Understanding fluid in the lungs

Call 911 for sudden severe trouble breathing. In the hospital, alert staff immediately. If you have been treated for pulmonary edema, ask what caused fluid to collect in your lungs and what to watch for after discharge.

Pulmonary edema can make the simple act of breathing difficult, painful, or even impossible, due to a buildup of fluid in the lungs blocking the intake of oxygen. If you or your loved one experience impaired breathing, you must seek immediate medical care.

Sudden shortness of breath or possible acute pulmonary edema is an emergency. Call 911. Once the person is stable, the care team treats the cause, monitors oxygen and fluid balance, and explains how to recognize changes that need prompt attention.

What Is Pulmonary Edema?

Pulmonary edema is a medical condition caused by excess fluid in the lungs. Your lungs contain many small air sacs called alveoli. When you breathe, those air sacs absorb oxygen and release carbon dioxide. If your lungs are healthy and clear, this exchange of gases occurs without difficulty. However, if fluid rather than air enters your lungs, the exchange of oxygen and carbon dioxide no longer occurs. The fluid collects in the air sacs and it becomes difficult to breathe.

When pulmonary edema develops suddenly, it is called acute or flash pulmonary edema, a condition that requires immediate medical assistance. This condition can be fatal if not treated quickly.

Signs of pulmonary edema may include:

- Shortness of breath
- Low oxygen in the blood
- Trouble breathing
- A cough often accompanied by pink sputum
- Excessive sweating
- Restlessness
- Anxiety
- Pale complexion
- Wheezing
- Chest pain
- Rapid or irregular heartbeat

Symptoms of chronic pulmonary edema include:

- Difficulty in breathing while lying flat
- Swelling of the feet or legs
- Rapid weight gain
- Severe sudden breathlessness at night
- Increased breathlessness while engaged in physical activity.

Pulmonary edema is not the same thing as pneumonia.

Pulmonary edema and pneumonia can both cause breathing difficulty, but their causes and treatment differ. A clinician may use an examination, imaging and other tests to determine what is happening.

It is important to note that both conditions require medical treatment.

Causes Of Pulmonary Edema

Pulmonary edema is divided into two categories: cardiogenic and non-cardiogenic.

Cardiogenic pulmonary edema is caused by congestive heart failure. It occurs when there is increased pressure on the heart due to a diseased or overworked left ventricle unable to pump out the blood received from the lungs. This inability to pump leads to a buildup of fluid in the lungs. The left ventricle of the heart can be weakened by narrow arteries, damage to the heart muscle, high blood pressure and problems with the heart valves.

Non-cardiogenic pulmonary edema is typically caused by injuries to the lungs, brain or central nervous system. It may also result from blood clots, blockage in the airways, pneumonia, viral infections, smoke inhalation, organ failure, sepsis, acute respiratory distress, near drowning, inflammation in the lungs, a reaction to certain medications, trauma to the chest, high altitudes, a drug overdose, or exposure to toxic chemicals.

Complications Of Pulmonary Edema

Complications may occur in both cardiogenic and non-cardiogenic pulmonary edema.

With cardiogenic pulmonary edema, the following complications are possible:

- Respiratory fatigue — This usually manifests as lethargy, fatigue, diaphoresis (excessive sweating), or worsening anxiety. High frequency respiratory fatigue occurs rapidly, while low frequency fatigue may develop slowly over a longer period of time.
- Cardiac arrhythmia — Generally, this involves problems with the heart rhythm. Your heart may beat too fast, too slowly, or irregularly. Continuous monitoring of the heart's rhythm is sometimes necessary.
- Swelling of the abdomen or lower extremities — The sudden swelling of the legs and ankles or the stomach area may indicate the buildup of excess fluid outside the lungs.
- Pleural effusion — This is the accumulation of fluid between the membranes that surround your lungs.
- Congestion and swelling of the liver

Complications with non-cardiogenic pulmonary edema include:

- Sepsis — A potentially life-threatening condition, sepsis results when the body has a negative reaction to an infection. Normally, the body releases chemicals into the bloodstream to fight infection. Sepsis occurs when the body fails to properly respond to those chemicals, triggering changes to the blood vessels that can damage organs and lead to organ failure.

- Acute Respiratory Distress Syndrome (ARDS) — A form of respiratory failure, ARDS occurs when fluid leaks into the damaged lungs. The fluid blocks oxygen from getting into the lungs and can make breathing difficult. This is a serious complication that can quickly become life-threatening.
- Pneumonia — An infection that inflames air sacs in the lungs, pneumonia may cause the air sacs to fill with fluid or pus. A phlegmy cough, fever, chills or breathing difficulties may result.

Typically, complications are addressed with antibiotics, steroids and/or oxygen treatments.

Pulmonary Edema Treatments

It is important to seek immediate emergency medical treatment when the following symptoms occur:

- Sudden shortness of breath
- Difficulty breathing
- Coughing up a pink, frothy substance
- Wheezing, gasping, or bubbly sounds while breathing
- Sweating profusely
- Blue or gray skin
- Confusion, dizziness or weakness after a significant drop in blood pressure

If you or a loved one have a pulmonary edema diagnosis, you may immediately receive oxygen treatment. In addition, an attempt will be made to identify the factors that caused the buildup of fluid in your lungs, whether it is your heart, medication or an illness. Then a physician will suggest a strategy for addressing those factors.

Pulmonary edema can be treated with medication (such as diuretics and ACE inhibitors), ventilator or oxygen treatment, or continuous positive airway pressure (C-PAP). You or your loved one may also be advised to make changes to your diet and lifestyle, including eating less salt, getting more exercise, quitting smoking, losing weight, and eating more vegetables, fruit and whole grains.

Before leaving Lakeview, ask what caused the fluid buildup, what still needs to be monitored and whether the next step is another care setting or a return home. Review the medicine list and the individual instructions for diet, fluid intake, activity and follow-up. Physical or occupational therapy may help with daily tasks while stamina returns. Ask the case manager whether home health services have been arranged, what each provider will do and how family members can reach them. Keep emergency and same-day instructions where the person and caregiver can find them.

Archived recovery account

This account describes care in an earlier setting. The course, timing and outcome belong to that individual.

When the patient began to feel worrying signs of illness that included shortness of breath, a fever and persistent cough, he was examined and found to have a full-blown COVID-19 infection and alarmingly low blood oxygen levels. His condition worsened rapidly and he had to be placed on a ventilator when he developed acute respiratory failure. As is often the case with patients fighting this disease, the patient developed acute bilateral pneumonia and was started on a course of IV antibiotics. When his oxygen levels plummeted even further he had to be resuscitated when he coded, brought on by a condition known as cyanosis that also caused his skin to turn a bluish hue. As his physicians worked hard to save his life they

had to place tubes to draw fluid from his chest and were alarmed by cardiac issues also caused by the virus. A decision to induce a medical coma was made and the patient remained in that state for three weeks. When he was brought out of the coma, his condition had stabilized and he was able to transfer from the acute care facility to the treating hospital.

The patient began to receive advanced respiratory therapy in conjunction with physical and occupational therapy to restore his mobility, strength and fine motor skills. Much to the delight of everyone on his team, he began to make quick progress and in less than two weeks was able to be taken off the ventilator completely. He went from success to success as he was able to start to drink and eat a regular diet, regain most of the independence over daily activities, and to be able to get up, stand on his own and walk with the aid of a walker. He remembered fear and uncertainty when breathing became difficult. He later described greater confidence as his condition and participation in therapy improved.

References:

Further reading on this topic — https://medlineplus.gov/heartfailure.html

MedlinePlus describes pulmonary edema, including sudden breathing changes, warning signs and the urgent assessment this condition may require. https://medlineplus.gov/ency/article/000140.htm

The National Heart, Lung, and Blood Institute explains heart failure symptoms, including fluid buildup, breathlessness and why changes should be reported to the treating clinician. https://www.nhlbi.nih.gov/health/heart-failure/symptoms

For a federal medical overview of how clinicians evaluate pulmonary edema and treat the underlying cause, see the MedlinePlus Medical Encyclopedia. https://medlineplus.gov/ency/article/000140.htm

Talk with Lakeview

For questions about a possible stay, call Lakeview Admissions at (262) 534-8509. During a stay, ask the bedside nurse who can help with your question.