

# Pneumothorax

The pleura are membranes that line the lungs and the inside of the chest, creating a smooth surface for the lungs to move on while breathing. Pneumothorax is a condition in which a pocket of air gets in between the two layers of the pleura and the lung collapses.

Usually the air pressure between the pleura is lower than the pressure inside the lungs. If air gets inside this space, the pressure between the pleura becomes greater than the pressure in the lungs. This causes the lungs to collapse either completely or partly. Partial or complete lung collapse causes immediate, severe shortness of breath.

## Symptoms

Signs that pneumothorax is present will depend on how much air is between the pleura, how much of the lung collapses and how well the lungs were working before the pneumothorax occurred. Symptoms can range from a little shortness of breath or chest pain to severe shortness of breath, shock and potentially fatal cardiac arrest. Most often, sharp chest pain and shortness of breath and occasionally a dry, hacking cough begin suddenly. Pain may also be felt in the shoulder, neck or abdomen. If the pneumothorax developed slowly, the symptoms are usually less severe. Symptoms normally subside as the body adapts to the collapse of the lung, and the lung slowly begins to reinflate as it absorbs air back from the space between the pleura

## Causes and Risk Factors

A pneumothorax may occur for no apparent reason. Sometimes it occurs because a rupture develops in a small, weakened area of the lung that leaks air into the pleura, most often in older people who have emphysema. It can also be associated with Langerhans cell granulomatosis, Sarcoidosis, lung abscess, Tuberculosis and pneumocystis pneumonia.

Sometimes pneumothorax occurs during diving or high-altitude flying, probably as a result of air pressure changes in the lungs. A pneumothorax may follow an injury or a medical procedure allows air to get into the pleural space. Tall men who are younger than 40 are most at risk for developing a pneumothorax.

## Diagnosis

To diagnose a pneumothorax, physicians perform a physical examination and listen for abnormal breathing sounds using a stethoscope. A chest X-ray can reveal the air pocket and the collapsed lung outlined by the thin inner pleural layer. It can show if the trachea (the large airway at the front of the neck) is being pushed to one side because of a collapsed lung.

## Treatment

A small pneumothorax that develops without any apparent cause usually does not require treatment. There are no serious breathing problems, and the lung absorbs the air again in two to three days.

If the pneumothorax is larger, it may take two to four weeks to absorb the air. In this case, the pneumothorax is usually removed by inserting a tube into the lung. The chest tube goes through an incision in the chest wall and is connected to a water-sealed drainage system or a one-way valve that allows the air to exit without allowing any air to get back in. A suction pump may have to be attached to the chest tube if air keeps leaking in from an abnormal connection (fistula) between an airway and the pleural space.

Surgery may be necessary, often using a thoracoscope inserted through the chest wall and into the pleural space (video-assisted thoracoscopic surgery - VATS). If a person has recurring pneumothorax or is at high risk (divers and airline pilots, for example), surgery may be done the first time a pneumothorax happens. Usually the surgery repairs the leaking areas of the lung and firmly attaches the inner layer of pleura to the outer layer.

In cases where having surgery could be dangerous due to underlying lung disease, the leak may be sealed by filling the space with a talc mixture or giving the drug doxycycline through a chest tube that is draining air from the space

### **Contact Us**

For more information/question or comment about Pneumothorax  
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