CONDITION

Pneumonia

Pneumonia is an infection that inflames the air sacs in one or both lungs.

WHAT IT IS
Lung infection that inflames air sacs

BODY SYSTEM
Lungs and breathing

MAIN SYMPTOMS
Cough, fever, breathlessness, chest pain

WHAT CAUSES IT
Usually bacteria or viruses; sometimes fungi or aspiration

HOW IT IS DIAGNOSED
Clinical assessment, oxygen measurement, and chest X-ray

MAIN TREATMENT
Cause-specific medicines, rest, fluids, and oxygen when needed

CAN IT BE CURED?
Yes - most cases resolve with treatment

IS IT AN EMERGENCY?
Sometimes - severe breathing trouble, blue lips, or confusion

LONG-TERM OUTLOOK
Most recover, but tiredness may continue for weeks

Overview

Pneumonia is inflammation in the air sacs of one or both lungs, usually caused by an infection. The air sacs may fill with fluid or pus, making it harder for oxygen to pass into the blood.

Pneumonia can affect anyone. It ranges from a mild condition treated at home to a serious infection requiring hospital care. Babies, older adults, and people with certain health conditions are more likely to become severely unwell.

Many different germs can cause pneumonia. Bacteria and viruses are the most common. Fungi cause some cases, especially in people with weakened immune systems or after particular environmental exposures.

"Community-acquired pneumonia" begins outside a hospital or soon after admission. Hospital-acquired and ventilator-associated pneumonia develop during healthcare and may

involve different bacteria. Aspiration pneumonia can occur when food, liquid, saliva, or vomit enters the lungs.

Most people recover, but improvement is not always immediate. Even after the infection is controlled, cough, weakness, and tiredness may continue while the lungs heal.

Symptoms

Symptoms may develop suddenly over a day or two, or more gradually. They can resemble influenza, COVID-19, bronchitis, or other breathing conditions, so symptoms alone cannot confirm pneumonia.

Common symptoms include:

Mucus may be clear, yellow, green, brown, or blood-streaked. Its colour does not reliably show whether the cause is bacterial or whether antibiotics like amoxicillin or doxycycline are needed.

Symptoms can look different at different ages. Older adults may have confusion, unusual sleepiness, weakness, or a lower-than-normal temperature rather than a clear fever. Babies and young children may breathe quickly, make grunting sounds, feed poorly, or pull in the skin between or below the ribs while breathing.

Some people have "walking pneumonia," an informal term for pneumonia mild enough that they can remain active. It is still pneumonia and can worsen or spread to other people if an infectious germ is responsible.

- A new cough, which may be dry or produce mucus
- Fever, chills, or sweating
- Shortness of breath or faster breathing
- Chest pain that becomes sharper when coughing or breathing deeply
- Tiredness, weakness, or reduced appetite
- Headache or muscle aches
- Nausea, vomiting, or diarrhoea

Causes and risk factors

Pneumonia usually begins when a germ reaches the lungs and overcomes the body's normal defences. The responsible germ is not always identified.

Bacterial pneumonia can occur on its own or after a viral respiratory infection. Streptococcus

pneumoniae , also called pneumococcus, is one well-known cause. Other bacteria can cause pneumonia in the community, hospitals, or care facilities.

Viruses that can cause pneumonia include influenza, respiratory syncytial virus, or RSV, and the virus that causes COVID-19. Fungal pneumonia is less common and is more likely with a weakened immune system or exposure to certain fungi.

Aspiration can cause infection or direct lung irritation. It is more likely when swallowing or coughing is impaired, such as after a stroke, during reduced consciousness, or with some neurological conditions.

Factors linked with a greater chance of pneumonia or severe illness include:

Having a risk factor does not mean that you will develop pneumonia.

- Being a baby, young child, or older adult
- Smoking or regular exposure to tobacco smoke
- Asthma, chronic obstructive pulmonary disease, or other lung conditions
- Heart, liver, or kidney conditions
- Diabetes
- A weakened immune system
- Difficulty swallowing or clearing mucus
- Recent influenza or another respiratory infection
- A recent hospital stay or use of a breathing machine

Diagnosis

A healthcare professional will ask about your symptoms, when they began, and any health conditions or recent infections. They may listen to your lungs for crackling, reduced airflow, or other unusual sounds.

Your temperature, breathing rate, heart rate, blood pressure, and alertness help show how unwell you are. A small finger sensor called a pulse oximeter estimates the amount of oxygen in your blood.

A chest X-ray can show changes that support a diagnosis of pneumonia and may reveal fluid around the lung. However, early pneumonia may not always appear clearly. A CT scan is sometimes used if the diagnosis is uncertain or a complication is suspected.

Blood tests can look for inflammation and check how the kidneys and other organs are

working. Samples of blood, mucus, or fluid around the lung may be tested for germs in people with severe pneumonia or particular risk factors. Nose or throat swabs can identify some viruses.

It is common not to find the exact germ. Treatment decisions can still be based on the likely cause, the severity of the illness, test findings, and local patterns of infection.

Treatment and management

Treatment depends on the likely cause and how severely the lungs are affected.

Antibiotics treat bacterial pneumonia but do not work against viruses. If antibiotics are prescribed, take them exactly as directed and complete the course unless the prescriber tells you to stop or change treatment. Do not use leftover antibiotics or share them with someone else.

Some viral infections may be treated with antiviral medicine, particularly when treatment can be started early or the person has a higher risk of complications. Antifungal medicines are used for specific fungal infections. These treatments are selected according to the suspected or confirmed cause.

Mild pneumonia can often be managed at home. Rest, adequate fluids, and avoiding smoke can support recovery. Medicines for pain or fever may help when they are safe for you; follow the product instructions or advice from a healthcare professional. Ask before using cough or cold products for a child.

Hospital treatment may include oxygen, fluids, antibiotics or other medicines given through a vein, and closer monitoring. Severe breathing failure may require support from a mask or a ventilator.

Symptoms do not all improve at the same speed. Fever may settle before the cough, chest discomfort, or tiredness. Contact the healthcare service managing your care if symptoms worsen, treatment causes troublesome effects, or improvement does not begin within the expected time they gave you.

Complications

Most people recover without a lasting complication. The risk is higher when pneumonia is severe, treatment is delayed, or another health condition affects recovery.

Possible complications include:

Complications usually need hospital assessment. Pleural fluid may need to be tested or drained, while breathing or circulation problems may require intensive support.

- Low blood oxygen or respiratory failure
- Sepsis, a dangerous whole-body response to infection
- Bacteria spreading into the bloodstream
- A lung abscess, which is a pocket of pus
- Fluid around the lung, called a pleural effusion
- Infected fluid around the lung, called empyema
- Worsening of asthma, heart failure, or another existing condition

Prevention

Not every case of pneumonia can be prevented. Different germs cause it, and some people develop pneumonia despite taking sensible precautions.

Vaccination lowers the risk from several important causes. Pneumococcal vaccines protect against certain pneumococcal infections. Influenza and COVID-19 vaccination can reduce infections that may cause pneumonia or lead to bacterial pneumonia. Eligibility and schedules differ by age, health history, and country, so use the current recommendations where you live.

Other useful measures include:

These steps reduce risk but cannot guarantee that pneumonia will not occur.

- Wash or sanitise your hands regularly
- Avoid close contact when you or another person has a respiratory infection
- Improve indoor ventilation where practical
- Cover coughs and sneezes and dispose of tissues
- Avoid smoking and second-hand smoke
- Follow any swallowing or feeding plan provided for aspiration risk
- Keep chronic lung, heart, and metabolic conditions well managed

Living with it and what to expect

Recovery is usually gradual. Many people begin to feel better after treatment starts, but cough

and tiredness can continue for several weeks. Severe pneumonia, a hospital stay, older age, or existing health conditions can make recovery longer.

Increase everyday activity slowly as your breathing and energy improve. Trying to return immediately to a full schedule may worsen fatigue. Eating regularly, drinking enough fluid, and getting adequate sleep can help while your body recovers.

A lingering cough does not always mean that the infection is still active. Airways can remain irritated, and mucus may take time to clear. However, symptoms that are worsening, returning after improvement, or not following the expected recovery pattern should be reviewed.

Some people need routine follow-up, especially after severe pneumonia or when symptoms persist. A repeat chest X-ray is not required for everyone. It may be arranged when symptoms or X-ray changes do not clear as expected, or when there are risk factors for another underlying lung problem.

Most people return to their usual activities without permanent lung damage. Some experience reduced stamina for weeks or months. Repeated pneumonia may lead to assessment for swallowing problems, airway blockage, immune problems, or an underlying lung condition.

When to get medical help

Seek prompt medical advice if you develop possible pneumonia symptoms, particularly shortness of breath, chest pain when breathing, persistent fever, or a worsening cough. Earlier assessment is especially important for babies, older adults, pregnant people, and anyone with a weakened immune system or significant heart or lung condition.

Call emergency services if you or someone else has:

These signs may mean that oxygen levels or circulation are dangerously affected.

Routine follow-up is appropriate for a cough or tiredness that is slowly improving but lasting longer than expected. Arrange an earlier review if symptoms worsen, fever returns, you cannot keep fluids down, or prescribed treatment is not helping as expected.

- Severe difficulty breathing or cannot speak normally because of breathlessness
- Blue, grey, or unusually pale lips, tongue, or skin
- New severe confusion, collapse, or difficulty waking
- Severe or rapidly worsening chest pain
- Pauses in breathing, grunting, or marked chest pulling in a child

Common questions

Is pneumonia contagious?

Pneumonia itself is inflammation in the lungs, but many germs that cause it can spread between people. Someone exposed to the same germ may develop a cold, flu-like illness, or pneumonia. Aspiration pneumonia and many fungal pneumonias do not spread from person to person.

How long does pneumonia last?

The active infection may improve within days of effective treatment, but full recovery often takes longer. Cough, reduced stamina, and tiredness can continue for several weeks. Recovery after severe pneumonia may take months.

Can pneumonia go away without antibiotics?

Viral pneumonia does not respond to antibiotics and may improve with supportive care. Bacterial pneumonia usually needs antibiotics because it can become serious if untreated. Symptoms cannot reliably identify the cause, so suspected pneumonia should be medically assessed rather than managed with leftover medicine.

What is the difference between pneumonia and bronchitis?

Bronchitis mainly inflames the larger breathing tubes, while pneumonia affects the tiny air sacs where oxygen enters the blood. Both can cause cough and fever. Pneumonia is more likely to cause low oxygen, shortness of breath, or changes on a chest X-ray.

Can I get pneumonia more than once?

Yes. Having pneumonia does not protect against every germ that can cause it. Repeated episodes, especially in the same area of a lung, may need further assessment for an underlying problem.

When can I return to work, school, or exercise?

Return gradually when fever has settled, breathing is comfortable at rest, and energy is improving. Whether you may still spread infection depends on the germ and any treatment received. Follow the advice given for influenza, COVID-19, or another identified infection.

Sources

- Centers for Disease Control and Prevention - About Pneumonia

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- World Health Organization - Pneumonia in children