Acute pulmonary oedema

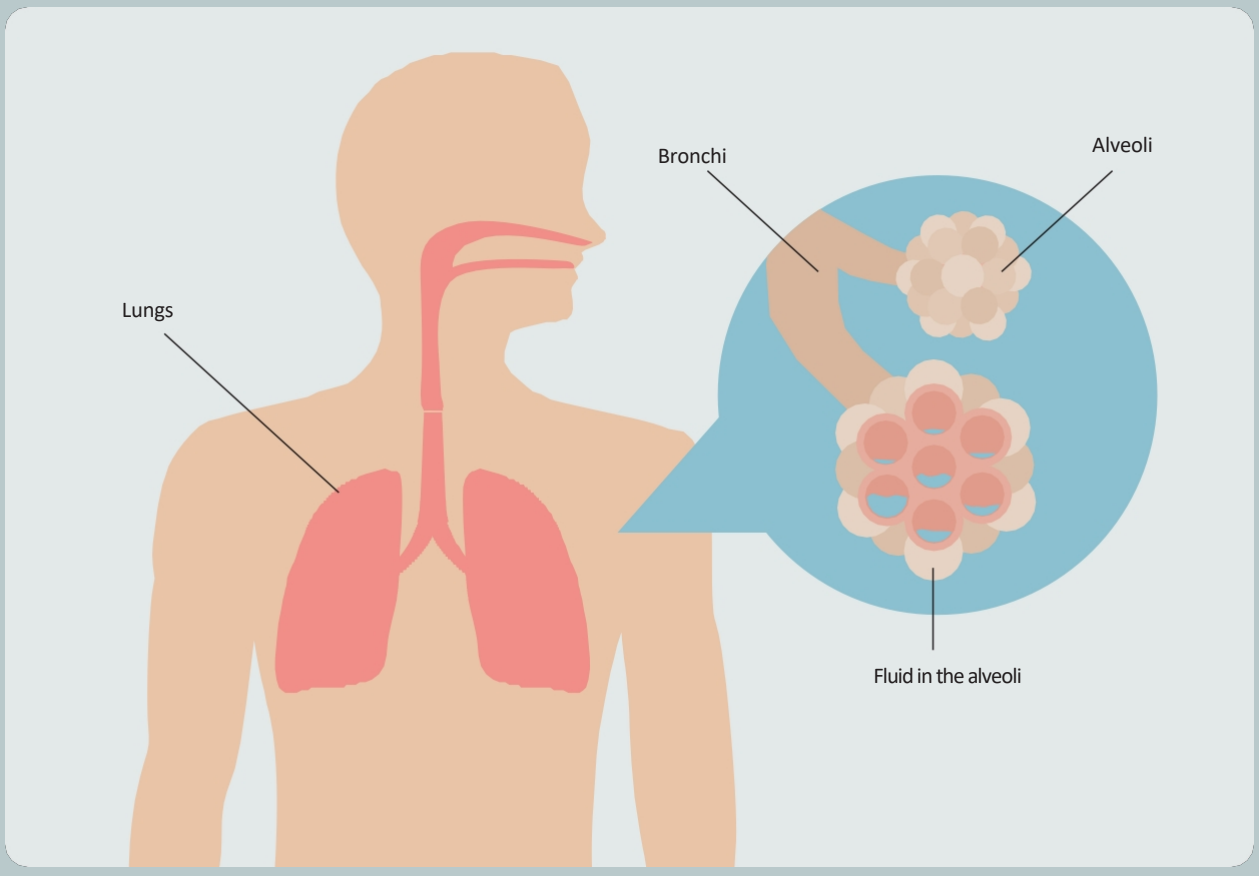
This short training course will enable you to act quickly and confidently

Sometimes acute pulmonary oedema develops slowly and insidiously. As this is a genuine emergency that can lead to life-threatening respiratory and circulatory arrest within a short period of time, you should quickly recognise the danger and take appropriate action immediately.

PRACTICAL EXAMPLE: Care recipient Peter Lang has been feeling unwell and weak for several days and has a persistent cough. The nursing staff inform his GP, who suspects a cold and recommends bed rest and plenty of fluids. Two days later the nurse on morning duty gets a shock: Peter Lang's condition has deteriorated rapidly. He is cold and sweaty, has bubbling breathing sounds and blue lips. Of course, the nurse immediately calls an ambulance. At the hospital, acute pulmonary oedema is diagnosed.

Pulmonary oedema

Pulmonary oedema is an increased accumulation of fluid in the lung tissue or alveoli. Up to 2 litres of fluid can accumulate until the function of the lungs is so impaired that they can no longer work efficiently.



The most common causes in old age include heart disease, e.g. as a result of a heart attack, a disease of the heart muscle or heart failure (especially of the left ventricle). The backflow of blood in the lungs causes fluid to leak from the vessels into the pulmonary alveoli. Pneumonia, allergic reactions, fluid overload in renal insufficiency, severe protein deficiency or aortic valve stenosis can also trigger pulmonary oedema.

In older people in particular, certain medications can also promote water retention:

- non-steroidal anti-inflammatory drugs (NSAIDs),
- cortisone (steroids)
- Diabetes medications (thiazolidinediones)
- Blood pressure medication

Particularly important: Care recipients occasionally stop taking diuretics (water pills) on their own because the urge to urinate is bothersome. If you suspect this, inform the general practitioner immediately – the risk of pulmonary oedema increases significantly.

Be aware of underlying conditions

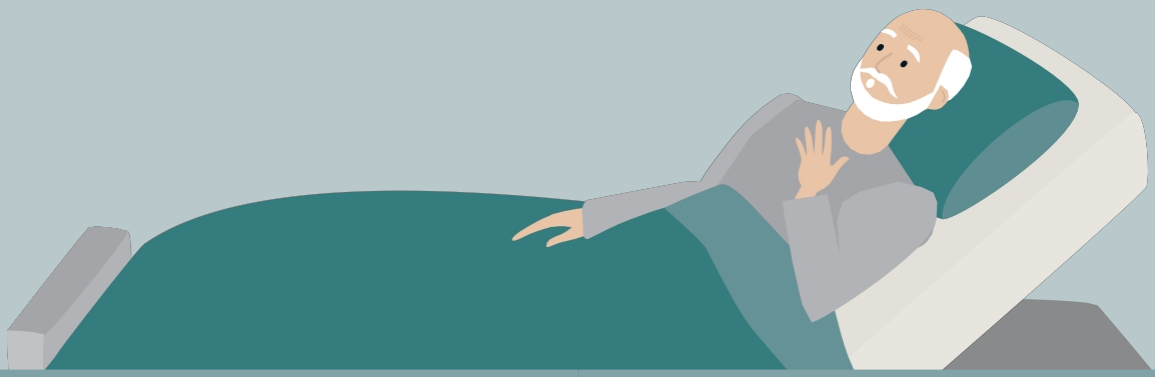
Care recipients with heart disease are at high risk. Drinking large amounts of fluid can be harmful in this case. Therefore, ask the GP whether it is necessary to restrict fluid intake – this must be noted in the documentation. A night-time cough that improves when sitting up can be an early sign. Rapid weight gain (e.g. +2 kg in 2 days) also indicates water retention.

The disorder progresses in several stages:

- Fluid accumulates in the interstitial tissue of the lungs.
- Fluid enters the alveoli and bronchi.
- Mixing with air produces white or reddish foam.
- The oxygen supply collapses – respiratory and circulatory arrest.

Symptoms can develop suddenly or gradually

The symptoms that occur depend on the type of pulmonary oedema. Typical warning signs include shortness of breath when lying down, increasing shortness of breath during exertion, waking up at night with shortness of breath, motor restlessness or anxiety. Those affected are often unable to lie flat (orthopnoea).



Signs and symptoms of sudden (acute) pulmonary oedema

- Laboured, rapid and shallow breathing shortness of breath
- Tightness, pain in the chest
- Cough
- Shortness of breath, fear of suffocation, often accompanied by motor restlessness
- Audible rattling or bubbling breathing sounds
- Foamy sputum, possibly mixed with blood
- Anxiety and restlessness
- Cold, clammy skin
- Purple to bluish discolouration of the skin, mucous membranes, lips, fingernails, earlobes, tip of the nose (cyanosis) or pale, greyish skin
- Visible congestion of the veins in the upper body
- Increased pulse, fluctuations in blood pressure or rapid heartbeat

Acute pulmonary oedema is life-threatening. Call the emergency doctor immediately if your care recipient shows any of the above acute signs and symptoms.

Signs and symptoms of chronic pulmonary oedema

- Difficulty breathing during activity or when lying down
- Waking up at night with coughing or shortness of breath that can be relieved by sitting up
- More shortness of breath than normal during physical activity
- Wheezing
- Rapid weight gain
- Swelling of the lower extremities
- Fatigue
- New or worsening cough
- Sweating
- Loss of appetite
- Anxiety and restlessness
- Pressure in the chest

If you notice any of the above symptoms in a care recipient, you should immediately inform a nurse so that they can consult with the doctor.

NOTE: The more of these symptoms occur together, the more likely it is that pulmonary oedema is present. Depending on the severity of the symptoms, immediate hospitalisation (possibly even by emergency doctor) is necessary in the case of pulmonary oedema.

Procedure for acute pulmonary oedema

- **Remain calm:** Even if the situation is threatening, act in a reassuring manner.
- **Call the emergency services:** Immediately and without delay.
- **Clear the airways:** Loosen tight clothing, remove dentures if necessary and ensure a supply of fresh air. Avoid bending the legs too far forward, as this can make breathing more difficult.
- **Positioning:** Raise the upper body and lower the legs to reduce pressure in the pulmonary circulation.
- **Monitor** the patient**:** Observe breathing, complexion, consciousness; measure pulse and blood pressure.
- **No fluids/food:** Do not give the patient any drinks or small bites of food – risk of aspiration!
- **Transfer form/preparation:** If necessary, pack a hospital bag and add relevant treatment instructions.
- **Information:** Notify the responsible nurse and clarify the information to be given to relatives.
- **Documentation:** Carefully record vital signs, abnormalities, measures taken and reactions.

Legal notice

Caregivers are not permitted to administer emergency medication without a doctor's prescription (e.g. Nitrolingual, Furosemide). Oxygen may only be administered if a written doctor's prescription is available.

When the care recipient returns home

After pulmonary oedema, nursing staff must be particularly vigilant. The risk of relapse is high. Check regularly:

- Weight
- Legs for oedema
- Night-time cough
- Exertional dyspnoea
- Medication intake (especially diuretics)

Please note: The risk of pneumonia is increased. Document any unusual coughing at an early stage and inform the responsible nursing staff.