We have two lungs (right and left) contained in the thoracic cavity (chest). Surrounding the lungs are ribs, which not only protect them from damage but also serve as anchors for the intercostal muscles. Beneath the lungs is a very large dome-shaped muscle, the diaphragm. All these muscles are attached to the lungs by the parietal and visceral membranes (also called parietal and visceral pleura).

The parietal membrane is attached to the muscles and the visceral membrane is attached to the lungs. The liquid between these two membranes, pleural fluid, sticks them together just as panes of glass become stuck together when wet.

As the visceral membrane covers, and is part of, the lungs and is stuck by pleural fluid to the parietal membrane, when the muscles in the thorax move, the lungs move with them. If air gets between the membranes, they become unstuck and, although the muscles can still contract and relax, they are no longer attached to the lung – as a result, the lung collapses. This abnormal collection of air in the pleural space is called a pneumothorax. If the pleural fluid liquid becomes infected, the person develops pleurisy.

When the intercostal muscles contract, they move up and away from the thoracic cavity. When the diaphragm contracts, it moves down towards the abdomen. This movement of the muscles causes the lungs to expand and fill with air, like a bellows (inhalation). Conversely, when the muscles relax, the thoracic cavity gets smaller, the volume of the lungs decreases, and air is expelled (exhalation).

(255 mots)