

Mastery Series: Mechanics of Breathing

1. As we breathe in, intrapleural pressure changes from -4 to _____;
2. As we breathe in, the intrapulmonary pressure changes from _____ to -1.
3. A trauma victim may begin accumulating blood and air in the intrapleural space; this has the overall effect of reducing or eliminating the _____ pressure that must always be present in the intrapleural space. Labored breathing results as the patient must literally reinflate his alveoli with each breath.
4. The forces that keep the alveoli from collapsing are:
5. The forces that tempt the alveoli to collapse are:
6. In lung diseases, oftentimes elastic fibers are replaced with stiff collagen fibers as scar tissue accumulates. How does this affect the mechanics of breathing? How might the shape of the chest change over time from stiff lungs?
7. Muscles involved with inspiration are:
8. Muscles involved with expiration are:
9. What is a pneumothorax?

1. -7
2. +1
3. Negative
4. Surfactant; negative pressure in the pleural cavity at all times
5. Surface tension in moist alveolus; elastic fibers throughout the lung tissue
6. Requires muscular involvement to exhale (which is normally passive at rest). The chest may become “barrel-shaped” because of compensatory rib muscle development.
7. Diaphragm; big inhale recruits: external intercostals; sternocleidomastoid; scalenes (located on the front of the neck)
8. internal intercostals; abdominal muscles
9. collapsed lung—usually caused by accumulation of air or fluid in the intrapleural cavity that diminishes the negative intrapleural pressure