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# How is pneumonia treated?

Pneumonia is an inflammation of the lung which is usually caused by an infection. Pneumonia varies a lot in severity with many people making a full recovery, but in some cases it can be life-threatening.

At Patient, we know our readers sometimes want to have a deep dive into certain topics. In this series of articles centred around pneumonia, you can read about the causes, symptoms and treatments - all written by one of our GP experts.

## How to treat pneumonia

### **Antibiotics**

Most cases of pneumonia are caused by bacterial infection which can be treated effectively with antibiotics. They can be taken as tablets, capsules, or liquids. In more severe cases of pneumonia, they may be given intravenously – IV through a drip into the veins.

The choice of antibiotic depends on how severe the pneumonia is, what type of pneumonia it is, and what types of bacteria are found in the local area - including patterns of antibiotic resistance.

In the UK, antibiotics such as amoxicillin, clarithromycin and doxycycline are often used for community-acquired pneumonia. Co-amoxiclav can be used as second-line - if the first antibiotic does not work - or if the pneumonia is associated with aspiration. Different antibiotics are used to treat hospital-acquired pneumonia or ventilator-associated pneumonia because those conditions are caused by different bacteria which require other drugs.

#### **Antivirals**

These medicines can be used for viral pneumonia, depending on the exact virus that is causing the infection. Examples include oseltamivir (Tamiflu®) for the flu (influenza) virus and nirmatrelvir/ritonavir (Paxlovid) for COVID-19 (SARS-CoV-2) virus.

### Oxygen

If pneumonia causes oxygen levels in the blood to drop, extra oxygen can be given. This can be given through oxygen masks or small tubes that sit just inside the nose. This needs to be given in hospital.

### **Fluids**

If people are dehydrated or have signs of sepsis, fluids can be given using a drip for hydration, and to treat dangerously low blood pressure. These need to be given in hospital.

### Painkillers such as paracetamol or ibuprofen

Paracetamol or ibuprofen can treat symptoms of pain and fever from pneumonia.

### Breathing support - ventilation

Sometimes, in severe cases of pneumonia, the lungs become badly affected and can't get enough oxygen into the body. In these cases, breathing machines (ventilators) can be used to support the lungs. These include breathing masks that are used to support breathing whilst awake (non-invasive ventilation) and ventilation using a breathing tube on a ventilator - whilst unconscious. Breathing support is given in special hospital wards, called high-dependency units or intensive care units. Generally, those admitted into these units are very unwell.

### **Chest physiotherapy**

Chest physiotherapy, from specialist therapists, can help treat the symptoms of pneumonia and may improve recovery.

## Home treatment for pneumonia

People with mild pneumonia can usually be treated at home with antibiotics taken by mouth - or sometimes antivirals if there is a viral infection. Drinking plenty of fluids and getting plenty of rest also helps recovery.

# Hospital treatment for pneumonia

People with moderate or severe pneumonia, or people who are at high risk of becoming seriously unwell with pneumonia - those who are on chemotherapy, have weakened immune systems, or are frail - will usually be treated in hospital. As well as antibiotics taken by mouth, hospitals can also give intravenous antibiotics and fluids, oxygen, and breathing support.

## How long does pneumonia last?

The length of symptoms from pneumonia varies from person to person and depending on how severe the pneumonia is. For example, people who have been sick enough to need treatment by intensive care are likely to take longer to recover than people who had mild symptoms treated at home.

### For most people:

- After one week of treatment fevers should have resolved. Some people feel well enough at this stage of recovering from pneumonia to return to their normal activities, but others will require much longer.
- After four weeks chest pain and sputum (phlegm) production should have reduced a lot.
- After six weeks coughing and breathlessness should be much better.
- After three months most symptoms should have gone, but fatigue and exhaustion can still linger.
- After six months most people should feel back to normal.

# Complications of pneumonia

Pneumonia can cause serious complications, such as:

- Empyema a collection of pus around the lungs.
- Lung abscess a collection of pus inside the lung.
- Sepsis.

- Respiratory failure when the lungs are not able to get enough oxygen into the body. This might require oxygen or treatment with a ventilator in intensive care.
- Death pneumonia can be fatal in some cases, even despite treatment.

## **Further reading**

Pneumonia: Diagnosis and management of community- and hospital-acquired pneumonia in adults; NICE Clinical Guideline (December 2014 - last updated July 2022)

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Authored by: Dr Doug McKechnie, MRCGP	Peer Reviewed by: Dr Krishna Vakharia, MRCGP	
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