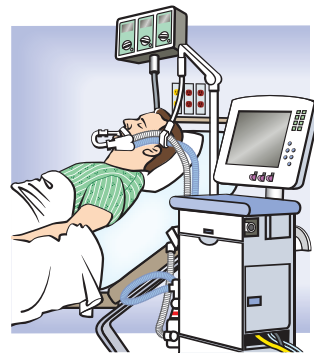


# What is Acute Respiratory Distress Syndrome?

Acute Respiratory Distress Syndrome (ARDS) is a life-threatening illness in which the lungs are severely inflamed. Swelling throughout the lungs cause tiny blood vessels to leak fluid and the air sacs (alveoli) collapse or fill with fluid, preventing the lungs from working well. Patients with ARDS have problems getting enough oxygen into their blood, and getting rid of carbon dioxide, so they must be given extra oxygen and will usually need a ventilator to breathe. Despite intensive treatment, about 40% of people with ARDS die from the disease.



## Who gets ARDS?

It is estimated that ARDS affects about 150,000 Americans each year. Although ARDS often affects people who are being treated for another serious illness, it can occur in many situations. A person can develop ARDS even if he or she has not had lung disease or a lung problem in the past.

## What causes ARDS?

The causes of ARDS are not well understood. Either direct or indirect injuries can cause ARDS. Direct injuries include: pneumonia, inhaling stomach contents (aspiration), breathing in harmful fumes or smoke, and injury to the chest that causes bruising of the lungs. Indirect injuries include: severe and widespread bacterial infection in the body (sepsis), severe injury to the body that causes low blood pressure, bleeding that requires blood transfusions, and inflammation of the pancreas (pancreatitis).

## What are the symptoms of ARDS?

Common symptoms include: shortness of breath, cough (often with white or pink frothy sputum), fatigue, fever, or abdominal pain (in pancreatitis).

## How is ARDS diagnosed?

There are a number of tests the healthcare team may do to see if a person has ARDS, including chest X-rays, blood tests, and examination of the blood or sputum (phlegm) to determine if infection is present.

It can be difficult to diagnose ARDS in people who have underlying medical problems that have similar symptoms. Pneumonia can share many of the same symptoms as ARDS and may progress to ARDS (See ATS fact sheet on Pneumonia at [www.thoracic.org/patients](http://www.thoracic.org/patients)).

## How is ARDS treated?

Currently, there is no specific treatment for ARDS. Treatment consists of two goals: 1) treat any medical problem that led to the lung injury, and 2) support the person's breathing (usually with a ventilator) until the lungs heal. Most people with ARDS are treated in the intensive care unit (ICU) or critical care unit (CCU) of a hospital.

Therapies commonly used for ARDS include:

- Breathing support from a mechanical ventilator combined with oxygen therapy (See ATS fact sheets on Mechanical Ventilation and Oxygen Therapy at [www.thoracic.org/patients](http://www.thoracic.org/patients)).
- Medicines to keep the person calm and comfortable while on the ventilator so that they can rest and recover. Sometimes medicine is used to temporarily relax the person's breathing muscles. This allows the ventilator to deliver the optimal amount of oxygen and air into the lungs.
- Antibiotics to treat bacterial infections, vasopressors to maintain blood pressure, diuretics to get rid of excess fluid, or blood thinners to prevent blood clots.
- Prone positioning, during which the patient may be placed face-down for periods of time to help the lungs work better.
- A temporary feeding tube placed through the nose or mouth into the stomach or small intestines to provide nutrition.
- Tracheostomy, a surgical opening in the neck in order to provide prolonged support from the ventilator (See ATS fact sheets on Tracheostomy at [www.thoracic.org/patients](http://www.thoracic.org/patients)).

### What is an ICU and what can I expect to see in the unit?

Intensive care units (ICU) are areas in the hospital where the most seriously ill patients are cared for by a specially trained healthcare team. The team includes doctors, nurses, respiratory therapists, nutritionists, physical therapists, pharmacists, psychologists, social workers, and chaplains. The ICU team works together closely to provide the best possible care. Patients in the ICU are often connected to a variety of machines, monitors, and tubes, and while it can be overwhelming to see so many pieces of equipment, each item does its job to help the person recover.

### What complications may occur with ARDS?

- Collapse of part or all of one or both lungs (pneumothorax) may occur due to ARDS or use of the mechanical ventilator. To re-expand the lung, a chest tube (thoracostomy tube) may need to be inserted (See ATS fact sheet on Chest Tube Thoracostomy at [www.thoracic.org/patients](http://www.thoracic.org/patients)).
- Infections can develop that will need to be treated with antibiotics.
- Change in patient's thinking, typically confusion (called ICU delirium). This may occur due to variety of factors including side effects from medications, lack of sleep, pain, infections, or lack of oxygen being delivered to the body. This usually improves or resolves with time as the person gets better.
- Damage to major organs (kidney, heart, liver, brain, blood) may occur due to effects of severe infections or lack of oxygen being delivered throughout the body. Sometimes even with intensive care and use of a ventilator, the lungs are too damaged to deliver enough oxygen. Damage to any of these major organs can be very serious and require additional treatment. Having many organs functioning poorly results in a greater risk of death.

### Is ARDS fatal?

ARDS is a serious, sometimes fatal medical problem that can also be very unpredictable. Some people recover within a short period of time, while others may not recover for weeks or months. Some people have no complications at all and others seem to develop many complications. Some people with ARDS die quickly, while others die after a prolonged illness. The ups and downs of this critical illness may seem like an "emotional rollercoaster" for patients, families and friends. Yet, many people do survive. It is important for family and friends to remain hopeful, and seek guidance about how they can help promote healing. It is also important that family members take care of themselves to avoid getting too tired or worn down. Talking with the medical team to understand what is happening

and what might be expected day to day may be helpful.

After leaving the hospital, the ARDS survivors may need help while recovering at home though the amount of help needed will vary. They may need oxygen (temporarily or permanently) or physical or occupational therapy. They may also continue to experience the following problems, either temporarily or permanently: shortness of breath, cough, phlegm or sputum production from the lungs, hoarseness, lack of energy and loss of stamina, muscle weakness, anxiety, depression of post-traumatic stress disorder (PTSD).

A person recovering from ARDS will need check-ups with his or her healthcare provider, who will monitor his/her improvement, and check his/her lung function on a regular basis. The healthcare provider may also refer the person to a pulmonary specialist or a pulmonary rehabilitation program to help him or her regain strength and stamina (See ATS fact sheet on Pulmonary Rehabilitation at [www.thoracic.org/patients](http://www.thoracic.org/patients)).

Source: Manthous, C., Tobin, MJ. A Primer on Critical Care for Patients and Their Families. 1st issued in 2001; 2017-2018 update to be posted on [www.thoracic.org/patients](http://www.thoracic.org/patients)

**Authors:** Martin Tobin, MD; Constantine Manthous, MD

**Reviewers:** Catherine Chen, MD, Marianna Sockrider, MD, DrPH

## Rx Key Points

- ✓ ARDS is a serious life threatening problem that requires intensive care.
- ✓ Injury to the lungs may be corrected quickly or require weeks to months of treatment.
- ✓ Family members and friends of a person with ARDS generally have many questions. Write down your questions and talk regularly with the healthcare team.
- ✓ Support your loved one by learning what you can do to promote his or her recovery.

Doctor's Office Telephone:

### Resources:

**ARDS Foundation: Facts about ARDS**  
[www.ardsusa.org/ptintfacts.htm](http://www.ardsusa.org/ptintfacts.htm)

**ARDS Support Center: Understanding ARDS**  
[www.ards.org/learnaboutards/](http://www.ards.org/learnaboutards/)

**NHLBI: ARDS**  
[www.nlm.nih.gov/health/dci/Diseases/Ards/](http://www.nlm.nih.gov/health/dci/Diseases/Ards/)

This information is a public service of the American Thoracic Society. The content is for educational purposes only. It should not be used as a substitute for the medical advice of one's healthcare provider.

