

Pertussis (Whooping Cough)

Pertussis has the potential to be a serious respiratory infection, especially in young infants. It is caused by a family of bacteria called *Bordetella pertussis*. Pertussis frequently causes intense coughing attacks. It is sometimes called whooping cough because children may “whoop” as they gasp for breath after a coughing attack. Infants with pertussis may need hospital treatment.

What is pertussis?

Pertussis can be a serious childhood disease. Each year, it affects millions of children around the world and causes thousands of deaths. Fortunately, because of the availability of effective vaccines, pertussis is now relatively rare in the United States and other developed countries.

However, pertussis may still occur, even in vaccinated children. The main symptom is attacks of relentless coughing, usually preceded by a runny, stuffy nose. Antibiotics may improve your child’s condition and will prevent spreading the disease to others. Family members and others in close contact with a child with pertussis should receive antibiotics as well.

What does it look like?

Pertussis usually starts out with symptoms of a cold. Your child may have a stuffy or runny nose, sometimes with fever, sneezing, and watery eyes. The cold symptoms seem to get better after a few days.

Following these symptoms, your child begins coughing. A dry, hacking cough turns into attacks of coughing. After a coughing spell, your child may “whoop” as he or she gasps for air. The coughing fits may be followed by vomiting. After the coughing spell passes, your child will feel exhausted.

Coughing attacks become worse and more frequent, sometimes occurring as often as once an hour. Gradually, the attacks become less frequent, shorter, and less severe as your child starts to recover, but the cough may last several weeks.

The symptoms may be different in:

- *Children who have been vaccinated against pertussis.* Symptoms are usually milder.
- *Infants with pertussis.* In babies younger than 3 months old, “whooping” is less common. The infant may experience choking or gasping. Symptoms may last a month or longer.
- *Older children and teens.* Pertussis may look like a regular cold, but often the cough last longer—usually two weeks or more.

What causes pertussis?

Pertussis is caused by specific bacteria called *Bordetella pertussis*. Other bacteria and viruses may cause similar attacks of coughing and other symptoms.

What are some possible complications of pertussis?

- Especially in infants who are less than 3 or 4 months old, pertussis can be a serious disease. Apnea (periods without breathing) may occur. Pertussis is especially dangerous in premature infants.
- Many babies with pertussis need hospital treatment, occasionally including the use of mechanical ventilation to help them breathe. Although death is rare with proper medical care, it can occur.
- Pneumonia (infection of the lungs) caused by other bacteria.
- Other complications may be related to severe coughing, such as bloody noses, pneumothorax (air trapped inside the chest), or hernias.
- Other infections, such as middle-ear infections (otitis media), may occur.
- Although they are relatively uncommon, seizures and other complications involving the brain and nervous system can occur.

What puts your child at risk of pertussis?

- *The main risk factor for pertussis is not receiving proper childhood vaccinations.* Diphtheria, tetanus, pertussis (DTaP) vaccine is recommended for nearly all children. Your child should receive four doses of DTaP vaccine by age 18 months and another dose between 4 and 6 years.
- Vaccination programs for all children have reduced the number of cases of pertussis in the United States by 99%. Although a vaccinated child may still catch pertussis, the disease is likely to be much less severe.
- The *Bordetella* bacteria that cause pertussis spread easily from person to person. If your child is infected, everyone in your family and anyone with significant exposure to your child may need to take antibiotics to prevent infection.
- Pertussis most often occurs from summer to early fall.

How is pertussis diagnosed and treated?

- The diagnosis is suspected from the child's symptoms and confirmed by tests done on the mucous from the nose and throat. A complete blood count (CBC) can also help with the diagnosis.
- Infants with pertussis, especially those less than 3 months old, often need hospital treatment. Even if the baby seems OK between coughing attacks, pertussis can be dangerous because apnea (cessation of breathing) can occur.
- *Hospital care* is needed:
 - If your child's coughing attacks are severe.
 - If your child's skin begins to turn blue during attacks. This is called cyanosis, and it means your child is not getting enough oxygen. *This is an emergency!* Call 911 or another emergency number.
 - If your child cannot recover or remains exhausted after an attack. "Whooping" can actually be a good sign; it means that your child is strong enough to regain his or her breath after an attack.
 - If your child becomes unconscious (rather than just exhausted) after an attack.
 - In the hospital, your child may need extra oxygen to prevent complications related to inadequate oxygen levels. Rarely, if your child is having a lot of trouble breathing, mechanical ventilation (a breathing machine) may be needed.
- *Antibiotics.* If your child has definite or even possible pertussis, he or she will receive an antibiotic to kill the *Bordetella* bacteria. An antibiotic, usually erythromycin is given, although your doctor may choose a different medication. Additional antibiotics may be used if there is any chance that your child is developing pneumonia caused by other bacteria.
- *Isolation.* Your child needs to be isolated for 5 days after beginning antibiotic treatment to keep the infection from spreading to others. If your child is in the hospital, visits from family members may be limited. This is done to

prevent any possibility of carrying the pertussis germ into or out of the hospital.

- *Family members may need treatment too.* Because the *Bordetella* bacteria spread so easily, you or other members of your family should also receive antibiotic treatment. Make sure you take the full amount of antibiotic prescribed. Additional vaccinations may be recommended for young children. If your child has been in close contact with other children or adults, especially at day care or school, they may also need treatment.
- *Home care.* If your child is well enough to be treated at home or to be discharged from the hospital, you will receive detailed instructions on home care, including keeping track of your child's coughing spells to make sure he or she is getting better. You should eliminate all smoking as well as any other sources of irritants in the air. Keep your home as quiet as possible, because excessive stimulation may trigger coughing spells.

When should I call your office?

When caring for your child with pertussis at home, call our office immediately if any of the following occurs:

- Your child's pertussis seems to be getting worse (coughing attacks become more frequent and severe) rather than better.
 - Your child develops a new fever, or fast or noisy breathing. These may be signs of pneumonia.
 - Your child develops any other new symptoms, such as earache.
- The following situations are emergencies!* Call 911 or another emergency number:
- Your child stops breathing.
 - Your child seems to be having trouble recovering after a coughing attack, especially if his or her skin is turning blue.
 - Your child becomes unconscious or confused after a coughing attack.