



**Supporting Figure S1:** The temporal variation of the SR eigenvalues (negative, positive) and normal strain  $SR_{cc}$  in the fiber basis with isometric contraction for the pre- and post-suspension cohorts for three regions (proximal, middle, and distal). The values shown in this plot are the average over all subjects of all 7 slices for 3 ROIs (proximal, middle and distal) for the pre-and post-suspension subjects. The subscript  $cc$  for the normal strain  $SR_{cc}$  refers to the axis in the imaging plane perpendicular to the fiber. All values are scaled by 1000.