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Supplementary Data for:

Title: **Deletion of ER-alpha in osteoblast-lineage cells reduces bone mass and enhances bone's response to mechanical loading in female, but not male, mice**

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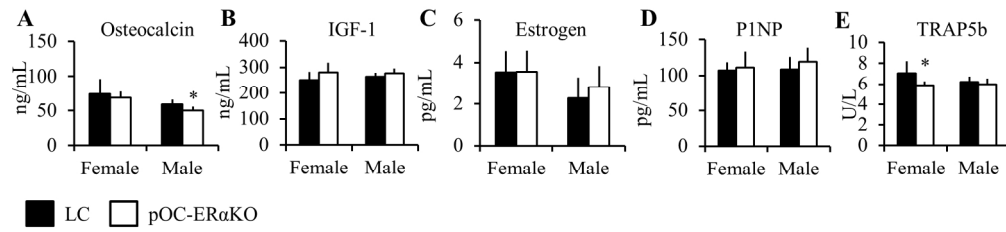
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Supplementary Table 1: Length and mass measurements for female and male LC and pOC-ER α KO mice. Data are mean \pm SD. n=6-14 per group. *pOC-ER α KO different from LC, p<0.05 by one-way ANOVA for each sex.

	Female		Male	
	LC	pOC-ER α KO	LC	pOC-ER α KO
Crown/Rump Length (mm)	82.4 \pm 1.8	81.8 \pm 1.6	89.4 \pm 1.9	90.1 \pm 2.5
Body mass (g)	18.8 \pm 0.82	19.0 \pm 0.79	25.0 \pm 1.0	25.9 \pm 1.4
Loaded tibia length (mm)	17.4 \pm 0.19	17.4 \pm 0.18	18.0 \pm 0.16	17.9 \pm 0.13
Control tibia length (mm)	17.3 \pm 0.30	17.4 \pm 0.26	18.1 \pm 0.11	18.1 \pm 0.13
Right femur length (mm)	15.0 \pm 0.29	15.0 \pm 0.29	15.5 \pm 0.30	15.8 \pm 0.21*
Ovarian mass (mg)	154 \pm 47	168 \pm 48	N/A	N/A
Uterine mass (mg)	597 \pm 160	744 \pm 290	N/A	N/A

Supplementary Figure 1: Serum marker measurements in male and female LC and pOC-ER α KO mice. Female pOC-ER α KO mice had similar levels of osteocalcin, IGF-1, estrogen, and P1NP as LC, but TRAP5b serum levels were lower. Male pOC-ER α KO mice had decreased serum osteocalcin levels but similar IGF-1, P1NP, and TRAP5b levels to LC.

Supplementary Figure 2: Representative dynamic histomorphometry images from male and female LC and pOC-ER α KO mice. A) Two weeks of tibial loading increased MS, MAR, and BFR in female LC and pOC-ER α KO mice in the cancellous proximal tibia. Loading increased MAR more in pOC-ER α KO than LC mice. B) Loading increased Es.MAR, Es.BFR, Ps.MS, Ps.MAR, and Ps.BRF similarly in female pOC-ER α KO and LC mice at the tibial midshaft. Woven bone was present in all loaded limbs. C) Loading increased MS in the cancellous proximal tibia in both genotypes of male mice. D) Loading increased Es.MS, Ps.MS, Ps.MAR, in both genotypes of male mice at the tibial midshaft.

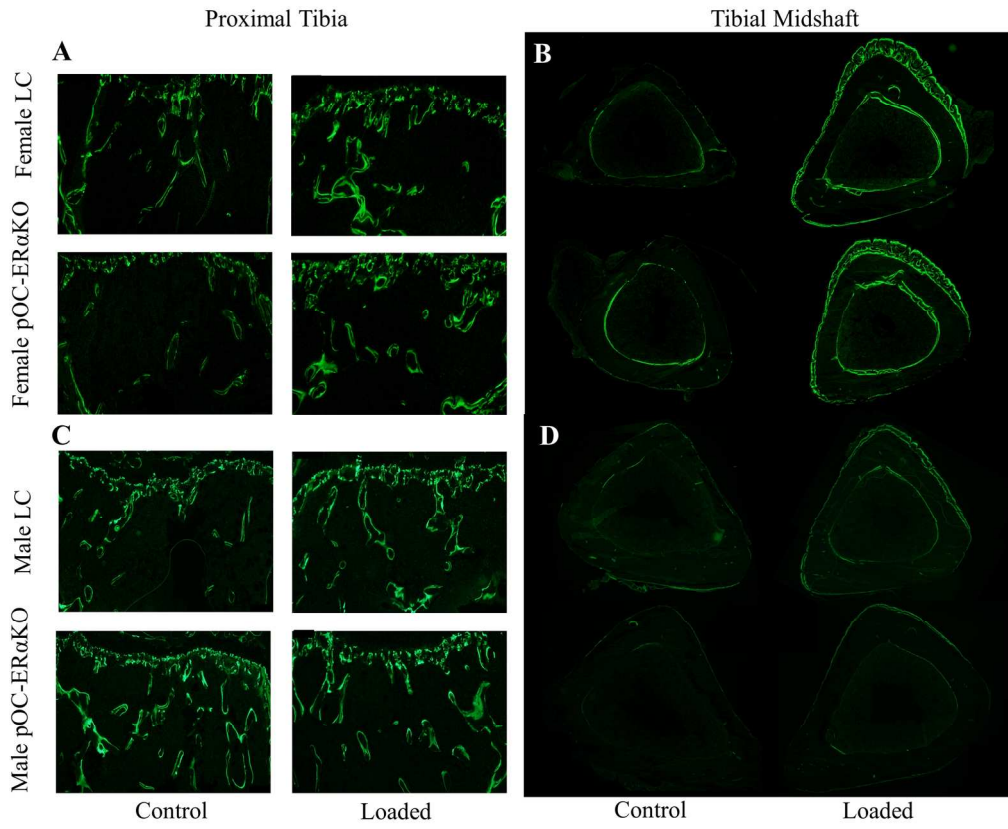


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