CONDITION

Viral pneumonia

Viral pneumonia is a lung infection caused by a virus that inflames the air sacs and can make breathing difficult.

WHAT IT IS
Viral infection causing inflammation deep in the lungs

BODY SYSTEM
Lungs and breathing

MAIN SYMPTOMS
Cough, fever, shortness of breath, tiredness

WHAT CAUSES IT
Infection with a respiratory virus

HOW IT IS DIAGNOSED
Chest imaging and respiratory viral testing

MAIN TREATMENT
Supportive care and selected antiviral medicines

CAN IT BE CURED?
Sometimes - most viral infections clear with recovery

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

LONG-TERM OUTLOOK
Most recover; severe illness may cause lasting symptoms

Overview

Viral pneumonia is an infection in the lungs caused by a virus. It affects the small air sacs where oxygen passes into the blood. Inflammation and fluid in these air sacs can make it harder to breathe.

Several viruses can cause pneumonia. Common examples include influenza, respiratory syncytial virus (RSV), SARS-CoV-2, human metapneumovirus, parainfluenza viruses and adenoviruses. The viruses responsible differ with age, season, vaccination history and local outbreaks.

Some cases are mild enough to recover from at home. Others require hospital care, particularly when oxygen levels fall or a person has another condition affecting the heart, lungs or immune system.

Viral pneumonia is not the same as a simple cold. It affects the lower parts of the breathing system rather than mainly the nose and throat. It can also be difficult to distinguish from bacterial pneumonia based on symptoms alone. Occasionally, a bacterial infection develops during or after a viral infection.

Symptoms

Symptoms may begin gradually or develop over a day or two. They often follow symptoms of a respiratory infection, such as a sore throat, runny nose or muscle aches.

Common symptoms include:

Some people wheeze, meaning they make a high-pitched sound when breathing. Breathing may become faster than usual.

Symptoms can look different at different ages. Babies may feed poorly, seem unusually sleepy or irritable, or have pauses in breathing. Older adults may have less obvious fever and may instead develop new confusion, weakness or reduced alertness.

A cough and tiredness can continue after the infection starts to improve. However, worsening breathlessness, chest pain or a fever that returns should be medically assessed.

- A dry or mucus-producing cough
- Fever or chills
- Shortness of breath
- Unusual tiredness or weakness
- Chest discomfort, especially when coughing or breathing deeply
- Headache, muscle aches or reduced appetite

Causes and risk factors

Viral pneumonia develops when a virus reaches the lower airways and causes inflammation in lung tissue. Most respiratory viruses spread through droplets and smaller airborne particles released when an infected person breathes, talks, coughs or sneezes. Some also spread from contaminated hands to the eyes, nose or mouth.

Anyone can develop viral pneumonia, but serious illness is more likely in:

Living in a shared or crowded setting may increase exposure to respiratory viruses. The risk can also rise during seasonal outbreaks.

Having a risk factor does not mean that severe pneumonia is certain. People without known risk factors can also become seriously unwell.

- Babies and young children
- Older adults
- Pregnant people
- People with asthma, chronic obstructive pulmonary disease or another lung condition
- People with heart, kidney, liver or neurological conditions
- People with diabetes
- People whose immune system is weakened by a condition or treatment
- People who smoke or are regularly exposed to tobacco smoke

Diagnosis

A healthcare professional will ask how the symptoms began, whether they are getting worse and whether there has been contact with anyone who has a respiratory infection. They may listen to the lungs, count the breathing rate and check the heart rate, temperature and blood oxygen level.

A chest X-ray can show areas of inflammation consistent with pneumonia. A chest CT scan gives more detailed images but is usually reserved for situations where the diagnosis is uncertain or complications are suspected.

A swab from the nose or throat may be tested for viruses using a PCR or antigen test. PCR tests look for viral genetic material. Detecting a virus supports the diagnosis, although it does not always prove that the virus is the only cause of the lung inflammation.

Blood tests may help assess inflammation, organ function and the severity of illness. Blood or mucus cultures may be used when bacterial infection is also suspected.

A pulse oximeter is a small device placed on a finger to estimate blood oxygen. Its reading must be considered alongside symptoms because cold fingers, movement, nail products and skin pigmentation can affect accuracy.

Treatment and management

Treatment depends on the virus, the severity of the illness and the person's risk of complications.

Many people with mild viral pneumonia recover with supportive care. This means helping the body while the immune system clears the infection. It may include rest, adequate fluids and appropriate non-prescription medicine for fever or discomfort. Medicine labels should be followed, and a pharmacist or healthcare professional can advise if pregnancy, another condition or another medicine affects what is suitable.

Antibiotics like amoxicillin or doxycycline do not treat viruses. They may be given if bacterial pneumonia is also suspected or confirmed. A change in symptoms during recovery may lead to further assessment for a bacterial infection.

Antiviral medicines are available for some infections, including influenza and COVID-19. They are most useful for certain people and may need to be started within a particular period. The choice is based on the virus, illness severity, other health conditions and possible medicine interactions. Antivirals like acyclovir or oseltamivir are not available or routinely used for every virus that causes pneumonia.

Hospital treatment may include oxygen, fluids and closer monitoring. People with severe breathing problems may need respiratory support, such as high-flow oxygen or mechanical ventilation. Mechanical ventilation uses a machine to help move air into and out of the lungs.

Steroids like prednisone or hydrocortisone are used in selected situations, including some cases of severe COVID-19 requiring oxygen. They are not a routine treatment for every type of viral pneumonia.

Complications

Most people recover without major complications. The risk is higher when pneumonia is severe or when the heart, lungs or immune system are already under strain.

Possible complications include:

Some people continue to have breathlessness, coughing, reduced stamina or tiredness after the infection has cleared. Recovery may take longer after severe pneumonia or a hospital stay.

- Low blood oxygen
- Respiratory failure, when the lungs cannot provide enough oxygen
- A bacterial lung infection developing alongside the viral infection
- Sepsis, an extreme body-wide response to infection
- Fluid around the lung, called a pleural effusion
- Acute respiratory distress syndrome, a severe form of lung inflammation

- Worsening of asthma, heart failure or another existing condition

Prevention

Viral pneumonia cannot always be prevented, but the chance of infection or serious illness can often be reduced.

Vaccines are available against influenza and COVID-19. RSV vaccination or preventive antibody treatment is available for some age and risk groups. Eligibility and timing differ by country, age, pregnancy status and health history.

Other practical measures include:

Covering coughs and sneezes and cleaning frequently touched surfaces may also reduce spread. These steps lower risk but cannot remove it completely.

- Washing or sanitising hands regularly
- Avoiding touching the eyes, nose and mouth with unwashed hands
- Improving indoor ventilation
- Avoiding close contact with people who are acutely unwell where possible
- Following local advice about masks during outbreaks or in healthcare settings
- Staying away from others while feverish or acutely unwell
- Not smoking and avoiding second-hand smoke

Living with it and what to expect

The course of viral pneumonia is influenced by the virus, the severity of lung inflammation and general health. Fever and body aches may improve before the cough and tiredness do.

People recovering at home often need to return to normal activity gradually. Trying to do too much can worsen fatigue or breathlessness. Eating small meals, drinking enough fluid and taking regular rest breaks may be easier during early recovery.

A cough can last for several weeks because inflamed airways take time to settle. Stamina may also return slowly. After severe illness, rehabilitation or breathing exercises may be offered to rebuild strength and confidence with activity.

Follow-up may be advised if symptoms are slow to resolve, there are ongoing oxygen needs, or another lung condition is present. Repeat chest imaging is not needed for everyone. It may be

arranged when symptoms persist, the original X-ray showed an area that needs checking, or there are risk factors for another lung problem.

Some viral infections, especially COVID-19, can be followed by longer-lasting symptoms. These may include fatigue, breathlessness, poor concentration or changes in smell. Persistent symptoms deserve assessment rather than being assumed to be part of normal recovery.

When to get medical help

Seek emergency help now if you or someone you are caring for has:

Seek prompt medical advice for worsening shortness of breath, dehydration, coughing up blood, a fever that returns after improving, or chest pain when breathing. New confusion in an older adult also needs prompt assessment.

Babies, pregnant people, older adults, people with weakened immune systems and those with serious heart or lung conditions should seek advice early if pneumonia is suspected.

Arrange routine follow-up if recovery has stalled, coughing or breathlessness is not gradually improving, or tiredness continues to limit normal activities. Follow any individual oxygen-monitoring plan provided by a healthcare professional.

- Severe difficulty breathing, gasping or an inability to speak normally
- Blue, grey or unusually pale lips, face or skin
- New severe confusion, collapse or difficulty waking
- Severe or persistent chest pressure
- A seizure
- A baby with pauses in breathing

Common questions

Is viral pneumonia contagious?

The pneumonia itself is not passed between people, but the virus causing it often is. How long someone remains contagious depends on the virus and their immune system. Following infection-control advice for the identified virus can help protect others.

How long does viral pneumonia last?

Fever and the worst breathing symptoms may improve over days, but cough, weakness and reduced stamina can last for weeks. Severe pneumonia may take longer to recover from.

Symptoms that worsen instead of gradually improving need medical assessment.

How can I tell viral pneumonia from bacterial pneumonia?

Symptoms overlap too much to tell reliably at home. Both can cause fever, cough, chest discomfort and breathlessness. Examination, chest imaging and laboratory tests may help identify the cause, although a definite distinction is not always possible.

Do antibiotics help viral pneumonia?

Antibiotics do not kill viruses. They may be needed when a bacterial infection is also suspected or confirmed. Taking antibiotics when they are not needed can cause side effects and contribute to antibiotic resistance.

Can viral pneumonia come back?

A person can develop pneumonia again from the same type of virus or from a different infection. Repeated episodes may lead to assessment for swallowing problems, an immune condition or an underlying lung problem.

Can I exercise while recovering?

Gentle movement may be reasonable once fever has settled and breathing is comfortable at rest. Activity should increase gradually. Stop and seek advice if exercise causes marked breathlessness, chest pain, dizziness or a clear setback in symptoms.

Sources

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