* **Atelectasis**

**Definition**

Atelectasis is when the airways or air sacs in the lungs collapse or do not fully expand. Atelectasis is usually reversible. However, without medical care, it can lead to potentially fatal complications.

**Types**

1. Nonobstructive

Types of nonobstructive atelectasis include:

* **Compression:** Due to increased pressure on the lungs.
* **Adhesive:** Caused by dysfunction or deficiency of pulmonary surfactant. This is a soap-like substance that creates surface tension in the air sacs, helping them stay open.
* **Cicatrization:** Occurs due to scarring, which causes the lungs to shrink.
* **Relaxation:** The loss of contact between the membranes connecting to the chest wall, called the parietal pleura, and the membranes covering the lungs, known as the visceral pleura.
* **Replacement atelectasis:** Occurs when tumors fill or replace the air sacs.

### **Obstructive**

Obstructive atelectasis is also called resorptive atelectasis.

An obstruction triggers a partial or complete lack of ventilation to the impacted area, though gas uptake into the blood still occurs.

When all of the gas is absorbed, the air sacs eventually collapse as the obstruction prevents more gas from entering.

### Postoperative

Postoperative atelectasis usually develops within [72 hoursTrusted Source](https://www.ncbi.nlm.nih.gov/books/NBK545316/) of receiving general anesthesia because of altered gas exchange during sedation.

### Rounded

Rounded atelectasis is less common than other forms.

It occurs due to the folding of the lung tissue to the membranes covering the lungs and connecting them to the chest wall, known as the external pleura.

**Causes**

The potential causes of atelectasis depend on whether it is a nonobstructive or obstructive type.

* Nonobstructive

Causes of nonobstructive atelectasis include

Surgery

Sedating medications for surgery, such as general anesthetic, change the way the lungs work, as well as the flow of gas exchange and ventilation. This can cause lung tissues or airways to collapse.

Certain types of surgeries may also make it more difficult or painful to breathe deeply. This interferes with gas exchange and ventilation. About 90%Trusted Source of people who are given general anesthesia develop atelectasis.

Pleural effusion

Pleural effusion occurs when fluid accumulates between the lungs’ inner and outer membranes, which can cause a partial or total collapse. This condition is commonly causedTrusted Source by acquiring an infection, inflammatory diseases, and malignant (cancerous) tumors.

Lung damage

Lung damage or scarring can cause the lungs to shrink or become unable to expand fully. Conditions, such as tuberculosis, fibrosis, and other chronic destructive lung conditions, often lead to lung damage.

Chest tumors

Either cancerous or benign (non-cancerous) tumors can put pressure on airways and lung tissues, potentially causing them to collapse.

Surfactant conditions

A deficiency or dysfunction can reduce the surface tension in the air sacs, causing them to collapse. This is often due to conditions that arise from premature birth, including respiratory distress syndrome and acute respiratory distress syndrome.

Airways or lung tissue defects

Abnormalities in airways or lung tissues can interfere with gas exchange, ventilation, surface tension, and how the lungs connect to the chest wall or fit within the chest cavity.

Pleurisy

Pleurisy occurs when the lung pleura become inflamed, rough, and sticky. They rub against one another instead of smoothly gliding during inhalation and exhalation.

This condition may occur due to inflammatory diseases, infection, tumors, or other conditions known to cause inflammation.

Obstructive

Obstructive types of atelectasis occur when an object or abnormal growth physically blocks an airway or increases pressure on lung tissues or airways

Common causes of obstructive atelectasis include:

Inhaling a foreign object or getting one lodged in the airways or lung tissues

Tumors in the airways or lung tissues

Growths or objects in lung tissues and airways

Mucus buildup that causes a so-called mucus plug to block the airways

**Symptoms**

If a small portion of the lung or airways become affected, atelectasis may not cause any obvious symptoms.

However, when the condition impacts a significant portion of the lung or airways, common symptoms of atelectasis include:

Shallow breathing

Coughing

Wheezing or trouble breathing

Fever

Reduced or absent breathing sounds

Crackling when breathing

Excess mucus or sputum

Reduced chest expansion during inhalation

**Diagnosis**

A doctor will normally diagnose atelectasis by asking someone about their symptoms, underlying conditions, medical history, and by performing a physical exam.

A doctor will also use the results from a chest X-ray or other imaging of the chest, such as computed tomography or ultrasound scan.

They may also diagnose the condition using bronchoscopy. This involves placing a small tube with a camera and light through the windpipe, bronchi, and bronchioles to see inside the lung airways

**Medical management**

* Bronchodilator s
* Chest physiotherapy

**Surgical manegement**

suctioning mucus or by bronchoscopy

**Nursing manegement**

Performing deep-breathing exercises (incentive spirometry) and using a device to assist with deep coughing may help remove secretions and increase lung volume.

Positioning your body so that your head is lower than your chest (postural drainage). …

Tapping on your chest over the collapsed area to loosen mucus.