

# WHAT IS ACUTE RESPIRATORY DISTRESS SYNDROME (ARDS)?



## Diagnosing ARDS

To diagnose ARDS, a doctor will look at the patient's medical history and do a physical exam that includes listening to the lungs for any abnormal breathing sounds and checking for signs of any difficulty breathing. They will also check blood pressure, oxygen levels, and heart rate, and check the body for any signs of swelling. They may also order blood tests, imaging tests such as a chest X-ray, or do a lung biopsy if other tests do not confirm a diagnosis.

Symptoms usually develop 24 to 48 hours after the start of the root injury or illness.

The first symptom is usually **difficulty breathing**. Other symptoms include:

- Shortness of breath
- Low blood oxygen
- Rapid breathing
- Clicking, bubbling, or rattling sounds in the lungs when breathing
- Blue fingernails, skin, or lips
- Extreme tiredness
- Chest pain

Learn the facts about acute respiratory distress syndrome (ARDS), its signs and symptoms, and how it is treated.

## Basic Facts About ARDS



**ARDS is a serious condition in which fluid and pus build up in the air sacs of the lungs.** This prevents enough oxygen from passing into the lungs and bloodstream.



**ARDS usually occurs in people who are already ill due to another disease or a major injury.** The most common underlying risk factor of ARDS is infection, like COVID-19, pneumonia, or sepsis. Other factors that increase your risk include fracture of multiple bones and inhaling chemical fumes or water during a near drowning.



**Smoking, heavy alcohol use, and exposure to air pollution** all make people more likely to develop ARDS.



**ARDS may take a few days to develop, or it can get worse quickly.**



**ARDS often occurs along with malfunction of other organs, such as the heart, liver, or kidneys.**



## WHAT IS ACUTE RESPIRATORY DISTRESS SYNDROME (ARDS)?



### Managing ARDS

Treatment for ARDS may help prevent serious complications like organ damage or organ failure. ARDS often needs to be treated in the Intensive Care Unit (ICU). The main treatment is supplying oxygen to help with breathing and treating the underlying cause. This may involve medicines to treat infections, reduce inflammation, and remove fluid from the lungs.

For patients with ARDS with milder symptoms, doctors supply oxygen with breathing devices. These devices keep the airways open by blowing air through a mask that fits over the nose and mouth. Patients with more severe symptoms need a mechanical ventilator to breathe. A ventilator pushes air in and out of the lungs when patients can't breathe on their own.

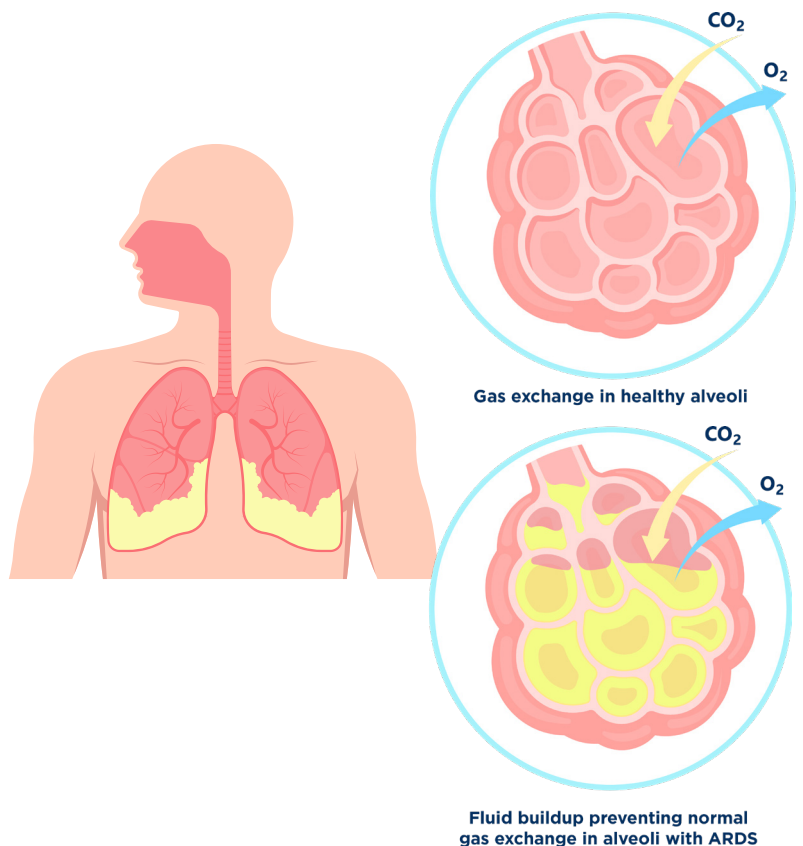
About one third of people with ARDS die of the disease. Those who live often get back most of their lung function, but recovery can take weeks or months. Many people who survive ARDS have permanent (usually mild) lung damage. Many also have memory loss, or other quality-of-life problems after they recover.

### How ARDS Affects Breathing

Damage to the lung's air sacs, or alveoli, causes fluid and pus to build up. This can prevent a process called gas exchange, in which oxygen ( $O_2$ ) enters the blood in exchange for a waste gas called carbon dioxide ( $CO_2$ ). This damage can also lead to the breakdown of a substance called surfactant. Surfactant is a foamy substance made by your body that keeps your air sacs fully open so you can breathe.

The buildup of fluid and the breakdown of surfactant prevent the lungs from properly filling with air. Eventually the lung tissue can also become scarred and stiff.

The images below compare healthy alveoli (top) to the alveoli of a person with ARDS (bottom). With ARDS, fluid fills the alveoli and prevents normal gas exchange.



For more information about lung health, visit [www.nhlbi.nih.gov/BreatheBetter](http://www.nhlbi.nih.gov/BreatheBetter)  
For more information about ARDS, visit [www.nhlbi.nih.gov/health/ards](http://www.nhlbi.nih.gov/health/ards)