

SEVERITY: OXYGENATION ^a	ONSET	CHEST RADIOGRAPH	ABSENCE OF LEFT ATRIAL HYPERTENSION
<i>Mild:</i> 200 mmHg < Pao ₂ /Fio ₂ ≤ 300 mmHg <i>Moderate:</i> 100 mmHg < Pao ₂ /Fio ₂ ≤ 200 mmHg <i>Severe:</i> Pao ₂ /Fio ₂ ≤ 100 mmHg	Acute: Within 1 week of a clinical insult or new or worsening respiratory symptoms	Bilateral opacities consistent with pulmonary edema not fully explained by effusions, lobar/lung collapse, or nodules	Hydrostatic edema is not the primary cause of respiratory failure. If no ARDS risk factor is present, then some objective evaluation is required (e.g., echocardiography) to rule out hydrostatic edema

^aAs assessed on at least 5 cm H₂O of positive end expiratory pressure (PEEP).

Abbreviations: ARDS, acute respiratory distress syndrome; Fio₂, inspired O₂ percentage; Pao₂, arterial partial pressure of O₂; PCWP, pulmonary capillary wedge pressure.

The annual incidence of ARDS prior to the COVID-19 pandemic was estimated to be as high as 60 cases/100,000 population. Approximately 10% of all intensive care unit (ICU) admissions involve patients with ARDS. This chapter will focus on non-COVID-19-ARDS. Please see **Chap. 199** for more information on COVID.

■ ETIOLOGY

While many medical and surgical illnesses have been associated with the development of ARDS, most cases (>80%) are caused by a relatively small number of clinical disorders: pneumonia and sepsis (~40–60%), followed in incidence by aspiration of gastric contents, trauma, multiple transfusions, and drug overdose. Among patients with trauma, the most frequently reported surgical conditions in ARDS are pulmonary contusion, multiple bone fractures, and chest wall trauma/flail chest, whereas head trauma, near-drowning, toxic inhalation, and burns are rare causes. The risks of developing ARDS are increased in patients with more than one predisposing medical or surgical condition.

Several other clinical variables have been associated with the development of ARDS. These include older age, chronic alcohol abuse, pancreatitis, pneumonia and sepsis (40–60%), [including pandemic COVID pneumonia], and severity of critical illness. Trauma patients with an Acute Physiology and Chronic Health Evaluation (APACHE) II score ≥16 (**Chap. 300**) have a 2.5-fold increased risk of developing ARDS.

■ CLINICAL COURSE AND PATHOPHYSIOLOGY

The natural history of ARDS is marked by three phases—exudative, proliferative, and fibrotic—that each have characteristic clinical and pathologic features (**Fig. 301-1**).