# Conditions of pneumothorax and hemothorax in the pleural cavity.

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## Abstract

**Pleura are a serous membrane that folds back on itself to form a two-layered membranous pleural sac. The outer layer is called the parietal pleura and attaches to the chest wall. The inner layer is called the visceral pleura and covers the lungs, blood vessels, nerves and bronchi. In humans, the left and right lungs are completely separated by the mediastinum and there is no communication between their pleural cavities. Therefore, in cases of a unilateral pneumothorax, the contralateral lung will remain functioning normally unless there is a tension pneumothorax, which may shift the mediastinum and the trachea, kink the great vessels and eventually collapse the contralateral cardiopulmonary circulation.**

**Keywords**: Pleura, Visceral pleura, Pneumothorax, Hemothorax, Inflammation.

## Introduction

The visceral pleura receive its blood supply from the parenchymal capillaries of the underlying lung, which have input from both the pulmonary and the bronchial circulation [1]. The parietal pleura receives its blood supply from whatever structures underlying it, which can be branched from the aorta (intercostal, superior phrenic and inferior phrenic arteries), the internal thoracic (pericardiacophrenic, anterior intercostal and musculophrenic branches), or their anastomosis. The visceral pleurae are innervated by splanchnic nerves from the pulmonary plexus, which also innervates the lungs and bronchi. The parietal pleurae however, like their blood supplies, receive nerve supplies from different sources. The costal pleurae (including the portion that bulges above the thoracic inlet) and the periphery of the diaphragmatic pleurae are innervated by the intercostal nerves from the enclosing rib cage, which branches off from the T1-T12 thoracic spinal cord. The mediastina pleurae and central portions of the diaphragmatic pleurae are innervated by the phrenic nerves. This branch off the C3-C5 cervical cord, only the parietal pleurae contain somatosensory nerves and are capable of perceiving pain [2].

### *Conditions that affect the pleura*

A number of conditions can cause injury to the pleura or undermine its function. Harm to the membranes or overload of pleural fluid can affect how you breathe and lead to adverse respiratory symptoms. Pleurisy

Pleurisy is inflammation of the pleural membranes. It is most commonly caused by a viral infection, but may also be the result of a bacterial infection or an autoimmune disease (such as rheumatoid arthritis or lupus. Pleuritic inflammation causes the membrane surfaces to become rough and sticky [3]. Rather than sliding over each other, they membranes stick together, triggering sharp, stabbing pain with every breath, sneeze, or cough.

**Pneumothorax:** Pneumothorax, also known as a skin of the neck and chest. Collapsed lung, can develop when air collects in the pleural cavity. It may be caused by any number of things, including chest trauma, chest surgery and chronic obstructive pulmonary disease (COPD). In addition to shortness of breath, there may be crepitus, an abnormal crackling sound from just under [4].

**Hemothorax:** Hemothorax is a condition in which the pleural cavity fills with blood, typically as a result of traumatic injury or chest surgery. Rarely, a hemothorax can happen spontaneously due to a vascular rupture [5]. The main symptom of hemothorax is pain or a feeling of heaviness in the chest.

## Conclusion

The pleural cavity, with its associated pleurae, aids optimal functioning of the lungs during breathing. The pleural cavity also contains pleural fluid, which acts as a lubricant and allows the pleurae to slide effortlessly against each other during respiratory movements. Surface tension of the pleural fluid also leads to close apposition of the lung surfaces with the chest wall. This relationship allows for greater inflation of the alveoli during breathing. The pleural cavity transmits movements of the ribs muscles to the lungs, particularly during heavy breathing. During inhalation the external intercostal contract, as does the diaphragm. This causes the expansion of the chest wall that increases the volume of the lungs. A negative pressure is thus created and inhalation occurs.

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