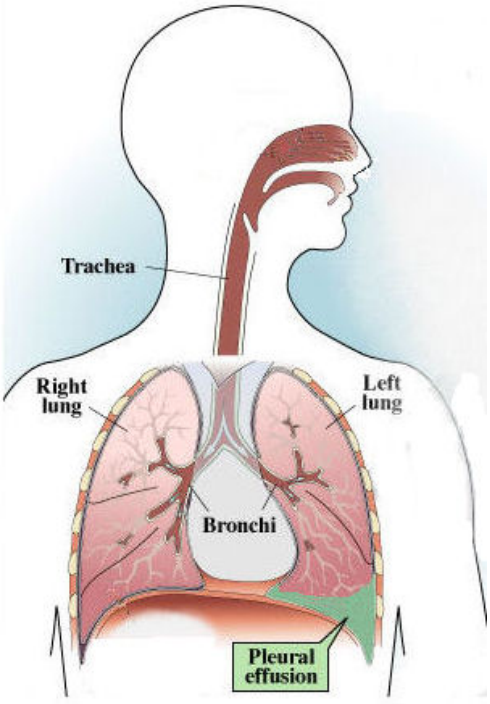
Pleural Effusion, Fluid in the Lungs

The lining covering your lungs and the inside of your chest is called the pleura. Usually, the space between the 2 pleura contains no air and only a thin layer of fluid. A pleural effusion is an abnormal buildup of fluid in the pleural space.



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Fluid gathers when there is increased pressure in the lung vessels. This forces fluids out of the lungs and into the pleural space. Vessels may also leak fluids when there are infections, such as pneumonia, or other causes of soreness and redness (*inflammation*). Fluids leak into the lungs when protein in the blood is low or when certain vessels (*lymphatics*) are blocked.

Finding a pleural effusion is important because it is usually caused by another disease. In order to treat a pleural effusion, your caregiver needs to find its cause. If left untreated, a large amount of fluid can build up and cause collapse of the lung.

CAUSES

- Heart failure.
- Infections (pneumonia, tuberculosis), pulmonary embolism, pulmonary infarction.
- Cancer (primary lung and metastatic), asbestosis.
- Liver failure (*cirrhosis*).
- Nephrotic syndrome, peritoneal dialysis, kidney problems (*uremia*).
- Collagen vascular disease (*systemic lupus erythematosis, rheumatoid arthritis*).
- Injury (*trauma*) to the chest or rupture of the digestive tube (*esophagus*).
- Material in the chest or pleural space (*hemothorax, chylothorax*).
- Pancreatitis.
- Surgery.
- Drug reactions.

SYMPTOMS

A pleural effusion can decrease the amount of space available for breathing and make you short of breath. The fluid can become infected, which may cause pain and fever. Often, the pain is worse when taking a deep breath. The underlying disease (heart failure, pneumonia, blood clot, tuberculosis, cancer) may also cause symptoms.

DIAGNOSIS

- Your caregiver can usually tell what is wrong by talking to you (*taking a history*), doing an exam, and taking a routine X-ray. If the X-ray shows fluid in your chest, often fluid is removed from your chest with a needle for testing (*diagnostic thoracentesis*).
- Sometimes, more specialized X-rays may be needed.
- Sometimes, a small piece of tissue is removed and examined by a specialist (*biopsy*).

TREATMENT

Treatment varies based on what caused the pleural effusion. Treatments include:

- Removing as much fluid as possible using a needle (*thoracentesis*) to improve the cough and shortness of breath. This is a simple procedure which can be done at bedside. The risks are bleeding, infection, collapse of a lung, or low blood pressure.

- Placing a tube in the chest to drain the effusion (*tube thoracostomy*). This is often used when there is an infection in the fluid. This is a simple procedure which can often be done at bedside or in a clinic. The procedure may be painful. The risks are the same as using a needle to drain the fluid. The chest tube usually remains for a few days and is connected to suction to improve fluid drainage. The tube, after placement, usually does not cause much discomfort.
- Surgical removal of fibrous debris in and around the pleural space (*decortication*). This may be done with a flexible telescope (*thoracoscope*) through a small or large cut (*incision*). This is helpful for patients who have fibrosis or scar tissue that prevents complete lung expansion. The risks are infection, blood loss, and side effects from general anesthesia.
- Sometimes, a procedure called pleurodesis is done. A chest tube is placed and the fluid is drained. Next, an agent (tetracycline, talc powder) is added to the pleural space. This causes the lung and chest wall to stick together (*adhesion*). This leaves no potential space for fluid to build up. The risks include infection, blood loss, and side effects from general anesthesia.
- If the effusion is caused by infection, it may be treated with antibiotics and improve without draining.

HOME CARE INSTRUCTIONS

- Take any medicines exactly as prescribed.
- Follow up with your caregiver as directed.
- Monitor your exercise capacity (the amount of walking you can do before you get short of breath).
- **DO NOT SMOKE.** Ask your caregiver for help quitting.

SEEK MEDICAL CARE IF:

- Your exercise capacity seems to get worse or does not improve with time.
- You do not recover from your illness.

SEEK IMMEDIATE MEDICAL CARE IF:

- Shortness of breath or chest pain develops or gets worse.
- You have an oral temperature above 102° F (38.9° C), not controlled by medicine.
- You develop a new cough, especially if the mucus (*phlegm*) is discolored.

MAKE SURE YOU:

- Understand these instructions.
- Will watch your condition.
- Will get help right away if you are not doing well or get worse.

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