



Utah Department of
Environmental Quality

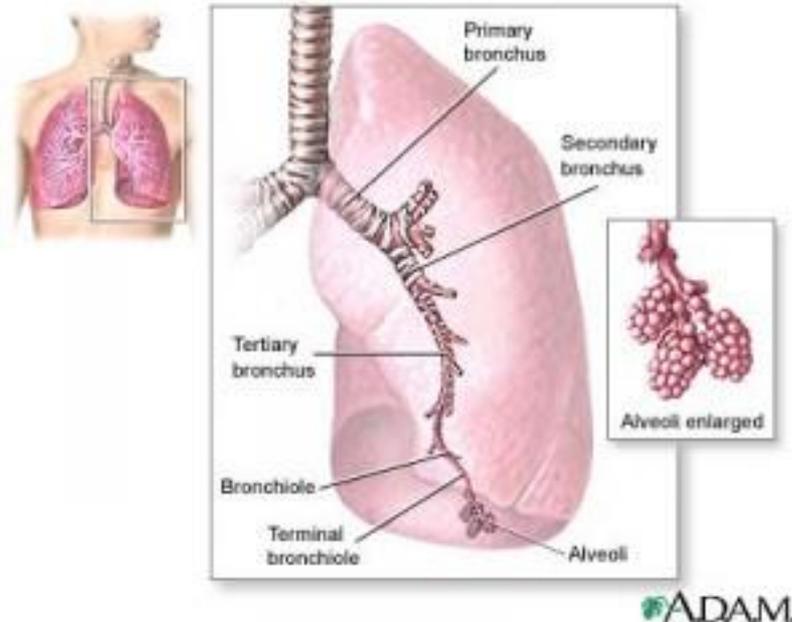
LUNG FLUID LINING: THE LUNG'S FIRST LINE OF DEFENSE

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Internal Lung Anatomy

- Internal airways are lined with fluid



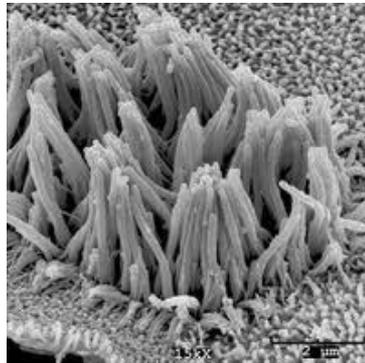
Lung Lining Fluid

- Likely the most important mechanism of our lung's defense system
 - Composed of:
 - Water
 - Antioxidants
 - Enzymes
 - Lipids
 - Proteins
- Distributed continuously throughout the respiratory tract



Lung Lining Fluid

- Its chemical makeup is different between the conducting airways and the alveoli (terminal air sacs)
 - Airways are lined with airway surface liquid (ASL)
 - Mucus gel-water solution that works along with the epithelial cilia to make the mucuciliary escalator



Defense Mechanism

- Fluid has antimicrobial properties
- Particles > 5 micrometers are trapped in the lining-fluid of the airways
- The high water content allows for the transfer of momentum from the beating cilia to the mucus “blanket” in the escalator system

