

Supplementary Information (Hayenga et al.)

Figure S1. Results similar to Figures 2-4 in the text, but for the case of normotension alone (i.e., tissue maintenance at a constant pressure of 96.4 mmHg) over 500 days for the stochastic agent based model (ABM) and the continuum based constrained mixture model (CMM) following parameter refinement via the genetic algorithm. Such simulations are important for assessing both “biological” and “numerical” stability. As it can be seen, the CMM exhibited both biological and numerical stability, which was expected because the constitutive relations and model parameters were based on prior results that showed the same (Valentin et al., 2009). In contrast, modest variations over time were exhibited by the ABM due to its inherent stochasticity, as seen here for results based on mean values from 5 simulations. Nevertheless, the ABM exhibited near overall biological and numerical stability as desired.

