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Overview: Pneumonia

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Introduction

Pneumonia is an inflammation of the air sacs in the lungs (alveoli) and the surrounding tissue. It often leads to a sudden high fever, the feeling that you are very unwell, a cough and shortness of breath.

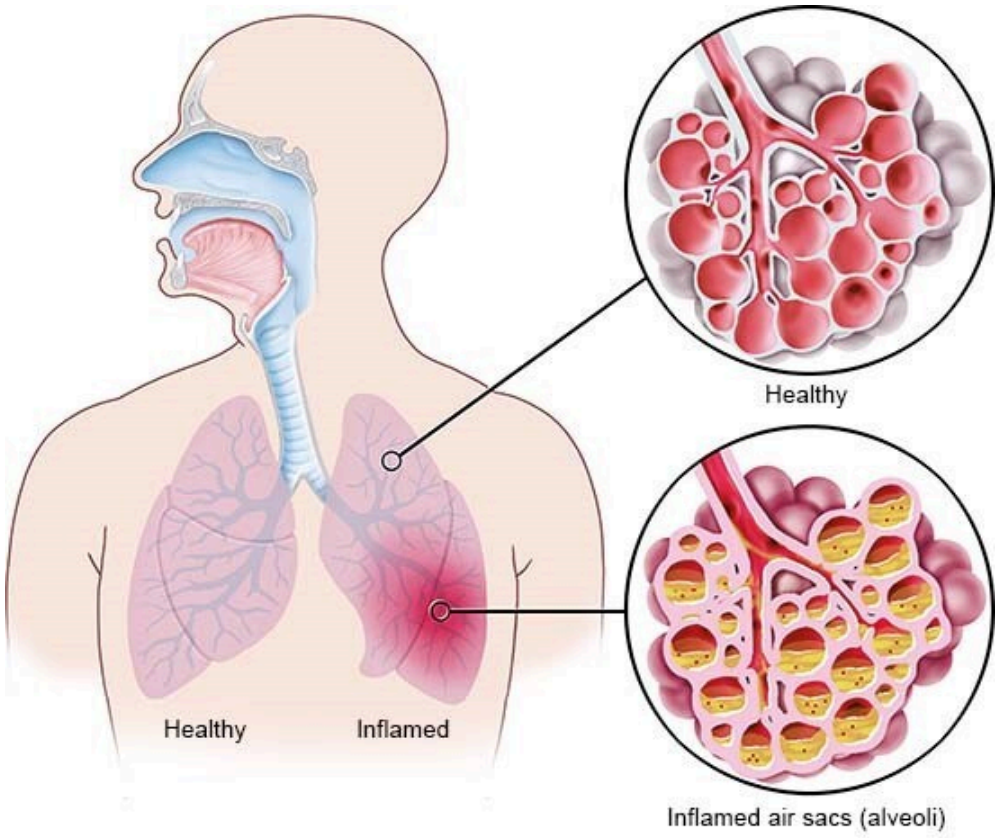
Because pneumonia is usually caused by bacteria, it can generally be treated effectively with antibiotics. Vaccinations that can prevent infection by certain germs are also available.

People who are otherwise in good health generally recover within a few weeks. But pneumonia shouldn't be taken too lightly: It can take one or sometimes even several months until you are back to full strength.

Pneumonia may sometimes lead to life-threatening complications, especially if you have already been weakened by another illness. Pneumonia can also be dangerous in babies and in older age.

At a glance

- Pneumonia is usually caused by bacteria.
- The typical symptoms of pneumonia are a high fever, a cough and feeling weak.
- It is typically treated with antibiotics.
- Washing your hands frequently and paying attention to good hygiene can prevent infection.
- Complications are more common in babies, in older age, and in people who also have other medical conditions.
- Vaccinations are recommended for people who have a higher risk.



Pneumonia in the left lung

Symptoms

The typical signs of pneumonia are:

- High fever and chills
- Feeling weak and very unwell
- Cough with phlegm
- Shortness of breath and rapid breathing
- Racing pulse

The symptoms don't always all occur at the same time. Particularly children and older people may not have certain typical symptoms. Or other, less typical symptoms such as diarrhea, stomach pain or drowsiness and confusion might be more noticeable.

Causes

Pneumonia is usually caused by bacteria. Which kind of bacteria generally depends on the place where you are infected: If you get pneumonia at home, it is likely to be caused by bacteria called pneumococci. If you develop pneumonia in the hospital, it is often caused by other bacteria that are harder to treat.

Viruses are less likely to cause pneumonia, and fungal infections are even less likely to. It is also rare for pneumonia to be caused by things besides germs, such as radiation, inhaled poisonous substances, allergic reactions or blood circulation problems in the lungs.

Risk factors

The risk of developing pneumonia is particularly high in babies and older people (over 65 years). It is also higher if you have a weakened immune system, for example due to diabetes, kidney

problems or cancer. Lung diseases such as asthma and COPD, heart diseases, smoking and certain viral infections such as the flu (influenza) can make people more prone to pneumonia too.

Sometimes germs from the mouth and throat, bits of food or stomach contents can enter the airways and lead to pneumonia. This is known as aspiration pneumonia. The risk is especially high in people who are bedridden or affected by confusion or difficulties swallowing due to dementia or stroke, for instance.

Some medications are also thought to possibly increase the risk of pneumonia, such as medicines that reduce the level of acid in the stomach. But it's still not clear whether they actually have this effect.

Prevalence

Over 500,000 people develop pneumonia each year in Germany, with about 250,000 of them receiving hospital treatment. A total of 20,000 people die of pneumonia per year – especially older people over 65 and people who have been weakened by other diseases. That makes it one of the top ten causes of death in Germany.

Pneumonia is more common in poorer countries, where babies and children are most often affected.

Outlook

The typical signs of pneumonia are a sudden high fever and chills. People with pneumonia start to feel very ill within just a few hours. Symptoms such as a cough with phlegm and shortness of breath are also typical. But it may develop gradually and start with few or only mild symptoms, particularly in older people.

Left untreated, the fever lasts for about a week. Your body temperature then goes back down to normal levels. That can also be accompanied by profuse sweating. The blood vessels in the skin also become wider so that the body can give off excess heat. That can put a lot of strain on the heart and circulation of someone who has already been weakened. So complications are common during this phase of the illness.

Once this phase has passed, your general wellbeing gradually improves and the pneumonia usually goes away completely after about four weeks. But you may still feel run-down and tired for some time, and the cough may also last quite a while.

It's not common for pneumonia to take this course nowadays, though, because it's usually treated immediately. Taking antibiotics usually makes the fever go away more quickly, and helps you to feel better faster. But it's still important not to start doing too much too soon after having pneumonia. Otherwise, it may come back or lead to other complications.

Effects

Pneumonia can lead to inflammation of the membrane that covers the lungs (the pleura). That causes severe pain when you cough or breathe. Fluid can also collect between the lungs and the chest wall, which makes breathing even more difficult. Another possible complication is a lung abscess (the formation of a pus-filled space in the lung).

Life-threatening complications such as heart rhythm problems, circulatory collapse, respiratory or heart failure, or septicemia are also possible. The risk of complications is greater if you

- are under the age of 2 years or over 65,
- have other diseases such as heart or kidney disease,
- have a weakened immune system,

- need artificial respiration,
- caught pneumonia in a hospital, or
- were already being treated with antibiotics in the months before you developed pneumonia.

Diagnosis

Pneumonia can often be diagnosed based on typical symptoms. In a physical examination, the doctor mainly listens carefully to the lungs using a stethoscope and measures your pulse and blood pressure.

An x-ray of the lungs is usually taken, too. The x-ray images can show things like where and how much of the lung tissue is inflamed. A more involved type of x-ray exam, known as a CT scan, is sometimes needed. Changes to the outer edges of the lungs can also be seen using ultrasound.

Blood is taken as well, to measure things like the level of inflammation. Because the inflamed lungs are no longer working properly, doctors may need to check the oxygen content of the blood. That can be done without taking blood, using a technique known as pulse oximetry. This involves placing a clip-like device on one of your fingers. The oxygen content is measured using a light sensor on the device.

Blood, urine and coughed up mucus (phlegm) can be tested in a laboratory to find out exactly which germs are causing the inflammation.

Prevention

The best way to prevent respiratory infections is by practicing good personal hygiene, including regularly washing your hands and keeping your distance from others.

People who have an increased risk of pneumonia or complications are advised to have vaccines too. For example, children can be vaccinated against Haemophilus influenzae bacteria and pneumococcal bacteria. People over the age of 60 are advised to have the flu vaccine as well as the pneumococcal vaccine.

Herbal medicines and dietary supplements such as vitamin products are often said to strengthen the immune system. But no studies have proven that they have any worthwhile benefits – except in people who have a diagnosed vitamin deficiency. That is rare in Germany and similar countries nowadays, and generally only occurs in people who have a very unbalanced diet.

Treatment

Because pneumonia is usually caused by bacteria, it is typically treated with antibiotics. The most suitable type of antibiotic will depend on the type of bacteria.

The treatment with antibiotics lasts about 5 to 7 days. They can be taken as a tablet or syrup. Depending on the severity of the illness and the risk of complications, treatment in a hospital may sometimes be needed. The antibiotic is usually given as an infusion (drip) there.

Some people with severe pneumonia are also given a steroid injection. Sometimes people have to be given extra oxygen through a mask; artificial respiration is less commonly needed.

If the pneumonia was caused by viruses such as flu viruses or the coronavirus SARS-CoV-2, other drugs known as virostatics may be used. Virostatics specifically target viruses. Antibiotics are also used in viral pneumonia, though, with the aim of preventing a bacterial infection from developing too.

Cough medicines from the pharmacy, special breathing exercises and physiotherapy aren't recommended for the treatment of pneumonia.

Further information

When people are ill or need medical advice, they usually go to see their family doctor first. Read about how to find the right doctor, how to prepare for the appointment and what to remember.

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