CONDITION

Parainfluenza

Parainfluenza is a contagious respiratory infection that can cause cold symptoms, croup, bronchitis, or pneumonia.

WHAT IT IS
Contagious viral respiratory infection

BODY SYSTEM
Lungs and breathing passages

MAIN SYMPTOMS
Cough, runny nose, fever, hoarse voice

WHAT CAUSES IT
Infection with human parainfluenza viruses

HOW IT IS DIAGNOSED
Respiratory swab tested by PCR

MAIN TREATMENT
Supportive care; steroids for croup

CAN IT BE CURED?
Yes - the immune system usually clears it

IS IT AN EMERGENCY?
Sometimes - trouble breathing requires urgent care

LONG-TERM OUTLOOK
Most people recover fully without lasting problems

Overview

Parainfluenza is a respiratory infection caused by human parainfluenza viruses, often shortened to HPIVs. These viruses infect the nose, throat, voice box, windpipe, and sometimes the lungs.

Despite the name, parainfluenza is not influenza, or "the flu." The viruses are different, and the seasonal flu vaccine does not protect against parainfluenza.

Many infections feel like a common cold. Symptoms may include a runny nose, cough, sore throat, mild fever, and tiredness. In children, parainfluenza is an important cause of croup. Croup causes swelling around the voice box and windpipe, leading to a barking cough, hoarse voice, and sometimes noisy breathing.

Parainfluenza can also cause bronchiolitis, bronchitis, or pneumonia. These affect the smaller breathing tubes or lung tissue. More serious illness is more likely in babies, older adults, and people with weakened immune systems or long-term heart or lung conditions.

There are four main types of human parainfluenza virus. Different types circulate at different times, so infections can occur throughout the year.

Symptoms

Symptoms usually begin like those of an upper respiratory infection. They can differ according to age, the virus type, and which part of the airway is affected.

Common symptoms include:

Croup most often affects young children. Its typical features are a harsh, barking cough and a hoarse voice. Some children develop stridor, a rough or high-pitched sound when breathing in. Stridor may be more noticeable when a child is crying or upset.

If the infection reaches the smaller airways or lungs, symptoms may include wheezing, faster breathing, shortness of breath, chest discomfort, or difficulty feeding. Babies may show fewer obvious cold symptoms and instead feed poorly, seem unusually sleepy, or have pauses in breathing.

Adults often have mild cold-like symptoms. However, older adults and people with weakened immune systems can develop lower respiratory infections, including pneumonia.

Symptoms alone cannot reliably show which respiratory virus is responsible. Influenza, respiratory syncytial virus, COVID-19, and several other infections can cause similar problems.

- Runny or blocked nose
- Cough
- Fever
- Sore throat or hoarse voice
- Headache, reduced appetite, or tiredness

Causes and risk factors

Parainfluenza is caused by infection with a human parainfluenza virus. It spreads through respiratory particles released when an infected person coughs, sneezes, talks, or breathes near someone else. It can also spread when virus-containing secretions reach the eyes, nose,

or mouth from hands or contaminated objects.

People are usually most contagious around the early part of the illness. Young children and people with weakened immune systems may release the virus for longer.

Anyone can become infected. Previous infection does not create complete lifelong protection, so parainfluenza can occur more than once. Repeat infections are often milder, but this is not guaranteed.

The chance of exposure is higher with close contact in places such as households, childcare settings, schools, and healthcare facilities. The risk of more serious illness is higher in:

These risk factors do not mean that severe illness will occur. Most infections remain mild and clear without complications.

- Babies and very young children
- Older adults
- People with weakened immune systems, including some transplant recipients
- People with long-term lung or heart conditions
- People who have difficulty clearing mucus or protecting their airway

Diagnosis

Parainfluenza is often diagnosed from symptoms and an examination, especially when a child has the typical barking cough of croup. Testing is not usually needed for a mild infection that is improving normally.

A healthcare professional may listen to the lungs, check breathing effort and oxygen level, and look for signs of dehydration. With croup, the sound of breathing at rest and the amount of chest movement help show how narrowed the airway may be.

When confirming the virus would affect care or infection-control decisions, a sample can be taken from the nose or throat. A laboratory test called PCR looks for the virus's genetic material. Some respiratory panels test for parainfluenza and several other viruses at the same time.

Testing is more likely during severe illness, hospital admission, an outbreak, or illness in someone with a weakened immune system. A chest X-ray is not routinely needed for uncomplicated croup or a mild upper respiratory infection. It may be considered when pneumonia, another diagnosis, or a complication is suspected.

Treatment and management

There is no routinely used antiviral treatment that cures parainfluenza. Most mild infections are managed with rest, fluids, and treatment of uncomfortable symptoms while the immune system clears the virus.

Drinking regularly helps prevent dehydration. Smaller, more frequent feeds may be easier for a baby or child with a blocked nose or cough. Fever or discomfort may be treated with an age-appropriate medicine when suitable, following the product instructions or advice from a healthcare professional.

Antibiotics like amoxicillin or doxycycline do not treat parainfluenza because antibiotics work against bacteria, not viruses. They may be needed only if a separate bacterial infection is diagnosed.

A child with croup may be given a corticosteroid like prednisone or hydrocortisone . This medicine reduces swelling in the airway and can improve symptoms over several hours. Moderate or severe croup may be treated with inhaled epinephrine in a medical setting. Because its effect can wear off, observation is usually needed afterward.

Keeping a child calm can help because crying may make noisy breathing worse. Hold or position the child in the way that feels easiest for them. Steam and humidified air have not been shown to reliably reduce croup symptoms, and hot steam can cause burns.

Hospital treatment may include oxygen, fluids through a vein or feeding tube, suctioning of nasal secretions, and breathing support. This is mainly needed when breathing, oxygen levels, hydration, or feeding are significantly affected.

People with severely weakened immune systems may need specialist management. Treatment decisions in this group are based on the person's immune condition, the affected part of the respiratory tract, and the severity of the infection.

Complications

Most people recover without complications. When complications occur, they are usually related to swelling of the airway, infection in the lungs, or difficulty taking in enough fluid.

Possible complications include:

Severe airway obstruction from croup is uncommon, but it requires urgent treatment. Babies, older adults, and people with weakened immune systems may need closer monitoring because their condition can worsen more quickly or take longer to clear.

- Significant narrowing of the airway from croup
- Bronchiolitis, involving inflammation of the smallest breathing tubes
- Pneumonia, involving infection and inflammation in the lungs
- Low oxygen levels or respiratory failure
- Dehydration from fever, poor feeding, or difficult breathing
- A secondary bacterial infection, such as an ear infection

Prevention

There is currently no licensed vaccine that prevents human parainfluenza infection. The seasonal influenza vaccine remains important for preventing influenza, but it does not prevent parainfluenza.

You can reduce spread through practical respiratory precautions:

A well-fitting mask can reduce the spread of respiratory particles, particularly in crowded indoor spaces or around someone at higher risk of serious infection.

Healthcare facilities may use additional precautions when a patient has suspected or confirmed parainfluenza. This is especially important in transplant, cancer, newborn, and long-term care units.

- Wash your hands regularly or use alcohol-based hand sanitiser
- Cover coughs and sneezes with a tissue or your elbow
- Avoid sharing cups, utensils, or items that have touched the mouth
- Clean frequently touched surfaces
- Improve indoor ventilation where possible
- Avoid close contact with people at higher risk while you are unwell
- Stay home when feverish or too unwell for normal activities

Living with it and what to expect

Parainfluenza is usually a short-term infection. Cold-like symptoms and croup often improve over several days, although a cough or tiredness may last longer. Recovery from pneumonia or a severe lower respiratory infection can take more time.

Symptoms may change during the illness. A runny nose or mild fever can appear before a

barking cough or hoarse voice. Croup symptoms are often more noticeable at night. Breathing that is comfortable during the day can become noisier when a child is upset or lying down.

Most people return to their usual health without long-term effects. Parainfluenza does not normally become a chronic infection. People with severely weakened immune systems may shed the virus for longer and may have a more prolonged or complicated recovery.

Having parainfluenza once does not prevent every future infection. There are several virus types, and immune protection can weaken. Reinfection may happen months or years later.

Routine follow-up is not always needed after a mild infection that is clearly improving. Arrange follow-up if the cough, wheeze, breathing, feeding, or energy level is not returning toward normal, or if symptoms improve and then become worse again.

When to get medical help

Seek emergency help for signs that the body is not getting enough air or that the airway may be severely narrowed. These include:

A child who is struggling to breathe should be kept as calm as possible while emergency help is arranged. Do not force food, drink, or an examination of the throat.

Get prompt medical advice if breathing is faster or harder than usual, wheezing is new, a child has stridor at rest, or symptoms are steadily worsening. Babies under 3 months with a fever should also be assessed promptly.

Contact a healthcare professional if there are signs of dehydration, such as very little urine, a dry mouth, no tears when crying, or difficulty keeping fluids down. Medical review is also appropriate for a persistent or returning fever, chest pain, worsening cough, or poor feeding.

People with a weakened immune system, a recent transplant, or a serious heart or lung condition should seek advice earlier in the illness, even when symptoms initially seem mild.

- Blue, grey, or unusually pale lips or skin
- Severe difficulty breathing or pauses in breathing
- Marked pulling in between or under the ribs
- Stridor that is constant at rest and getting worse
- Drooling with difficulty swallowing
- Extreme sleepiness, poor responsiveness, or collapse

Common questions

Is parainfluenza the same as influenza?

No. Human parainfluenza viruses and influenza viruses are different groups of viruses. They can cause similar respiratory symptoms, but parainfluenza is particularly associated with croup in children. A flu vaccine does not protect against parainfluenza.

How long does parainfluenza last?

Many mild infections improve over several days. A cough can continue after fever, congestion, and breathing symptoms have settled. Severe lower respiratory infections may take longer to recover from, especially in babies, older adults, and people with weakened immune systems.

Is parainfluenza contagious?

Yes. It spreads through respiratory particles and through hands or objects contaminated with respiratory secretions. Spread is more likely during close indoor contact. Good hand hygiene, ventilation, and avoiding close contact while unwell can reduce transmission.

Can adults get parainfluenza?

Yes. Adults can be infected more than once. Most adult infections resemble a cold, but older adults and people with weakened immune systems or long-term heart or lung conditions can become more seriously unwell.

Does parainfluenza always cause croup?

No. Many infections cause only cold-like symptoms. Croup develops when the infection causes swelling around the voice box and windpipe, most often in young children. Parainfluenza can also cause bronchitis, bronchiolitis, or pneumonia.

Do antibiotics treat parainfluenza?

No. Antibiotics do not work against viruses. They are used only when a healthcare professional identifies or strongly suspects an additional bacterial infection.

Sources

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