

Emergency and Critical Care



Global Campus for Excellent Education

ARDS (Acute Respiratory Distress Syndrome)



What is ARDS?

https://www.nhlbi.nih.gov/health-topics/ards

ARDS



What Is

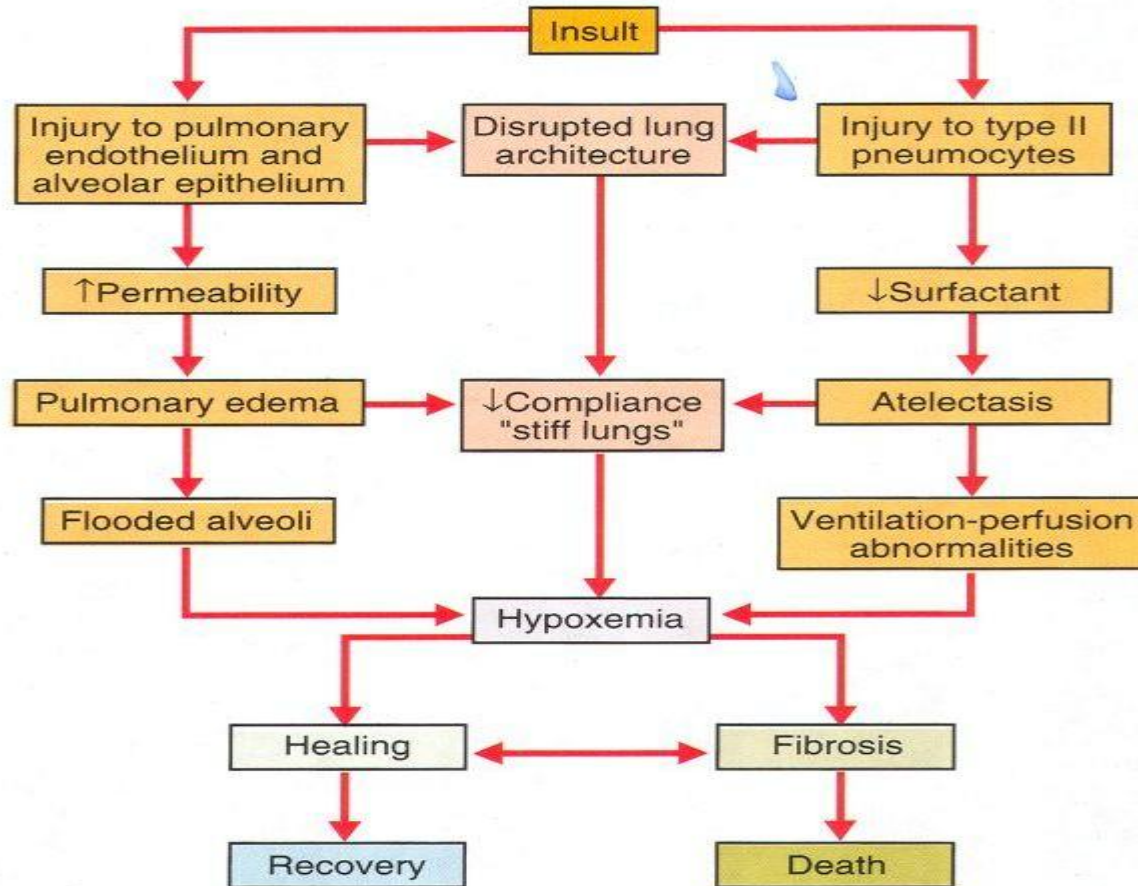
ARDS, or acute respiratory distress syndrome, is a lung condition that leads to low oxygen levels in the blood. ARDS can be life threatening because your body's organs need oxygen-rich blood to work well.

People who develop ARDS often are very ill with another disease or have major injuries. They might already be in the hospital when they develop ARDS.

- Definition
- Clinical Risk Factors
 - Direct
 - Indirect
- Pathophysiology



ARDS Pathophysiology



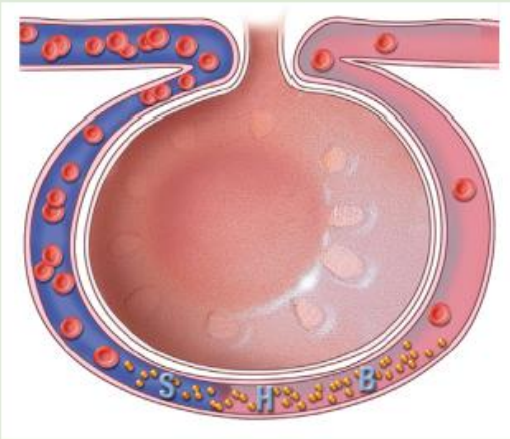
ARDS Pathophysiology (cont)

Exudative Phase

1

Phase

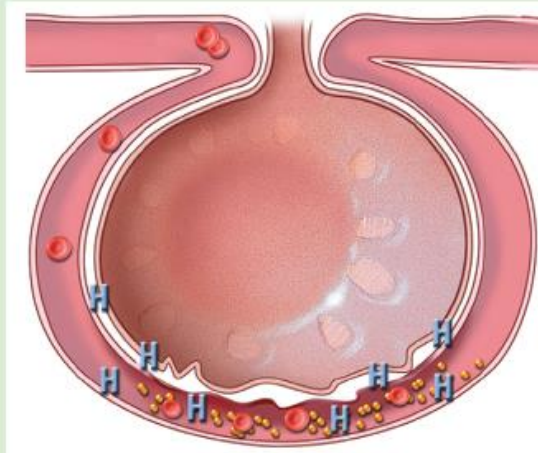
In *phase 1*, injury reduces normal blood flow to the lungs. Platelets aggregate and release histamine (H), serotonin (S), and bradykinin (B).



2

Phase

In *phase 2*, those substances—especially histamine—inflame and damage the alveolocapillary membrane, increasing capillary permeability. Fluids then shift into the interstitial space.

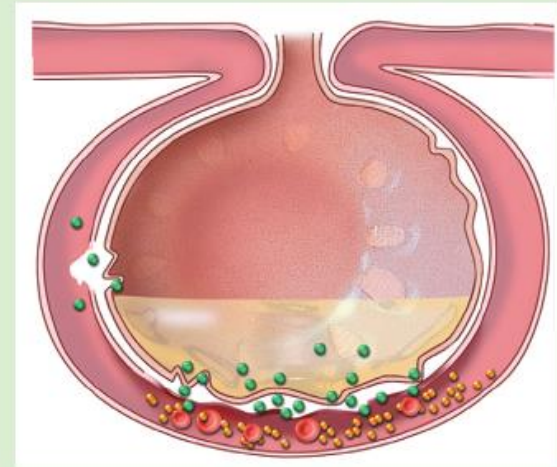


Proliferative Phase

3

Phase

In *phase 3*, as capillary permeability increases, proteins and fluids leak out, increasing interstitial osmotic pressure and causing pulmonary edema.

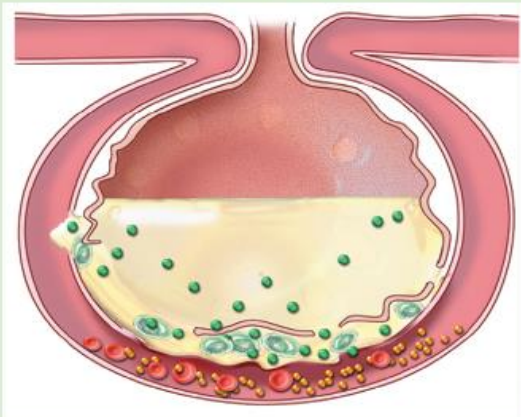


ARDS Pathophysiology (cont)

Proliferative Phase

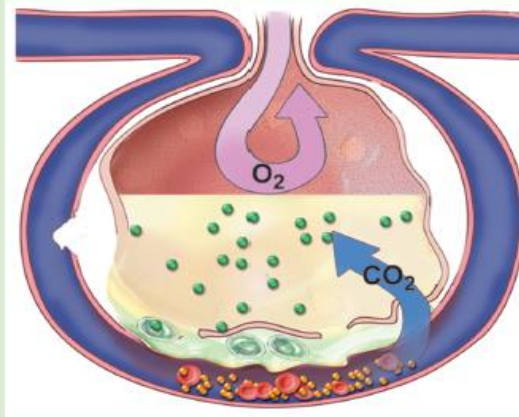
4 Phase

In *phase 4*, decreased blood flow and fluids in the alveoli damage surfactant and impair the cell's ability to produce more. As a result, alveoli collapse, impeding gas exchange and decreasing lung compliance.



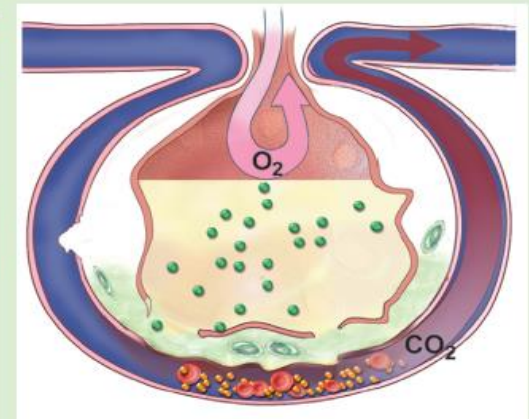
5 Phase

In *phase 5*, sufficient oxygen can't cross the alveolocapillary membrane, but carbon dioxide (CO_2) can and is lost with every exhalation. Oxygen (O_2) and CO_2 levels decrease in the blood.



6 Phase

In *phase 6*, pulmonary edema worsens, inflammation leads to fibrosis, and gas exchange is further impeded.

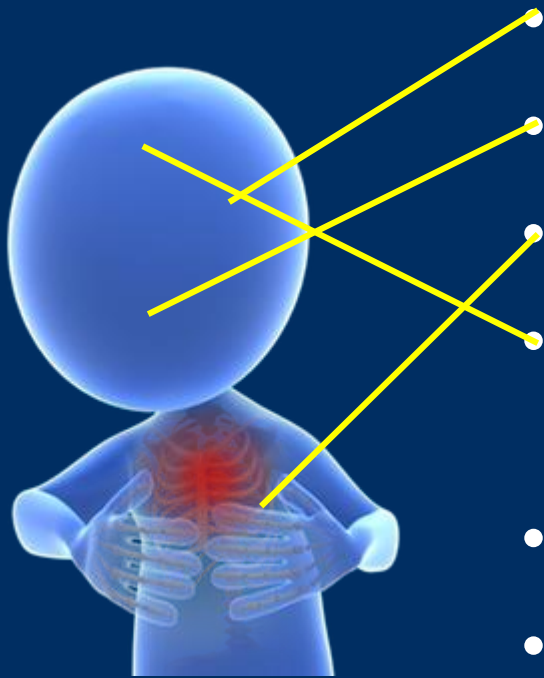


Fibrotic or Recovery Phase

3 Distinguishing Characteristics

- Refractory Hypoxemia
- Presence of pulmonary edema
- Decreased lung compliance

ARDS: Clinical Manifestations



- Respiratory Distress
- Dry Cough and fever
- Fine crackles
- Change in level of consciousness
- Chest X-ray “WHITE OUT”
- ABG’s



ARDS: Treatment



Endotracheal Intubation



Lung protective ventilation strategies



Antibiotics



Diuretic



Sedation



Nutrition



Prone positioning

ARDS: Nursing Care

Reverse the
initiating insult

Adequate
oxygenation

Avoid
preventable
complications

Decrease the
energy spent
on respiration

Prevent further
systemic insult

Encourage
coughing

Appropriate
repositioning

Prevent
pressure
breakdown

Monitor
closely

Treat anxiety

References

- Prescribed texts
- Blume, L., Byrum, D. (2009). Unraveling the mystery of ARDS. *Nursing Made Incredibly Easy*, Nov/Dec , 32-40.
- National Heart Lung and Blood Institute. (2012). What is ARDS. Retrieved from <http://www.nhlbi.nih.gov/health/health-topics/topics/ARDS/>
- Woodruff, D.W. (2006). Take these 6 easy steps to ABG analysis. *Nursing Made Incredibly Easy*, Jan/Feb, 4-7.