Surface Tension

2 glass microscope slides

Water

Drop one drop of water on the surface of one slide and place the other slide on the top. Notice that you can glide the slides back and forth over each other but it is hard to pull them apart? This is surface tension.

This is another example of how the lungs are able to expand and inflate during inhalation. We know that there is a thin layer of pleural fluid between the outside of the lung and the inside of the chest cavity. This thin layer of fluid creates a negative pressure that allows the lungs to expand. The “force” that keeps you from pulling the slides apart is surface tension. This is essential for newborns after the amniotic fluid leaves their lungs. This is why preemies need a medication called, surfactant if they are born too early. Surfactant acts like lubrication and helps the surface of the lungs adhere to the pleural membrane. This surface tension is what allows lungs to expand by gliding along the pleural membrane.