HEALTH BASICS

Pleura

The pleura are two thin tissue layers that surround each lung.

WHAT IT IS
Two thin tissue layers surrounding each lung

WHERE IT COMES UP
Chest imaging, breathing-related pain, fluid, or collapsed lung

WHY IT MATTERS
Helps lungs move smoothly and stay expanded

WHAT IT IS NOT
Not a disease or diagnosis

WHO TO ASK
A primary care clinician or lung specialist

HOW IT IS CHECKED
Chest imaging, ultrasound, fluid testing, or biopsy

Overview

The pleura are two thin layers of tissue associated with each lung. Together, they form a smooth covering that lets the lungs move against the chest wall during breathing.

The visceral pleura is the inner layer. It lies directly on the lung surface and follows the lung into the spaces between its lobes.

The parietal pleura is the outer layer. It lines the inside of the chest wall and covers parts of the diaphragm, the main breathing muscle beneath the lungs.

Between the layers is the pleural space . This is normally a very narrow space containing a small amount of lubricating fluid. It is sometimes called a "potential space" because it can become larger if air, extra fluid, blood, or infection collects there.

Each lung has its own pleural covering. The right and left pleural spaces are separate.

The pleura are normal anatomy, not a disease or diagnosis. You may see the word "pleural" on an imaging report or hear it when a clinician discusses chest pain, fluid around a lung, infection, or a collapsed lung.

How it works

As you breathe in, your chest expands and your diaphragm moves downward. The lungs follow this movement and fill with air.

The two pleural layers help connect the lungs mechanically to the moving chest wall. A thin film of pleural fluid lets the layers slide over each other with little friction. At the same time, pressure within the pleural space helps keep the lung surface close to the chest wall.

This pressure is lower than the pressure inside the lung. It is not a perfect vacuum, but the pressure difference helps keep the lungs expanded. If air enters the pleural space, that connection may be partly or fully lost, allowing a lung to shrink away from the chest wall.

The body continuously produces and absorbs small amounts of pleural fluid. The lymphatic system, a network that drains tissue fluid, helps remove it. Illness or injury can upset this balance and cause fluid to build up.

The pleural layers do not sense pain in the same way. The visceral pleura has little sensitivity to pain. The parietal pleura has a rich nerve supply, so irritation of this outer layer can cause sharp pain that changes with breathing or coughing.

Why it matters for your health

A pleural finding can affect how easily a lung expands. Its importance depends on what is in the pleural space, how much is present, how quickly it developed, and what caused it.

For example, a small amount of fluid found by chance may need only follow-up. A larger collection may press on the lung and make breathing harder. Air collecting under pressure can become an emergency.

Pleural findings can also provide information about another condition. Heart failure, pneumonia, cancer, blood clots in the lung, kidney or liver disease, autoimmune disease, injury, and recent surgery can all affect the pleural space.

Words such as "pleural thickening," "pleural fluid," or "pleural-based abnormality" describe locations or appearances. They do not, by themselves, identify the cause.

What can go wrong

Several named conditions can involve the pleura or pleural space:

Call emergency services for sudden severe trouble breathing, fainting, blue or grey lips, confusion, or severe new chest pain. These symptoms can have several causes and need rapid

assessment.

Seek urgent medical care for worsening shortness of breath, chest pain after an injury or procedure, coughing up blood, or breathing-related pain with fever. A stable finding discovered on routine imaging usually calls for planned follow-up rather than emergency care, unless new symptoms develop.

- Pleural effusion is extra fluid around a lung. Causes include heart failure, infection, cancer, inflammation, and some liver or kidney conditions.
- Pleuritis , also called pleurisy, is inflammation of the pleura. It can cause sharp pain with breathing, but the cause of the inflammation still needs to be identified.
- Pneumothorax means air has entered the pleural space, causing part or all of a lung to collapse. It may occur without an obvious injury or after chest trauma or a medical procedure.
- Tension pneumothorax occurs when trapped air builds pressure, compressing the lung and affecting blood flow. This is an emergency.
- Hemothorax is blood in the pleural space, often related to injury, surgery, or bleeding.
- Empyema is infected fluid or pus in the pleural space. It may develop as a complication of pneumonia.
- Pleural plaques or thickening are areas of thickened tissue. Plaques can be associated with past asbestos exposure, although they are not cancer.
- Pleural tumours may be benign or cancerous. Mesothelioma is a cancer that begins in the pleural lining and is strongly associated with asbestos exposure.

What you can do

There is no home test for the pleura, and a healthy pleura does not need routine monitoring. If you have no symptoms or pleural finding, there is usually nothing specific you need to do.

If an imaging report mentions the pleura, ask:

Chest X-rays can show larger collections of air or fluid. Ultrasound can identify and measure pleural fluid and help guide a needle safely. A CT scan gives more detailed pictures of the pleura, lungs, and chest wall.

If fluid needs investigation or is affecting breathing, clinicians may perform thoracentesis . During this procedure, a needle or thin tube removes fluid from the pleural space. The laboratory may examine the fluid for protein levels, blood cells, infection, or cancer cells. The exact tests are selected for the situation.

Some findings require a pleural biopsy , which removes a small tissue sample for examination. This may be done with image guidance or through a camera procedure called thoracoscopy.

Keep a record of previous chest imaging, chest injuries, surgery, cancer treatment, and possible asbestos exposure. If asbestos exposure is relevant, note the type of work, dates, and protective equipment used. Do not try to drain pleural fluid or air yourself.

- What exactly was found: air, fluid, thickening, a plaque, or a mass?
- How large is the finding, and has it changed from earlier imaging?
- Is there a likely cause?
- Do you need repeat imaging, another test, or no further action?

Common questions

Are the pleura part of the lungs?

The visceral pleura is attached to the lung surface, while the parietal pleura lines the chest. They work closely with the lungs but are distinct tissue layers.

Is pleural fluid normal?

Yes. A very small amount provides lubrication. "Pleural effusion" means more fluid has collected than normal.

Does pleuritic pain always mean pleurisy?

No. "Pleuritic" describes sharp pain that worsens with breathing or coughing. It can occur with pleural inflammation, pneumonia, a blood clot in the lung, pneumothorax, chest wall strain, and other conditions.

Can a pleural effusion be seen without draining it?

Yes. Imaging can identify pleural fluid, and some effusions are monitored while their underlying cause is treated. Drainage may be considered when fluid is large, causes breathing difficulty, appears infected, or needs laboratory testing.

Does pleural thickening mean cancer?

Not necessarily. Thickening can follow inflammation, infection, bleeding, surgery, or asbestos exposure. Its pattern and change over time help guide whether further testing is needed.

Can someone live without a pleural space?

The pleural layers can sometimes be made to stick together in a procedure called pleurodesis. This removes much of the potential space to reduce repeated fluid collection or pneumothorax. It is performed only for specific medical reasons.

Sources

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