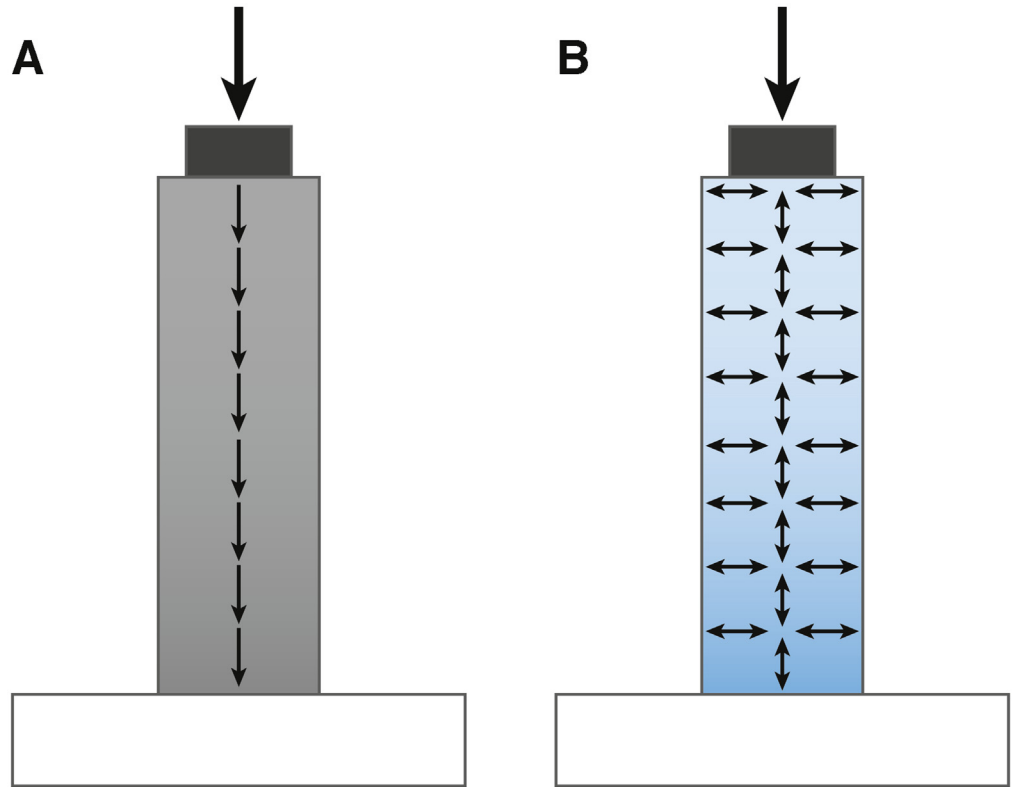


**Supplementary Figure 1.** Thermodynamic principles of hydrostatic and oncotic pressures. Intravascular and interstitial tissue spaces can be modeled as an idealized two-compartment system separated by a semipermeable membrane. The *left* side for each state describes a starting configuration and the *right* side depicts the spontaneous outcome. In state (1), both compartments can expand or contract at constant temperature and pressure (ie, an “open” system); differences in the chemical potential of water drive all of the fluid into side A. In state (2), the volume is instead constrained on both sides; fluid moves from side B into side A until a hydrostatic pressure difference arises equal to the osmotic pressure of the macromolecules in solution.



**Supplementary**  
**Figure 2.** Mode of force transmission differs in solids and fluids. (A) A force applied to a solid is transmitted vectorially at the point of contact. (B) Forces applied to fluids are instead transmitted hydraulically, ie, uniformly in all directions throughout the space occupied by the fluid.