Community Acquired Pneumonia

Introduction

Pneumonia is inflammation (swelling) of the tissue in one or both of your lungs. It is usually caused by an infection.

At the end of the breathing tubes in your lungs are clusters of tiny air sacs. If you have pneumonia, these tiny sacs become inflamed and fill up with fluid.

Terms such as bronchopneumonia, lobar pneumonia and double pneumonia are sometimes used, but refer to the same condition with the same causes and treatment.

Common symptoms of pneumonia include:

a cough

fever

difficulty breathing

When to see your DOCTOR

If you experience any of the symptoms of pneumonia, see your DOCTOR.

You may need a chest X-ray or further tests to confirm the diagnosis.

If you are experiencing severe symptoms such as rapid breathing, chest pain or confusion, seek urgent medical attention.

What causes pneumonia?

The most common cause of pneumonia is a pneumococcal infection caused by bacteria called Streptococcus pneumoniae.

However, there are many different types of bacteria and viruses that can lead to pneumonia.

Good hygiene and a healthy lifestyle can help prevent pneumonia. Try to avoid smoking, as it damages your lungs and increases the chance of infection.

People at high risk of pneumonia should also be offered the pneumo jab and the flu jab.

How is pneumonia treated?

Mild pneumonia can usually be treated at home with antibiotics, rest and fluids. People who are otherwise healthy will normally recover well.

For people with other health conditions, pneumonia can be severe and may need to be treated in hospital.

This is because pneumonia can lead to complications, some of which can be fatal, depending on the health and age of the patient. These include:

respiratory failure (when the lungs cannot take in enough oxygen) due to the air sacs filling with water

lung abscesses

blood poisoning (septicaemia)

Who is affected?

Pneumonia affects around one in 100 adults each year. It is more common during autumn and winter.

Pneumonia can affect people of any age, although it is more common and can be more serious in groups such as:

babies, young children and elderly people

people who smoke

people with other health conditions, such as a lung condition or weakened immune system

People in these groups are more likely to need treatment in hospital.

Symptoms of pneumonia

The symptoms of pneumonia can develop suddenly (over 24-48 hours) or may come on more slowly, over several days.

Pneumonia symptoms vary and can be similar to those of other chest infections, such as acute bronchitis.

Common symptoms of pneumonia

You are likely to have a cough. This can be dry, or may produce phlegm (thick mucus) that is yellow, green, brownish or blood-stained.

Other common symptoms include:

difficulty breathing – your breathing may be rapid and shallow and you may feel breathless, even when resting

rapid heartbeat

fever

feeling generally unwell

sweating and shivering

loss of appetite

pain in your chest

Less common symptoms

Less commonly, symptoms of pneumonia can include:

coughing up blood (haemoptysis)

headaches

fatigue

nausea

vomiting

wheezing

pain in your joints and muscles

feeling confused and disorientated (particularly in elderly people)

When to see your DOCTOR

If you experience any symptoms of pneumonia, see your DOCTOR for diagnosis.

If you are experiencing severe symptoms, particularly rapid breathing, pain or confusion, seek urgent medical attention.

Causes of pneumonia

Pneumonia is most commonly caused by an infection, usually a bacterial infection.

However, many different bacteria, viruses and (rarely) fungi cause pneumonia; the germ depends on where the pneumonia began. For example, germs that cause pneumonia caught in hospitals are different to those that cause pneumonia caught in the community.

The germs that cause an infection are usually breathed in. In rare cases, pneumonia can develop from an infection elsewhere in your body, when germs enter your lungs through your bloodstream.

The four types of pneumonia are described in more detail below.

Bacterial pneumonia

The most common cause of pneumonia in adults is a bacterium called Streptococcus pneumoniae. This form of pneumonia is sometimes called pneumococcal pneumonia. Read more about pneumococcal infections.

Less commonly, other types of bacteria can cause pneumonia, including:

Haemophilus influenzae

Staphylococcus aureus

Mycoplasma pneumoniae (outbreaks tend to occur every four to seven years, more commonly in children and young people)

And rarely, the following bacteria can cause pneumonia:

Chlamydophila psittaci: this causes a rare form of pneumonia called psittacosis, which can be passed on to people from infected birds such as parrots, parakeets, pigeons, canaries and budgies (this condition is also called parrot fever or parrot disease)

Chlamydophila pneumoniae

Legionella pneumophila: this causes Legionnaires' disease, an uncommon form of pneumonia

Viral pneumonia

Viruses can also cause pneumonia, most commonly the respiratory syncytial virus (RSV), and sometimes the flu (influenza) type A or B virus.

Viruses are a common cause of pneumonia in young children.

Aspiration pneumonia

Rarely, pneumonia can be caused by breathing in:

vomit

a foreign object, such as a peanut

a harmful substance, such as smoke or a chemical

The object or substance inhaled causes irritation in the lungs or damages them. This is called aspiration pneumonia.

Fungal pneumonia

Pneumonia caused by fungal infection of the lungs is rare in people who are normally healthy. It more often affects people whose immune systems are weakened (see below). While still rare, fungal pneumonia is more likely to affect people who travel to places where these infections are more commonly found, such as parts of the US, Mexico, South America and Africa.

The medical names for fungal pneumonia include histoplasmosis, coccidioidomycosis and blastomycosis.

People at risk

The following people have a higher risk of developing pneumonia:

babies and very young children

elderly people

people who smoke

people with other health conditions

people with a weakened immune system

Health conditions that increase the risk of pneumonia developing include:

another lung condition such as asthma or cystic fibrosis

a heart condition

a kidney or liver condition

a lowered immune system

Your immune system can be weakened because of:

a recent illness such as flu

treatment for cancer, such as chemotherapy

medicines that weaken the immune system after an organ transplant

HIV or AIDS

Diagnosing pneumonia

Screening for lung cancer

Although uncommon, pneumonia can sometimes be a symptom of underlying lung cancer in people who smoke and are 50 years of age or over.

If you fall into one of these groups, your DOCTOR may refer you for a chest X-ray. Lung cancer usually shows up on X-rays as a ‘white-grey’ mass.

If your X-ray does not detect cancer, a follow-up X-ray is recommended six weeks later. This is a way of ‘double-checking’ all is well with your lungs.

Your DOCTOR can often diagnose pneumonia by asking questions about your symptoms and examining your chest. In some cases, further tests may be needed.

Pneumonia can sometimes be difficult to diagnose as it shares many symptoms of other conditions, such as the common cold, bronchitis and asthma.

To make a diagnosis, your doctor may first ask:

whether you are breathing faster than usual

if you feel breathless

how long you have had your cough

whether you are coughing up sputum and what colour it is

if the pain in your chest is worse when you breathe in or out

Your doctor will probably take your temperature and listen to the back and front of your chest with a stethoscope, to check for any crackling or rattling sounds.

They may also listen to your chest by tapping it. If the lungs are filled with fluid, this produces a different sound to normal, healthy lungs.

Most people with mild pneumonia do not need to have a chest X-ray or other tests.

Chest X-ray and other tests

Your DOCTOR may arrange a chest X-ray or other tests if your symptoms have not started to improve within 48 hours of starting treatment.

A chest X-ray can show how much your lungs are affected. It can also help the doctor distinguish between pneumonia and other chest infections, such as bronchitis.

Your DOCTOR may also arrange:

a sputum test

blood tests

Analysing samples of sputum or blood can help identify the bacterium or virus causing the infection.

Treating pneumonia

Mild pneumonia can usually be successfully treated at home with antibiotics and plenty of rest and fluids. More severe cases may need hospital treatment.

Treatment at home

You may continue to cough for two to three weeks after finishing your course of antibiotics and feel tired for even longer, as your body continues to recover.

Let your DOCTOR know if your symptoms do not begin to get better within two days of starting treatment. Your symptoms may not have improved because:

the bacteria causing the infection may be resistant to antibiotics – your doctor may change to a different antibiotic, or may start treatment with a second antibiotic while you continue to take the first one

a virus may be causing the infection, rather than bacteria – antibiotics have no effect on viruses and your body's immune system will have to fight the viral infection by creating antibodies to it

Treatment in hospital

You may need hospital treatment if your symptoms are severe. This includes antibiotics and fluids given intravenously through a drip, or oxygen to help breathing.

In very serious cases of pneumonia, breathing may need to be assisted through a ventilator in an intensive care unit (ICU).

Self help

The steps below may help ease your symptoms.

You can take painkillers such as paracetamol or ibuprofen to relieve pain and reduce fever. You should not take ibuprofen if you:

are allergic to aspirin or other non-steroidal anti-inflammatory drugs (NSAIDs)

have asthma, kidney disease, a history of stomach ulcers or indigestion

Cough medicines are not recommended. Coughing enables you to clear mucus from your lungs, so trying to stop your cough could make the infection last longer. Also, there is little evidence cough medicines are effective. A warm drink of honey and lemon can help relieve the discomfort caused by coughing.

Drink plenty of fluids to avoid dehydration and get plenty of rest to help your body recover.

If you smoke, it is more important than ever to stop as smoking damages your lungs. Read more information and tips on quitting smoking.

Pneumonia is not usually passed from one person to another so it is safe to be with others, including family members. However, it would be sensible for those with weakened immune systems to avoid a person with pneumonia until they are starting to get better.

Once your symptoms improve, it may take some time for you to recover fully and your coughing may continue for some time. Speak with your DOCTOR if you are concerned.

After treatment

Your DOCTOR will probably ask to see you again around six weeks after you started your antibiotics.

In some cases, they may arrange follow-up tests such as a chest X-ray, for example if:

your symptoms have not improved

your symptoms have come back

you smoke

you are over the age of 50

Some people may be advised to have vaccinations against flu or pneumococcal infections after recovering from pneumonia. Read more about preventing pneumonia.

Complications of pneumonia

Complications of pneumonia are more common in older people, young children and people with existing health conditions such as diabetes.

If you develop complications, you will be admitted to hospital for treatment.

The most common complications of pneumonia are pleurisy, a lung abscess and blood poisoning (septicaemia), described below.

Pleurisy

Pneumonia can cause pleurisy, which is inflammation of the pleura, the two thin linings between your lungs and your ribcage.

Less commonly, fluid can build up in the space between your lungs and the wall of your chest. This is called a pleural effusion.

Pleural effusion affects around half of people admitted to hospital with pneumonia.

The fluid can put pressure on the lungs, making it difficult to breathe. Pleural effusion usually gets better by itself when pneumonia is treated.

In around one in 10 cases of pneumonia treated in hospital, the fluids that make up a pleural effusion become infected by bacteria, which causes a build-up of pus. This is known as empyema.

The infected fluid is usually drained using a needle or a thin tube. The most serious cases may need surgery to remove the pus and repair any damage to the pleura and lungs.

Lung abscess

A lung abscess is a rare complication of pneumonia and mostly seen in people who have a serious, pre-existing illness or those with a history of severe alcohol misuse.

A lung abscess is a pus-filled cavity that develops inside the tissue of the lungs. Coughing up unpleasant-smelling phlegm and swelling in your fingers and toes are signs of a lung abscess.

Lung abscesses can often be treated using antibiotics. This usually involves an initial course of intravenous antibiotics followed by antibiotic tablets for four to six weeks.

Most people start to feel better within three to four days. It's important to finish your recommended course of antibiotics, even if you feel perfectly healthy, though, to prevent re-infection of your lungs.

Around one in 10 people with a lung abscess need surgery to drain the pus out of the abscess or remove the affected section of the lung.

Blood poisoning

Another rare and serious complication of pneumonia is blood poisoning, also known as septicaemia.

Symptoms of septicaemia include:

high temperature (fever) of 38ºC (100.4ºF) or above

fast heartbeat and breathing

low blood pressure (hypotension), which will cause you to feel dizzy when you stand up

a change in mental behaviour, such as confusion or disorientation

reduced urine flow

cold, clammy and pale skin

loss of consciousness

Once your blood has become infected, it's possible for the infection to spread to other organs in your body, such as:

the outer layers of your brain (meningitis)

the lining of your abdomen (peritonitis)

the inner layer of your heart (endocarditis)

your joints (septic arthritis)

These types of infections are called metastatic infections and are usually serious, needing treatment with high-dose intravenous antibiotics.

Preventing pneumonia

You can help stop germs spreading to others by practising good hygiene.

For example:

when you cough or sneeze, cover your mouth and nose with a tissue to catch the germs

throw used tissues away immediately, in a bin or toilet – germs can live for several hours after they leave your nose or mouth

wash your hands regularly, to avoid transferring germs to anyone else or other objects

Read more information about preventing the spread of flu.

Vaccinations

To help protect against pneumonia, people in higher risk groups should be vaccinated. The recommended vaccinations are:

the pneumonia jab (pneumococcal vaccination), which protects against pneumococcal infections

the flu jab

Lifestyle

Smoking, alcohol misuse and intravenous drug abuse can increase your risk of developing pneumonia.

Smoking

Smoking damages your lungs, which means they become infected more easily.

If you smoke, the best thing you can do to prevent pneumonia is quit smoking.

Your DOCTOR or pharmacist can also give help and advice about quitting.

Alcohol misuse

Excessive and prolonged alcohol misuse is known to weaken your lungs' natural defences against infections, making you more vulnerable to pneumonia.

One study found 45% of people admitted to hospital with pneumonia had an alcohol misuse problem. Alcohol misuse is defined as regularly drinking over the recommended weekly limits (21 units of alcohol for men and 14 units of alcohol for women).

Not only does alcohol misuse increase your risk of developing pneumonia, it also increases your risk of it being more serious. It is estimated that people who misuse alcohol are three to seven times more likely to die from pneumonia than the general population.

If you drink alcohol, do not exceed recommended daily limits (three to four units a day for men and two to three units a day for women).

Contact your DOCTOR if you are finding it difficult to moderate your drinking. Counselling services and medication are available to help you reduce your alcohol intake.