



Oxford University Hospitals
NHS Foundation Trust

Pneumonia

Information for patients



Introduction

This leaflet provides information for patients about pneumonia. It contains information on the illness, including symptoms, diagnosis, treatment and recovery, and if you are admitted, what to expect during a hospital stay.

If you have any queries or concerns, please speak to your doctor, nurse or pharmacist.

What is pneumonia?

Pneumonia is a condition in which there is inflammation (swelling) of the lung tissue, usually caused by an infection. Pneumonia affects between 5 and 10 in every 1,000 adults in the UK every year. In pneumonia, the tiny air sacs in the lungs (alveoli) become swollen and fill up with germs, fluid and inflammatory cells. This makes it harder for the lungs to perform their function in breathing.

You can get pneumonia at any age.

Most cases of pneumonia can be treated at home with antibiotics. Some patients may require admission to hospital for either intravenous antibiotics (given through a drip), additional oxygen or nursing support.

More people are affected by pneumonia in the winter months when respiratory germs spread more easily from person to person. Most people can be completely cured with treatment, but for some people pneumonia can be life-threatening, even in those who are fit and healthy.

What causes pneumonia?

Pneumonia is caused by breathing in bacteria, viruses or other germs. In a normally healthy person, a small number of germs do not matter. They are trapped in sputum (phlegm) and killed by the body's immune system.

Sometimes, these germs will multiply and cause lung infections. This is more likely in people aged over 65, those with chronic lung conditions, smokers and those who are immunosuppressed. However, even healthy people can develop pneumonia.

There are lots of types of pneumonia. Pneumonia which starts outside of hospital is called community-acquired pneumonia, and is most commonly caused by a bacterium called *Streptococcus pneumoniae*. Other types of pneumonia include:

- Viral pneumonia – caused by viruses like influenza (flu), respiratory syncytial virus (RSV) or COVID-19.
- Hospital-acquired pneumonia – pneumonia that develops when somebody is already in hospital.
- Aspiration pneumonia – caused by food (or vomit/harmful substances) going down your windpipe instead of the tube into the stomach (the oesophagus).
- Fungal pneumonia – caused by fungal infections.

The germs which cause pneumonia can be passed on from person to person.

It is possible to get pneumonia more than once. People who develop pneumonia multiple times might have an underlying problem with their lungs or immune system. Their doctor may arrange extra tests to look for these problems.

What are the signs and symptoms?

Pneumonia can be very serious and make you feel very unwell. Symptoms come on over a few days and might include:

- A cough – this might be dry, or produce yellow, green or blood-stained sputum (phlegm).
- Difficulty breathing.
- A fever (high temperature).
- Feeling weak, tired and generally unwell.
- Being off your food.
- Muscle aches.

You might not have all of these symptoms. Severe cases of pneumonia can also cause:

- Wheezing.
- Confusion (especially in older people).
- Coughing up blood.
- A low blood pressure.
- Fast breathing and / or heartbeat.

Some people with pneumonia also develop pleurisy. This is when the lining between the lungs and the ribcage (the pleura) becomes inflamed and swollen. This will cause a sharp pain in the side of the chest which gets worse when people take a deep breath in.

Diagnosis and treatment – what to expect

If your doctor thinks you might have pneumonia, they will ask questions about your symptoms, take some observations from you (e.g. blood oxygen levels, temperature) and perform a physical examination. The doctor might hear crackles in your chest. They will also arrange some tests to help confirm the diagnosis and find out how severe the pneumonia is. These will include blood tests, sputum (phlegm) and urine samples, swabs for viruses and a chest X-ray.

The main treatment for pneumonia is antibiotics – these can be given as tablets or via a drip (intravenously). If your blood oxygen levels are low you may also be given extra oxygen, given via a mask or small tubes which sit just inside the entrance of the nostrils. How long you need antibiotics will depend on the severity of the pneumonia.

Pneumonia caused by a virus does not need treatment with antibiotics. Your doctor may prescribe antiviral medications and steroids, or simply supportive treatments whilst the body recovers on its own.

Treatment in hospital

If your symptoms are severe, you will require admission to hospital for treatment of pneumonia. You will be seen by a doctor regularly who will assess your response to treatment. You will have regular blood tests and your observations will be taken multiple times a day. You might need further scans of your chest.

Whilst in the hospital you might need help with personal activities, like washing and going to the toilet. Mobility and exercise are important parts of your treatment and recovery. Our staff will help you to sit out of bed in a chair and walk around on the wards – this helps the lungs to fully expand and speeds up recovery. Moving around will help to prevent complications which can arise from spending long periods of time in bed, like blood clots in the veins or pressure sores. It is safe to move around even if you are on oxygen.

You might be seen by a physiotherapist. They will help with coughing techniques to make coughing less painful and more productive, as well as helping with general mobility practice.

People who smoke are at a higher risk of developing pneumonia as it damages your lungs. If you smoke, our teams may talk to you about stopping smoking and provide information on where to get free support to do this. We can provide nicotine replacement devices (patches, inhalation devices) to help with cravings whilst in hospital.

Treatment at home - including via our ambulatory assessment unit (AAU) and hospital at home

Some patients do not require admission to hospital for treatment of pneumonia. These patients will be treated at home, or via our AAU and acute hospital at home (AHAH) service.

The AAU provides same day care for patients who do not require hospital admission. The AHAH team is a group of healthcare professionals who can offer short term treatment or care in patients' homes as an alternative to hospital admission.

Patients referred to our AAU will be assessed by a healthcare professional and have various tests to diagnose and manage the pneumonia, as detailed above.

If intravenous (drip) antibiotics or repeat blood tests are required, you may be referred to the AHAH team. This will involve nurses or doctors visiting your home to set up the drips and to check on your progress. They will check your observations, examine your chest and may take additional blood tests. Once satisfied with your recovery, you will be discharged from AHAH in the same way as you would be from the hospital. The treating team will determine if they think hospital at home is a suitable option for you.

At home it is important to rest and drink plenty of fluids to avoid becoming dehydrated. You can take over the counter painkillers such as paracetamol to lower a fever and help with pain.

Recovery - all patients

Although the antibiotics will treat the infection, you may still feel tired and unwell for some time. It is important to gradually return to your everyday activities and not to do too much when you return home.

It is very important that you finish your course of antibiotics even if you start to feel better. If you stop antibiotics too soon, there may be some bacteria remaining, which can cause the pneumonia to come back. These bacteria may also become resistant to antibiotics, making the pneumonia more difficult to treat.

Eating healthily, not smoking and taking light exercise (including deep breathing exercises) will help your recovery.

Pneumonia is a serious illness and can take weeks to months to recover from. Below is a rough timeframe for recovery – this will vary from person to person, and depends on your age, general health, and the severity of the pneumonia:

- 1 week – fever should have settled.
- 4 weeks – reduced production of phlegm from cough.
- 6 weeks – cough should be much better.
- 3 months – most symptoms gone, though may still feel tired.
- 6 months – most people will feel back to normal.

In some cases, we will arrange for you to have a repeat chest X-ray 4 to 6 weeks after being diagnosed with pneumonia. This is at the discretion of your clinician if you have certain risk factors. The repeat chest x-ray is to check that the initial changes seen on the original scan have improved and there are not any other problems with your lungs (e.g. underlying cancer).

If you need a follow up chest X-ray you will be informed via post or text from the radiology department detailing where you need to go for the scan. The result of the chest x-ray will be communicated back to you via post by one of the doctors.

It may be that you need further investigation after the second chest x-ray due to persistent or suspicious changes. If this happens, you will be informed and referred for either a 3rd chest x-ray or CT scan. The results of all your investigations will be relayed back to you and your GP.

Prevention

Keeping a healthy lifestyle is the best way to avoid getting pneumonia. Things you can do include:

- Stopping smoking – smoking damages the lungs which makes it easier to develop pneumonia and other chest infections. For smokers, the best thing you can do to prevent pneumonia is to stop smoking.
- Practice good hand hygiene to prevent the spread of germs.
- Eat healthily and maintain a normal BMI – being overweight puts strain on the lungs and increases the chances of getting pneumonia.
- Avoid excessive alcohol – this weakens the immune system.
- Get vaccinated – if you are in an at-risk group, you will be invited for flu, covid or pneumonia vaccinations. To organise these vaccinations, talk to your GP or local pharmacist.

To help you stop smoking, there are a number of free, local services. Your GP, pharmacist or a health visitor can refer you to these services, or you can call the number below to make an appointment:

Smokefree National Helpline

Telephone: 0300 123 1044

More information on pneumonia is available on the NHS website.

References

1. <https://cks.nice.org.uk/topics/chest-infections-adult/background-information/prevalence/>
2. <https://www.asthmaandlung.org.uk/conditions/pneumonia/diagnosis>
3. https://www.kch.nhs.uk/wp-content/uploads/2023/03/3492-Pneumonia-PIL-v7_FINAL.pdf
4. <https://www.uptodate.com/contents/overview-of-community-acquired-pneumonia-in-adults#H1190177860>
5. <https://www.nhs.uk/conditions/pneumonia/>
6. <https://plr.cht.nhs.uk/download/612/Pneumonia%20%20%20A4>

Further information

If you would like an interpreter, please speak to the department where you are being seen.

Please also tell them if you would like this information in another format, such as:

- Easy Read
- large print
- braille
- audio
- electronic
- another language.

We have tried to make the information in this leaflet meet your needs. If it does not meet your individual needs or situation, please speak to your healthcare team. They are happy to help.

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