CONDITION

Pertussis

Pertussis is a contagious bacterial airway infection that causes prolonged coughing fits.

WHAT IT IS
Highly contagious bacterial airway infection causing prolonged cough

BODY SYSTEM
Lungs and breathing

MAIN SYMPTOMS
Runny nose, coughing fits, whoop, vomiting

WHAT CAUSES IT
Bordetella pertussis bacterial infection

HOW IT IS DIAGNOSED
Nasopharyngeal PCR or culture

MAIN TREATMENT
Antibiotics and supportive care

CAN IT BE CURED?
Yes - infection clears with time

IS IT AN EMERGENCY?
Sometimes - breathing pauses or blue skin

LONG-TERM OUTLOOK
Most recover fully; cough can last months

Overview

Pertussis, also called whooping cough, is a highly contagious infection of the airways. It is caused by the bacterium Bordetella pertussis .

The infection often begins like a common cold. After several days, repeated coughing fits may develop. Some people make a sharp "whoop" as they breathe in after coughing, but this does not happen to everyone. Babies may have pauses in breathing instead of a noticeable cough.

Pertussis matters because it spreads easily and can cause weeks or months of coughing. It can be especially serious in young babies, particularly those who are too young to have received their first vaccinations. Vaccination reduces the risk of infection and serious illness, although protection can weaken over time.

Antibiotics like amoxicillin or doxycycline can stop the bacteria from spreading. They are most

likely to shorten the illness when started early, before severe coughing fits have developed.

Symptoms

Symptoms usually begin several days after exposure, but they can take up to about three weeks to appear.

Early symptoms often resemble a mild cold:

After one to two weeks, the cough may become more severe. You may have rapid coughs close together, known as a coughing fit or paroxysm. These fits can make it difficult to breathe normally until the coughing stops.

Other symptoms can include:

The classic whoop is not always present. Vaccinated children and adults may have a milder illness that looks like a persistent cough. Babies may not cough forcefully. Instead, they may gag, feed poorly, turn blue or have apnea, meaning brief pauses in breathing.

The cough usually becomes less frequent over time. However, coughing fits may return temporarily during later colds or other airway infections.

- Runny or blocked nose
- Sneezing
- Mild fever
- Watery or red eyes
- Occasional cough
- A high-pitched whoop while breathing in
- Vomiting during or after coughing
- Thick mucus
- Exhaustion after a coughing fit
- A red or bluish face during coughing
- Trouble sleeping because of the cough

Causes and risk factors

Pertussis is caused by Bordetella pertussis . These bacteria attach to the lining of the airways and release substances that damage it and trigger inflammation.

The infection spreads mainly through droplets and small respiratory particles released when an infected person coughs or sneezes. Close, prolonged contact makes transmission more likely. It often spreads between people living in the same household.

A person can spread pertussis before it is clear that the illness is more than a cold. Without treatment, contagiousness can continue for several weeks after the cough begins.

Anyone can develop pertussis. Infection is more likely when vaccination is incomplete or when protection from an earlier vaccination or infection has weakened. Having had pertussis does not provide lifelong immunity, so it is possible to get it again.

The risk of severe complications is highest in babies, especially those younger than 6 months. Pregnant people near the end of pregnancy and people who spend time with young babies also need careful assessment after exposure because infection could reach the baby.

Diagnosis

A healthcare professional will ask when the cough began, what the coughing fits are like, whether you have been exposed to pertussis and whether your vaccinations are up to date.

Testing usually uses a sample taken from the back of the nose and upper throat. This is called a nasopharyngeal sample.

A polymerase chain reaction, or PCR, test looks for genetic material from the bacteria. It is commonly used because it can provide results more quickly than a culture. PCR is generally most useful during the first three to four weeks of coughing.

A culture attempts to grow the bacteria from the sample. It is very specific, meaning a positive result strongly supports the diagnosis. However, it takes longer and is most likely to find the bacteria during the first two weeks of illness.

Blood tests for antibodies may sometimes help later in the illness, but their availability and interpretation differ. Previous vaccination can affect some results.

Testing becomes less likely to detect the bacteria after antibiotics have started or after the cough has continued for several weeks. If pertussis is strongly suspected, treatment or public health precautions may begin before results return.

Treatment and management

Antibiotics are used to clear the bacteria and reduce transmission. Macrolide antibiotics are commonly used. A different type may be considered when a macrolide is unsuitable.

Treatment started during the early, cold-like stage may make the illness less severe. Once repeated coughing fits are established, antibiotics may not stop the cough quickly because the airway lining needs time to recover. They can still be important for limiting spread, particularly when vulnerable people may have been exposed.

The antibiotic chosen and the length of treatment are based on factors such as age, pregnancy, allergies and other medicines. Take any prescribed course exactly as directed.

Supportive care focuses on breathing, hydration and nutrition. Helpful measures may include drinking regularly, eating smaller meals to reduce vomiting, resting and avoiding cigarette smoke, vaping aerosols and other airway irritants.

Cough medicines generally do not control pertussis coughing fits well. Some products are unsafe for young children, so do not give a child an over-the-counter cough medicine unless a qualified healthcare professional has recommended it.

Babies and people with severe symptoms may need hospital care. Treatment there can include oxygen, monitoring for pauses in breathing, fluids and careful removal of mucus.

Public health teams may contact you because pertussis is a reportable infection in many places. People treated with an effective antibiotic are generally considered no longer contagious after five full days of treatment. Without treatment, precautions may be needed for 21 days after the cough began. Follow the instructions given locally about school, childcare, work and contact with others.

Close contacts may be offered preventive antibiotics, particularly if they are at high risk of severe illness or could pass the infection to a young baby.

Complications

Most older children and adults recover without lasting health problems, although the prolonged cough can be exhausting.

Forceful coughing can cause dehydration, sleep loss, fainting, urinary leakage, nosebleeds or bruising. Less commonly, it can cause a broken rib, especially in an older adult. Pneumonia may develop because of pertussis itself or another infection.

Babies have a higher risk of serious complications. These can include:

Pertussis can be fatal, but this is uncommon overall and occurs mainly in very young babies. Early assessment is important if a baby has been exposed or develops symptoms.

- Apnea or low oxygen levels

- Pneumonia
- Poor feeding and dehydration
- Seizures
- Brain problems caused by low oxygen or severe illness

Prevention

Vaccination is the main way to prevent pertussis and reduce the risk of severe illness. It does not prevent every infection, and protection gradually weakens, so booster vaccinations are needed.

Children usually receive pertussis vaccination as part of a combined vaccine. Older children and adults may receive a booster containing tetanus, diphtheria and pertussis protection. Exact schedules differ between countries.

Vaccination during each pregnancy helps transfer protective antibodies to the baby before birth. In the United States, the recommended timing is between 27 and 36 weeks of pregnancy, preferably earlier in that period. Recommendations elsewhere may use a different window.

Vaccination during pregnancy helps protect a baby during the first months of life, when the risk of severe pertussis is greatest. Vaccinating family members is useful but does not replace vaccination during pregnancy.

Other ways to limit spread include covering coughs, washing hands and improving indoor ventilation. If pertussis is suspected, avoid contact with babies and pregnant people until you have received advice about testing, treatment and how long to stay away.

Preventive antibiotics may be recommended after close exposure. They are not needed after every casual contact.

Living with it and what to expect

Pertussis often follows three stages. It starts with cold-like symptoms, moves into a period of repeated coughing fits and then gradually improves. The entire illness can last six to ten weeks, and sometimes longer.

Coughing fits may become less frequent before they become less intense. Exercise, laughter, cold air or another respiratory infection can briefly trigger coughing during recovery. This does not necessarily mean that the bacterial infection has returned.

Sleep disruption, vomiting and tiredness may affect school, work and daily activities for several weeks. Drinking regularly and having smaller meals can make recovery easier. If vomiting is frequent or you cannot maintain hydration, seek medical advice.

Most people eventually recover fully, and lasting lung damage is not typical. Recovery can be slower after severe illness or pneumonia. Immunity after infection is not permanent, so future vaccination remains important.

Routine follow-up may be needed if the cough is not improving, complications developed or you need advice about returning to work, school or childcare.

When to get medical help

Call emergency services if you or someone with you:

A baby with pauses in breathing, colour changes or feeding-related breathing problems needs emergency assessment even if there is little or no cough.

Seek prompt medical advice if a baby has been exposed to pertussis or develops a new cough. You should also seek timely advice if you are pregnant, live with a young baby, have a weakened immune system or have a cough after known exposure.

Arrange medical assessment if coughing fits cause vomiting, fainting or difficulty drinking, or if the cough is getting worse rather than improving. Fever, chest pain, shortness of breath between coughing fits or signs of dehydration may suggest a complication.

For routine follow-up, contact your healthcare service if a persistent cough is affecting sleep or daily life, if test results have not been explained, or if you need guidance about vaccination and returning to normal activities.

- Has severe trouble breathing
- Has repeated pauses in breathing
- Develops blue, grey or very pale lips or skin
- Has a seizure
- Becomes difficult to wake or does not respond normally

Common questions

Do you always whoop when you have whooping cough?

No. Babies, vaccinated people and adults may not make the classic whooping sound. Some

people have only a prolonged cough, while babies may have pauses in breathing instead of forceful coughing.

How long is pertussis contagious?

It is most contagious early, when symptoms look like a cold. Effective antibiotics usually end contagiousness after five full days of treatment. Without treatment, a person may remain contagious for about 21 days after the cough begins.

Why am I still coughing after antibiotics?

Antibiotics remove the bacteria, but they do not immediately repair the irritated airway lining. If treatment begins after coughing fits have developed, the cough may continue for weeks even though you are no longer contagious.

Can I get pertussis if I was vaccinated?

Yes. Vaccination greatly reduces the risk of severe illness, but protection weakens over time and no vaccine prevents every infection. Vaccinated people often have milder or less typical symptoms.

Can you get whooping cough more than once?

Yes. Protection after infection is not lifelong. You can develop pertussis again, which is why vaccination and recommended boosters remain important after recovery.

How long does whooping cough last?

The most severe coughing often lasts several weeks. A milder cough may continue for two to three months, sometimes with brief setbacks during another cold. The overall course differs between people.

Sources

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