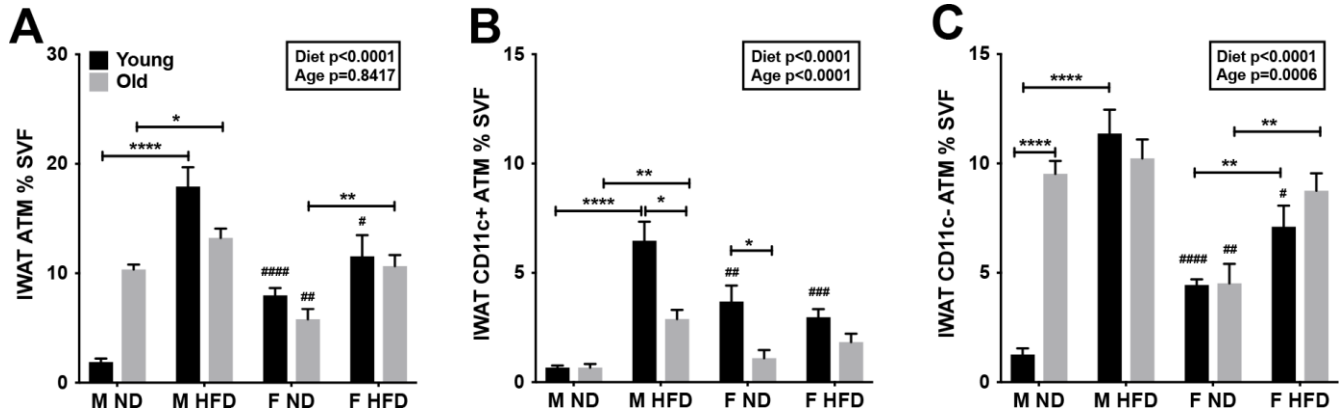
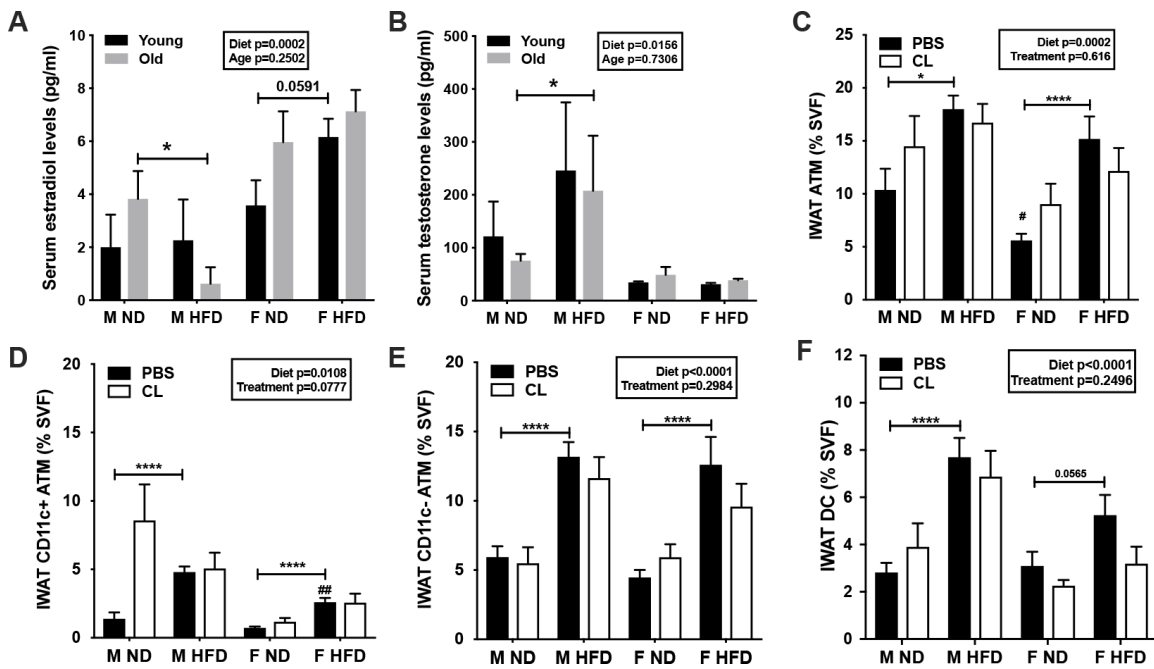


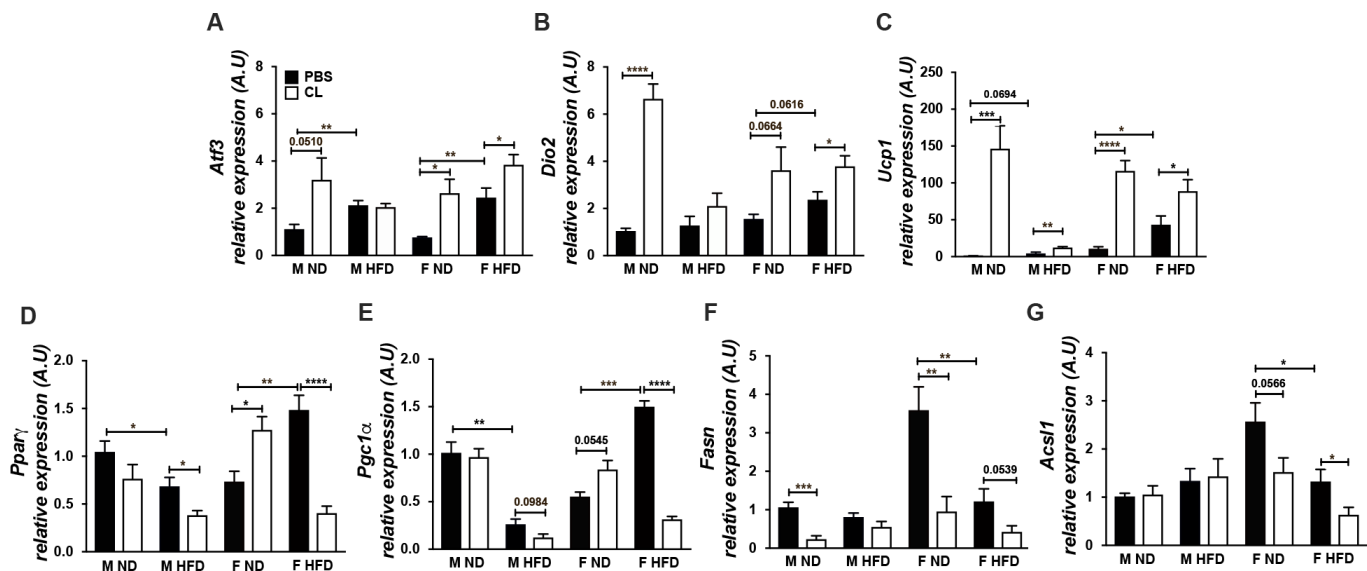
SUPPLEMENTARY FIGURES



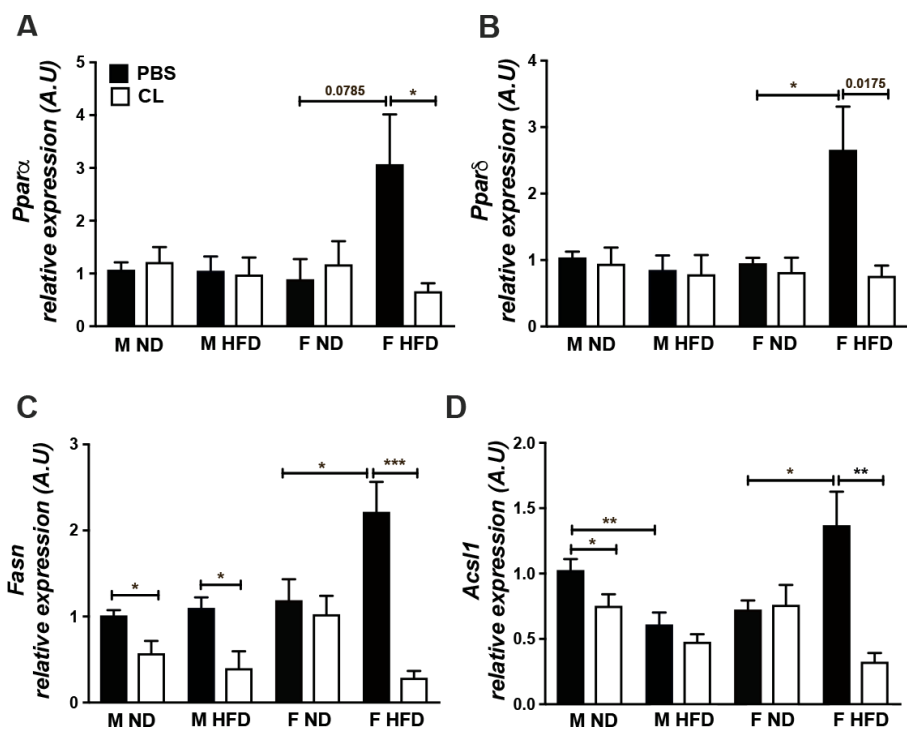
Supplementary Figure 1. Flow cytometry assessment of ATMs in young and old mice IWAT. Quantitation as a % of SVF of (A) IWAT ATMs (B) IWAT CD11c⁺ ATMs (C) IWAT CD11c⁻ ATMs in 24-week HFD fed young and old mice. N=7-12/group. Two-way analysis of variance (ANOVA) with Bonferroni-Dunn’s post-test was performed for (A–C). Statistics from diet and sex interaction are in box. Statistical significance is indicated by *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001. Student’s t-test was performed for male and female comparisons between the same diet groups indicated by #p<0.05, ##p<0.01, ###p<0.001 and ####p<0.0001; error bars are SEM.



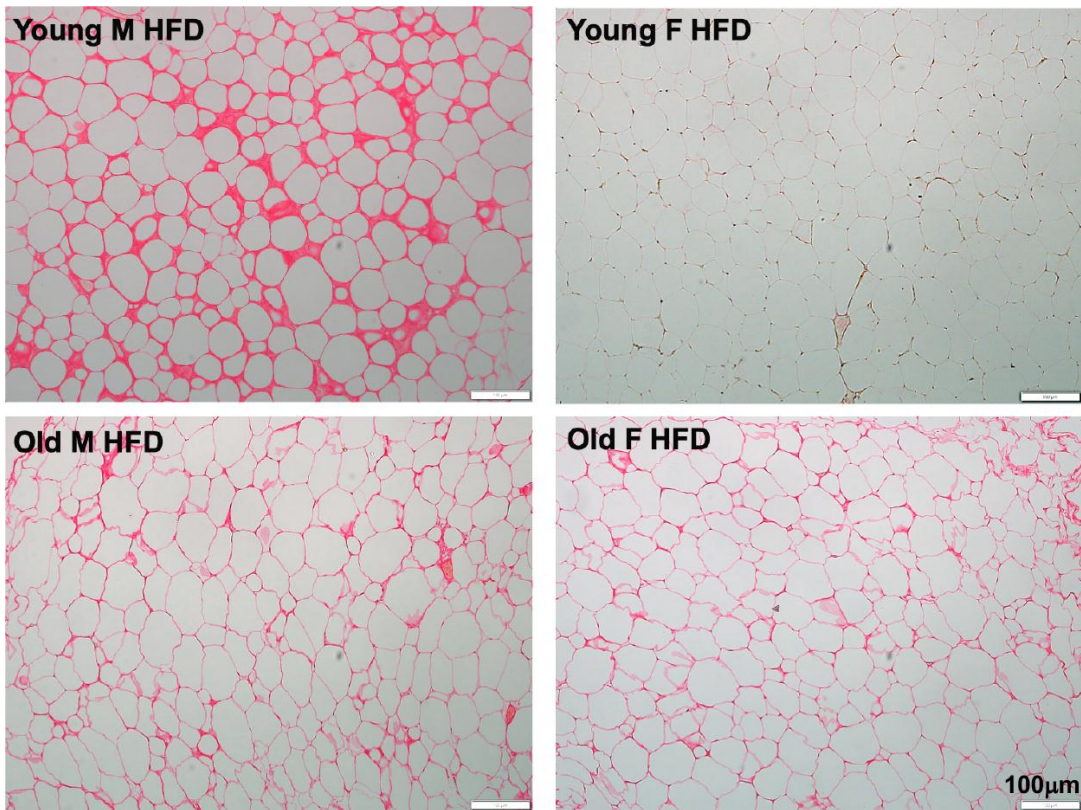
Supplementary Figure 2. Flow cytometry assessment of ATMs in old male and female mice IWAT with lipolytic stimulation. (A) Serum estradiol ELISA (B) Serum testosterone ELISA after 16 weeks of HFD. Quantitation as a % of SVF of (C) IWAT ATMs (D) IWAT CD11c⁺ ATMs (E) IWAT CD11c⁻ ATMs (F) IWAT dendritic cells (DC) numbers in 16-week HFD fed old mice treated with and without ADRB3 stimulation. N=6-14/group. Two-way analysis of variance (ANOVA) with Bonferroni-Dunn’s post-test was performed for (A–F). Statistics from diet and sex interaction are in box. Statistical significance is indicated by *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001. Student’s t-test was performed for male and female comparisons between the same diet groups indicated by #p<0.05, ##p<0.01, ###p<0.001 and ####p<0.0001; error bars are SEM.



Supplementary Figure 3. Lipolysis responsive genes in old GWAT. Relative expression of GWAT (A) *Atf3* (B) *Dio2* (C) *Ucp1* (D) *Pparγ* (E) *Pgc1α* (F) *Fasn* (G) *Acs1* in old obese male and female GWAT with and without CL treatment. A.U., arbitrary units normalized to *Gapdh*. N=5-8. One-way analysis of variance (ANOVA) with Student's t-test was performed for (A-F). Statistical significance is indicated by * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, **** $p < 0.0001$; error bars are SEM.



Supplementary Figure 4. Lipolysis responsive genes in old liver. Relative expression of GWAT (A) *Ppara* (B) *Pparδ* (C) *Fasn* (D) *Acs1* in old obese male and female liver with and without CL treatment. A.U., arbitrary units normalized to *Gapdh*. N=5-8. One-way analysis of variance (ANOVA) with Student's t-test was performed for (A-D). Statistical significance is indicated by * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, **** $p < 0.0001$; error bars are SEM.



Supplementary Figure 5. Picro Sirius Red staining in young and old GWAT. GWAT sections showing Sirius red staining in *top row left* - Young male HFD; *top row right* - Young female HFD; *bottom row left* - Old male HFD; *bottom row right* - Old female HFD. Scale bar = 100 µm.