]*Zmpste24*^{fl/fl}Adipoq-*Cre*[+] (*blue*) mice. Gene expression was normalized to cyclophilin A; graphs show mean ± SEM; n = 3 mice/group. *P < 0.05. (E and F) Measurement of *Zmpste24* expression by qRT-PCR in liver (E) and kidney (F) from male and female *Lmna*[PLAO/PLAO]*Zmpste24*^{fl/fl}Adipoq-*Cre*[−] (*grey*) and *Lmna*[PLAO/PLAO]*Zmpste24*^{fl/fl}Adipoq-*Cre*[+] (*blue*) mice. Data were normalized to cyclophilin A. The mean ± SEM are shown for 5–7 male mice and 4–5 female mice/genotype. *Zmpste24* expression was not reduced in the liver and kidney of *Lmna*[PLAO/PLAO]*Zmpste24*^{fl/fl}Adipoq-*Cre*[+] mice (P > 0.250).
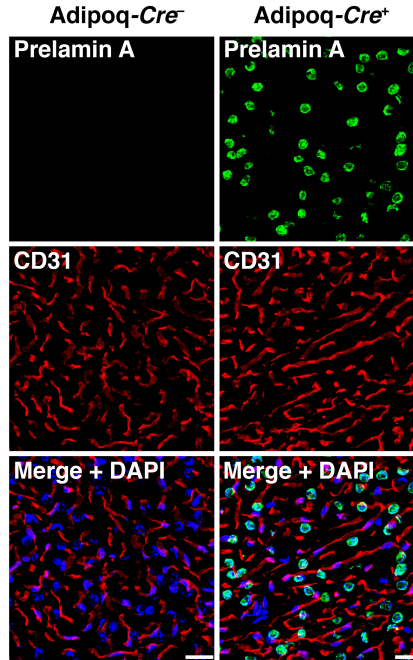
Supplemental Figure S2. Detection of prelamin A in adipocytes but not endothelial cells of $Lmna^{PLAO/PLAO}Zmpste24^{fl/fl}$Adipoq-$Cre^+$ mice. Frozen tissue sections of BAT from a $Lmna^{PLAO/PLAO}Zmpste24^{fl/fl}$Adipoq-$Cre^-$ mouse and a $Lmna^{PLAO/PLAO}Zmpste24^{fl/fl}$Adipoq-$Cre^+$ mouse were stained with antibodies against prelamin A (*green*) and CD31 (*red*). DNA was stained with DAPI (*blue*). Images were recorded with a confocal microscope using a 20× objective and a 2× digital zoom. Identical microscope settings were used for all tissue samples. Scale bar, 20 µm.
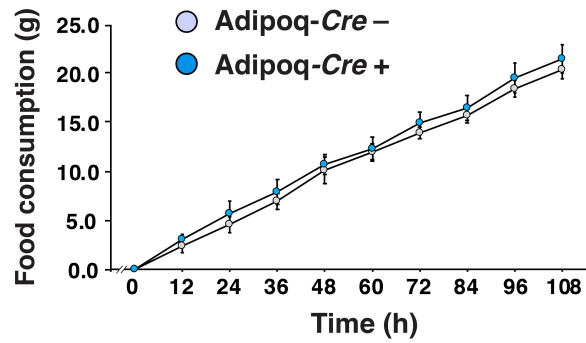
Supplemental Figure S3. Inactivating *Zmpste24* in adipose tissue does not affect food consumption. Food consumption in 24–26-week-old male $Lmna^{PLAO/PLAO}Zmpste24^{fl/fl}$Adipoq-$Cre^-$ (*grey*; $n = 5$) and $Lmna^{PLAO/PLAO}Zmpste24^{fl/fl}$Adipoq-$Cre^+$ (*blue*; $n = 6$) mice was measured for five consecutive days. The amount of food consumed was measured every 12 h. Graphs depict mean ± SD. Food consumption was analyzed by repeated measures ANOVA.
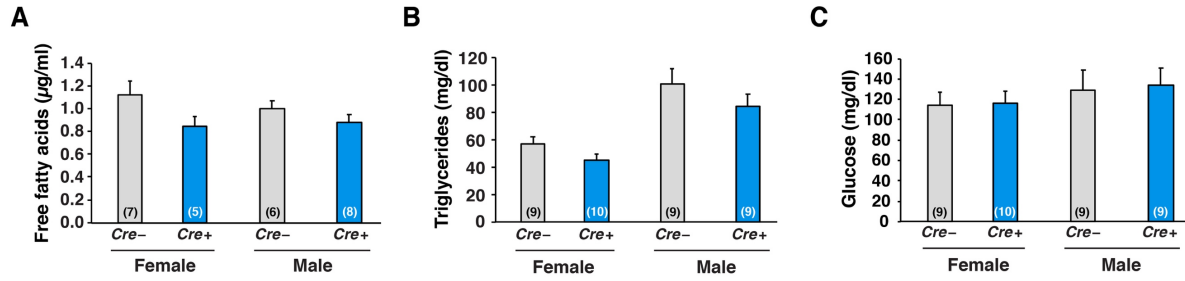
Supplemental Figure S4. Inactivating *Zmpste24* in adipocytes does not alter free fatty acid, triglyceride, or glucose levels in the plasma. Free fatty acids (A), triglyceride (B), and glucose (C) levels were measured in male and female $Lmna^{PLAO/PLAO}Zmpste24^{fl/fl}$Adipoq-$Cre^-$ (*grey*) and $Lmna^{PLAO/PLAO}Zmpste24^{fl/fl}$Adipoq-$Cre^+$ (*blue*) mice. Graphs show mean ± SEM. The numbers of mice per group are shown in parentheses. Free fatty acid, triglycerides and glucose levels were not different ($P > 0.10$).

Supplemental Table 1. Expression of adipose-related genes in gonadal WAT. Quantitative RT-PCR studies of adipose-related genes in gonadal WAT from male and female $Lmna^{PLAO/PLAO}Zmpste24^{fl/fl}$Adipoq-$Cre^-$ (–Cre) and $Lmna^{PLAO/PLAO}Zmpste24^{fl/fl}$Adipoq-$Cre^+$ (+Cre) mice. Data were normalized to cyclophilin A. The mean ± SEM are shown for 5–7 male mice/genotype and 4–5 female mice/genotype. *$P < 0.05$.

Gene	Male		Female	
	–Cre (*n* = 5)	*+Cre* (*n* = 7)	*–Cre* (*n* = 4)	*+Cre* (*n* = 5)
Pparg2	0.074 ± 0.014	0.070 ± 0.009	0.113 ± 0.007	0.086 ± 0.004*
Adipoq	1.951 ± 0.200	1.681 ± 0.204	3.073 ± 0.436	2.310 ± 0.235
Srebf1c	0.114 ± 0.016	0.103 ± 0.010	0.100 ± 0.012	0.142 ± 0.042
Fasn	1.041 ± 0.104	1.044 ± 0.197	2.248 ± 0.662	2.922 ± 1.336
Acc	0.273 ± 0.044	0.216 ± 0.037	0.738 ± 0.196	0.851 ± 0.361
Cebpa	0.575 ± 0.076	0.436 ± 0.034	0.569 ± 0.034	0.424 ± 0.034*
Cebpb	0.030 ± 0.004	0.023 ± 0.002	0.020 ± 0.001	0.014 ± 0.002*
Fabp4	21.818 ± 1.339	21.271 ± 1.627	26.198 ± 1.324	21.631 ± 2.789
Ucp1	0.003 ± 0.001	0.001 ± 0.000*	0.031 ± 0.012	0.011 ± 0.011
Pnpla2	1.665 ± 0.219	1.285 ± 0.118	1.852 ± 0.305	1.480 ± 0.171
Gpam	0.174 ± 0.030	0.124 ± 0.014	0.377 ± 0.032	0.301 ± 0.053
Hsl	1.131 ± 0.133	0.892 ± 0.078	1.143 ± 0.089	0.802 ± 0.041*
Lpin1	0.123 ± 0.013	0.100 ± 0.009	0.088 ± 0.004	0.073 ± 0.012

Supplemental Table 2. Expression of extracellular matrix- and p53-related genes in gonadal WAT.
Quantitative RT-PCR studies of extracellular matrix- and p53-related genes in gonadal WAT from male and female $Lmna^{PLAO/PLAO}Zmpste24^{fl/fl}$Adipoq-$Cre^-$ ($-Cre$) and $Lmna^{PLAO/PLAO}Zmpste24^{fl/fl}$Adipoq-$Cre^+$ ($+Cre$) mice. Data were normalized to cyclophilin A. The mean ± SEM are shown for 5–7 male mice/genotype and 4–5 female mice/genotype.

Gene	Male		Female	
	–Cre (*n* = 5)	*+Cre* (*n* = 7)	*–Cre* (*n* = 4)	*+Cre* (*n* = 5)
Col4a1	0.391 ± 0.064	0.432 ± 0.058	0.273 ± 0.025	0.222 ± 0.024
Col1a1	0.214 ± 0.034	0.269 ± 0.047	0.259 ± 0.037	0.256 ± 0.037
Col6a3	0.064 ± 0.018	0.082 ± 0.020	0.098 ± 0.013	0.092 ± 0.015
Gadd45a	0.021 ± 0.002	0.023 ± 0.003	0.034 ± 0.002	0.042 ± 0.012
Gadd45b	0.018 ± 0.006	0.015 ± 0.002	0.010 ± 0.001	0.011 ± 0.002
Cdkn1a	0.046 ± 0.012	0.047 ± 0.010	0.031 ± 0.010	0.019 ± 0.003

Supplemental Table 3. Primer sequences for quantitative RT-PCR studies. All sequences 5′ to 3′.

Gene	Forward	Reverse
Col4a1	ATGGCTTGCCTGGAGAGATAGG	TGGTTGCCCTTTGAGTCCTGGA
Col1a1	TGACTGGAAGAGCGGAGAGT	GACGGCTGAGTAGGGAACAC
Col6a3	CAGAACCATTGTTTCTCACT	AGGACTACACATCTTTTCAC
Gadd45a	ACTGTGTGCTGGTGACGAAC	TGATCCATGTAGCGACTTTCC
Gadd45b	GCTGTGGAGTGTGACTGCAT	GGTGAGGCGATCCTGACG
Cdkn1a	CCACAGCGATATCCAGACATT	AAGAGACAACGGCACACTTTG
Pparg2	AACTCTGGGAGATTCTCCTGTTGA	TGGTAATTTCTTGTGAAGTGCTCATA
Adipoq	GATGGCACTCCTGGAGAGAAG	CAGCTCCTGTCATTCCAACAT
Pnpla2	TCCGTGGCTGTCTACTAAAGA	TGGGATATGATGACGTTCTCTCC
Cre	ACCTGAAGATGTTCGCGATT	ATGTTTAGCTGGCCCAAATG
Prelamin A	GGTTGAGGACAATGAGGATGA	TGAGCGCAGGTTGTACTCAG
Prelamin A (set 2)	CTAGTCACCCGCTCCTACCTC	CTGCCTGGCAGGTCCCAGAT
Lmna	CCTATCGAAAGCTGCTGGAG	CCTGAGACTGGGATGAGTGG
Lmna (set 2)	GGACCAGGTGGAACAGTATAAGA	TGCTGTTCCTCTCAGCAGACT
Lmnb1	CAACTGACCTCATCTGGAAGAAC	TGAAGACTGTGCTTCTCTGAGC
Cd11c	TGCCAGGATGACCTTAGTGTCG	CAGAGTGACTGTGGTTCCGTAG
Il1b	AGAAGCTGTGGCAGCTACCTG	GGAAAAGAAGGTGCTCATGTCC
Tnfa	CAGGCGGTGCCTATGTCTC	CGATCACCCCGAAGTTCAGTAG
Fasn	GTCGTCTGCCTCCAGAGC	GTTGGCCCAGAACTCCTGTA
Acaca	GCCTCTTCCTGACAAACGAG	TGACTGCCGAAACATCTCTG
Cebpa	GCAAAGCCAAGAAGTCGGTGGA	TTCTGTTGCGTCTCCACGTTGC
Cebpb	TTTAGACCCATGGAAGTGGC	CTCCAGGTAGGGGCTGAAGT
Fabp4	AACCTGGAAGCTTGTCTCCA	CACGCCCAGTTTGAAGGAAA
Ucp1	GGGCCCTTGTAAACAACAAA	GTCGGTCCTTCCTTGGTGTA
Cd11b	TACTTCGGGCAGTCTCTGAGTG	ATGGTTGCCTCCAGTCTCAGCA
Ly71	CGTGTTGTTGGTGGCACTGTGA	CCACATCAGTGTTCCAGGAGAC
Gpam	AGCAAGTCCTGCGCTATCAT	CTCGTGTGGGTGATTGTGAC
Hsl	GGAACTAAGTGGACGCAAGC	CCAGGGCTGCCTCAGACAC
Lpin1	CTATGCTGCTTTTGGGAACCG	GGACACTCCCACTTGCTTGT
Srebf1c	CGCGGACCACGGAGCCATG	GAGAAGCTCTCAGGAGAGTTGG
Zmpste24	CCTCTGTTTGACAAATTCACACC	AACGCTTAGATCCTTCAACAACA