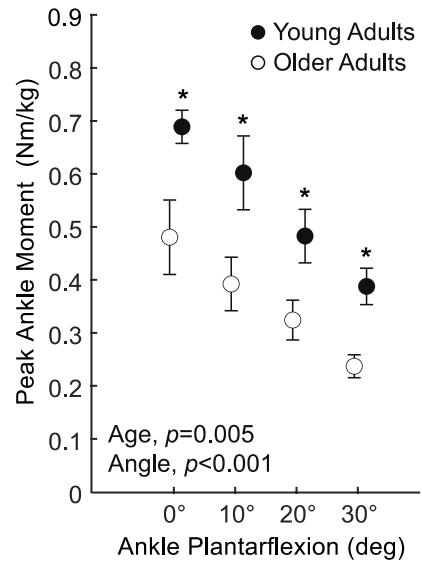


Supplementary Figure 1: We utilized a dual-probe ultrasound imaging approach to simultaneously assess medial gastrocnemius (GAS) and soleus (SOL) muscle length change and tissue displacement in their associated subtendons of the free Achilles tendon at 4 different ankle angles. (A) An open source MATLAB routine quantified time series of GAS and SOL fascicle lengths and pennation angles from cine B-mode images. (B) A custom 2-dimensional speckle tracking technique estimated GAS (blue) and SOL (red) subtendon tissue displacements.



Supplementary Figure 2: Group mean (standard error) peak ankle moment at each ankle angle (plantarflexion, positive) for young and older adults. Older adults are shifted to the right for clarity. Compared to young adults, older adults’ peak ankle moment was significantly lower at each ankle angle (*, p -values ≤ 0.024) and averaged 34% lower when pooled across all conditions (main effect, $p=0.005$).