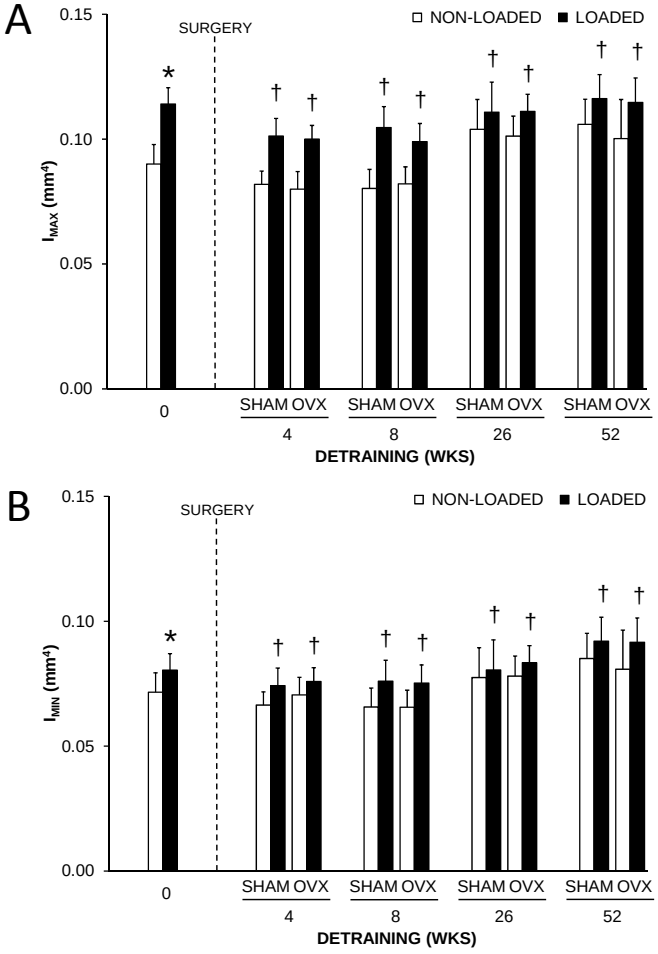
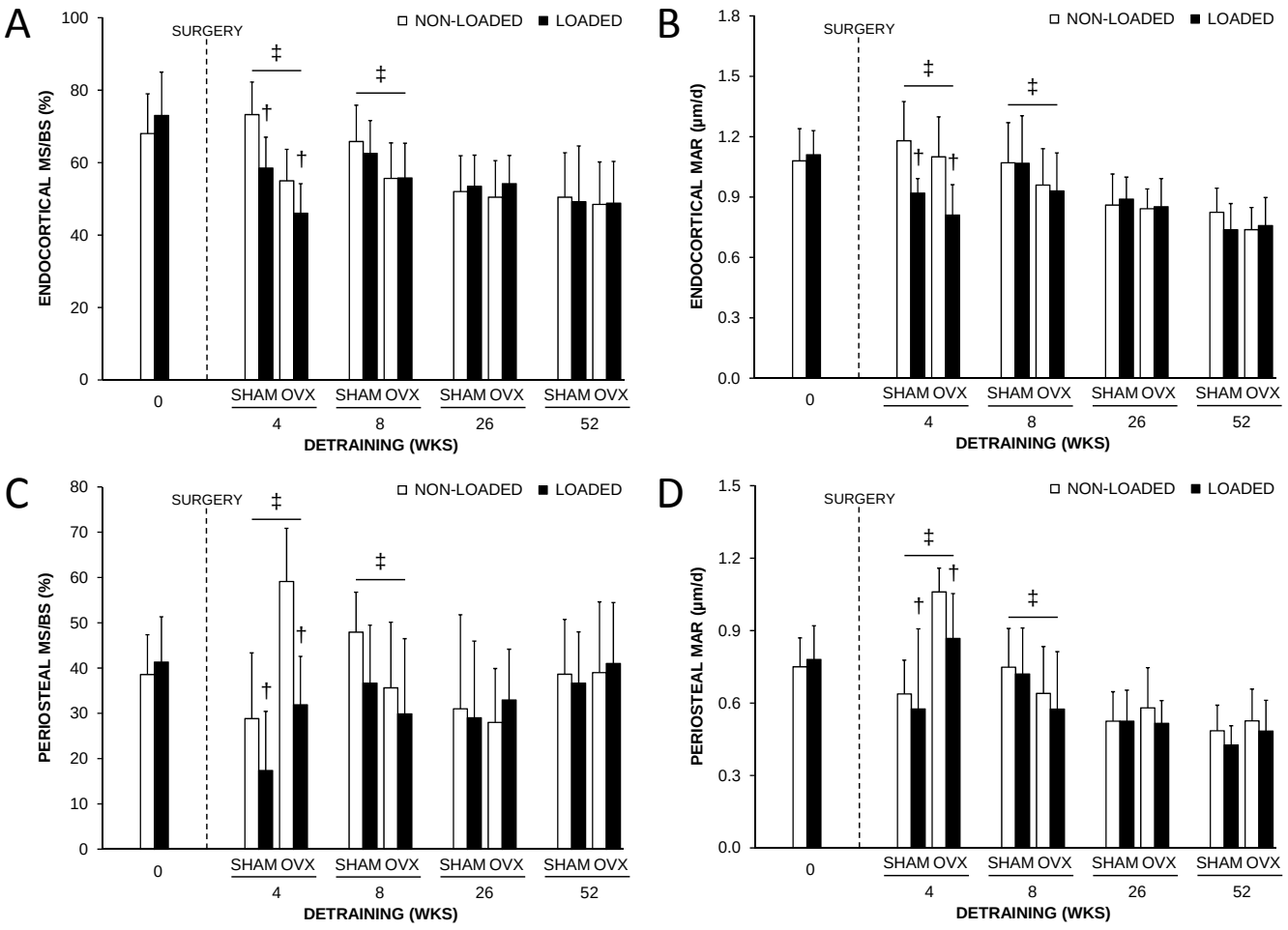
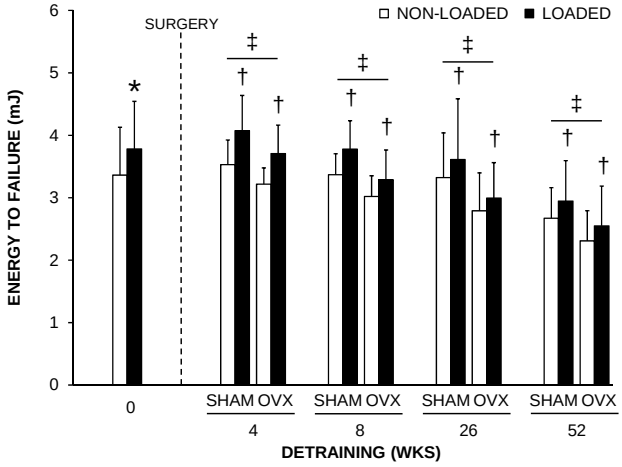


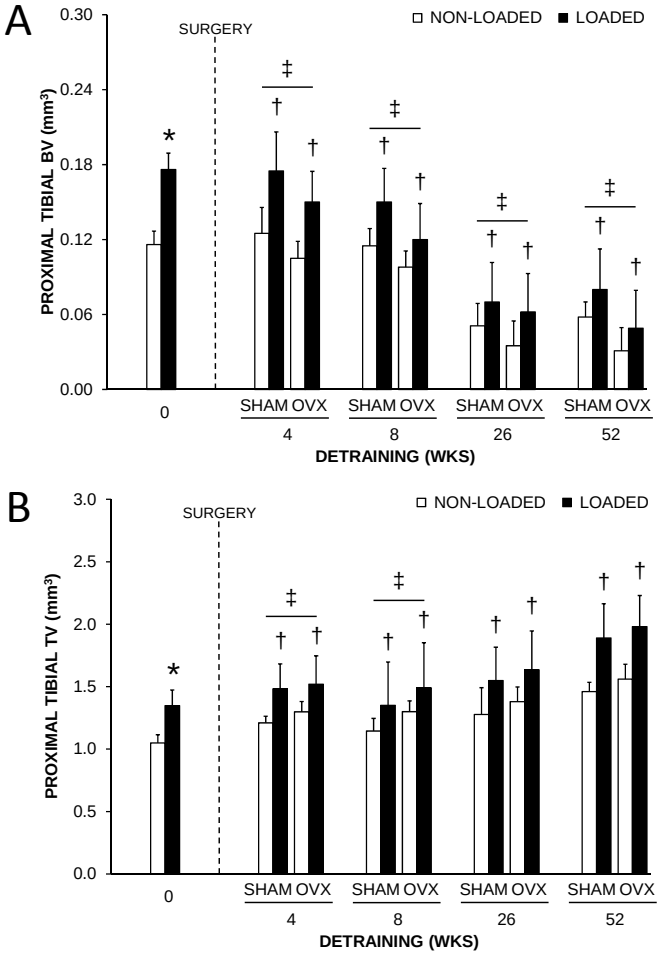
Supplemental figure 1. The effect of loading and surgery at select detraining time points on midshaft tibial: A) maximum (I_{MAX}) and B) minimum (I_{MIN}) second moments of area. Loading increased I_{MIN} and I_{MAX}, as assessed in the 0 wks detraining group (*$p < 0.05$). There were no statistical interactions between loading and surgery, or effect of surgery in any detraining time point group. Loaded tibias had more I_{MIN} and I_{MAX} in each detraining time point group than non-loaded tibias ($^{\dagger}p < 0.05$ for loading main effect). Data represent body mass corrected means ± SD.



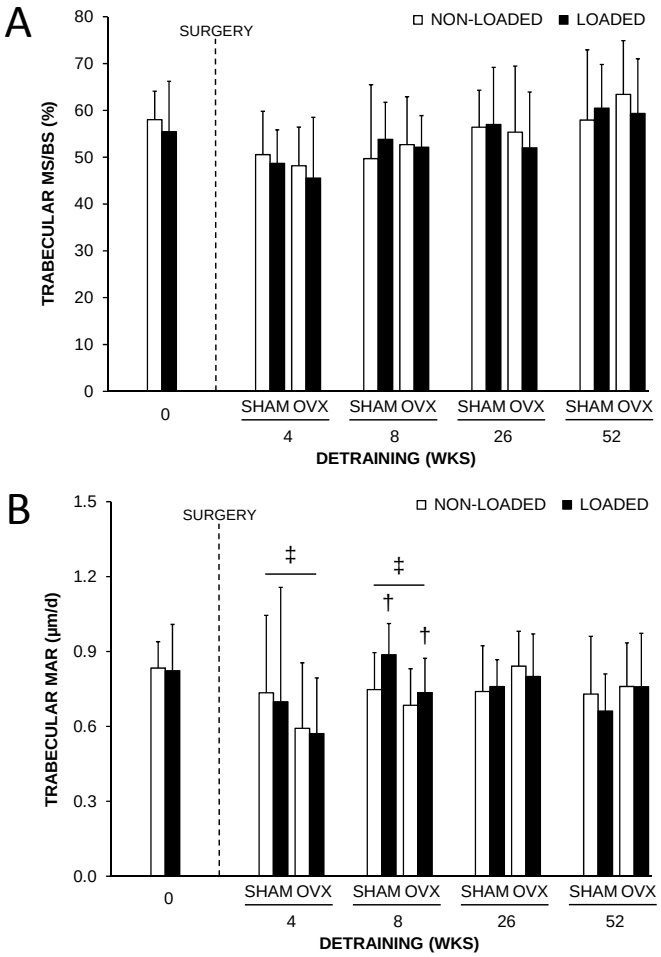
Supplemental figure 2. The effect of loading and surgery at select detraining time points on midshaft tibial endocortical A) mineralizing surface (MS/BS) and B) mineral apposition rate (MAR), and periosteal C) MS/BS and D) MAR. There were no statistical interactions between loading and surgery in any detraining time point group. Loaded tibias had less endocortical and periosteal MS/BS and MAR than non-loaded tibias in the 4 wks detraining group ($^{\dagger}p < 0.001$ for loading main effect). OVX animals had more periosteal and less endocortical MS/BS and MAR in the 4 wks detraining group, and less endocortical and periosteal BFR/BS in 8 wks detraining groups than SHAM animals ($^{\ddagger}p < 0.05$ for surgery main effect). Data represent means ± SD.



Supplemental figure 3. The effect of loading and surgery at select detraining time points on midshaft tibial energy to failure. Loading increased energy to failure, as assessed in the 0 wks detraining group (*$p < 0.05$). There were no statistical interactions between loading and surgery in any detraining time point group. Loaded tibias had greater energy to failure than non-loaded tibias in each detraining time point group ($^{\dagger}p < 0.05$ for loading main effect). OVX animals had less energy to failure than SHAM animals in each detraining time point group ($^{\ddagger}p < 0.05$ for surgery main effect). Data represent body mass corrected means ± SD.



Supplemental figure 4. The effect of loading and surgery at select detraining time points on proximal tibial: A) bone volume (BV) and B) tissue volume (TV). There were no statistical interactions between loading and surgery in any detraining time point group. Loaded tibias had more BV and TV at all time points (* and $^{\dagger}p < 0.05$ for loading main effect). OVX animals had less BV and more TV than SHAM animals in the 4 and 8 wks detraining groups ($^{\ddagger}p < 0.05$ for surgery main effect). Data represent means ± SD.



Supplemental figure 5. The effect of loading and surgery at select detraining time points on proximal tibial trabecular: A) mineralizing surface (MS/BS) and B) mineral apposition rate (MAR). There were no statistical interactions between loading and surgery in any detraining time point group. Loaded tibias had less MS/BS and greater MAR than non-loaded tibias in the 0 wks and 8 wks detraining groups, respectively (* and $^{\dagger}p < 0.05$ for loading main effect). OVX animals had less MAR than SHAM animals in the 4 and 8 wks detraining groups ($^{\ddagger}p < 0.05$ for surgery main effect). Data represent means ± SD.