Fascicle Blood Volume Calculation. The percent change in blood volume in a muscle fascicle is calculated during a contraction, Eq. S1, and stretch, Eq. S2.

\[
\% \Delta V_{\text{blood,ct}} = \frac{(1.1 \times 10^{-4} + 1.3 \times 10^{-4}) \text{mm}^3}{(7.9 \times 10^{-5} + 1.4 \times 10^{-4}) \text{mm}^3 + 23 \times \pi \times \left(\frac{6.5 \times 10^{-3} \text{mm}}{2}\right)^2 \times 1 \text{ mm}} \times 100\%.
\]  

[S1]

\[
\% \Delta V_{\text{blood,ct}} = \frac{(6.3 \times 10^{-5}) \text{mm}^3 + 23 \times \left[\pi \left(\frac{6.5 \times 10^{-3} \text{mm}}{2}\right)^2 - \pi \left(\frac{5.8 \times 10^{-3} \text{mm}}{2}\right)^2\right] \times 1 \text{ mm}}{(7.9 \times 10^{-5} + 1.4 \times 10^{-4}) \text{mm}^3 + 23 \times \pi \times \left(\frac{6.5 \times 10^{-3} \text{mm}}{2}\right)^2 \times 1 \text{ mm}} \times 100\%.
\]  

[S2]

Other Muscle Types. The spinotrapezius is a flat, broad muscle with straight, parallel fascicles. Muscles of this type typically create a small intramuscular pressure when they contract or are stretched. Wide, bulging muscles with curved fascicles generate higher intramuscular pressures when the muscle contracts or \(\% \Delta A_{\text{ct}} = [0.016 + 0.051] \times 100\%\) is stretched based on the Law of Laplace [1]. Further, curved fascicles may move inward as the muscle is stretched. It is not well known how the boundary effects produced at external borders of different muscle groups contribute to internal deformations, and thus to the fluid motions produced therein. It is difficult to speculate with much accuracy on effects produced by other muscle anatomies or curvatures at the macro-scale level. However, the purpose of our analysis was to evaluate the effects of blood flow on lymph formation without the complications of the intramuscular pressure or the movement of fascicles.