

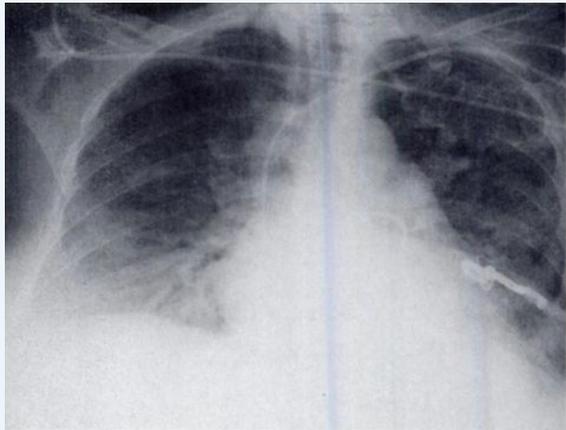
Acute Respiratory Distress Syndrome

Clinical Features

- Progressive dyspnea
- Worsening hypoxemia
- Bilateral infiltrates on chest radiographs
- Acute onset (<7 days) of inciting event

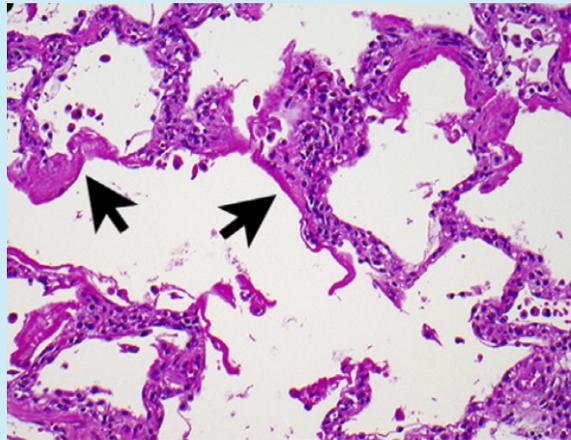
CAUSES

- **Direct:** Pneumonia, Aspiration
- **Indirect:** Sepsis, Trauma



Pathophysiology

- Alveolar injury with diffuse inflammatory response
- Increased pulmonary vascular permeability with excess interstitial and alveolar fluid
- Impaired gas exchange, decreased lung compliance, and increased pulmonary arterial pressure



Diffuse alveolar damage
(arrows represent hyaline membranes)

Diagnosis

A syndrome, not a specific disease. Most recent definition was created by a panel of experts in 2012:

BERLIN DEFINITION

- **Onset within 1 week** of insult or new/worsening respiratory symptoms
- **Respiratory failure** unexplained by cardiac function or volume overload
- **Bilateral CXR opacities** unexplained by other etiology (eg, effusion, collapse, nodules)
- **Hypoxemia**

	PaO ₂ /Fio ₂
Mild ARDS	200-300
Moderate ARDS	100-200
Severe ARDS	<100

Treatment

In addition to treatment of the inciting etiology, consider the following in a stepwise fashion:

- **Ventilation strategies:**
 - Target tidal volume of 4-8 mL/kg ideal body weight
 - Plateau pressures <30 cm H₂O (or transpulmonary pressure < 20 cm H₂O)
 - Conservative oxygen strategy (target PaO₂ 55-80)
 - PEEP: Consider a high PEEP strategy in moderate-severe ARDS
- Prone positioning
- Neuromuscular blockade
- Consider transfer to ECMO center if symptoms do not continue to improve.