

## Human pathogen information sheet – vaccinations keep you safe!

### What is whooping cough?

Whooping cough (pertussis) is caused by bacteria. It is highly contagious. Globally, whooping cough is one of the most common respiratory infections. The whooping cough pathogen produces poisons that damage the mucous membranes lining the airways. In Germany, children and adolescents, in particular, are affected by whooping cough, but frequently also adults. Babies, who do not yet have vaccination protection, are especially at risk.

### How is whooping cough transmitted?

#### *Person-to-person*

The whooping cough pathogen is transmitted from person to person as an airborne infection. Coughing, sneezing or talking produces tiny droplets from the nasal cavity and throat: by these the bacteria can be spread up to a metre through the air, where they can then be inhaled. Virtually every contact between an unprotected person and an infected person leads to infection.

The pathogens may also be carried by a healthy person with vaccination protection for a short while. While the immunised person does not fall ill, they can nonetheless pass on the bacteria to others.

### What symptoms do the patients show?

#### *Whooping cough usually progresses through three phases:*

1. For one to two weeks, the patient seems to have a light cold, and suffers from a runny nose, a cough and a feeling of weakness, but only rarely a fever.
2. Then the coughing phase for which the disease is so famously named starts. Typically, this will be a protracted, dry cough. Coughing occurs in sudden, convulsive fits, which often end with the familiar “whooping” inhalation. These frequent coughing fits can be absolute torture and for many patients typically occur at night rather than during the day. Coughing often ends with the patient coughing up thick mucus before vomiting. People infected by whooping cough suffer from loss of appetite and insomnia. Fever occurs rarely. For new-borns and babies, it’s not unknown for whooping cough to cause life-threatening pauses in breathing (apnoea). The coughing phase generally lasts about 4-6 weeks.
3. A 6–10-week recovery phase then starts, as the coughing fits gradually grow less frequent. Cold air, physical exertion or cigarette smoke can trigger a dry cough for months afterwards, however.

With young people and adults, the coughing phase often features more prolonged coughing, without the typical coughing fits. This atypical progression makes it difficult to recognise whooping cough. A risk of infection is then appreciably higher if the illness of the infected person is unidentified.

#### *Babies aged up to 12 months are especially at risk of complications. Possible complications include:*

- ▶ Pneumonia and middle ear infections, seizures (rarely)
- ▶ Damage to the brain from lack of oxygen is rare but particularly feared. It may arise from arrested breathing during coughing fits. Permanent damage can include paralysis, visual/auditory damage or mental disorders. Most at risk are sick babies younger than 6 months.

### What’s the incubation period – and how long are you contagious?

The first symptoms usually appear between 9 and 10 days (and sometimes 6 days or up to 3 weeks) after infection. Patients are already contagious a few days before symptoms appear. The risk of contagion is highest at the first stage (in the “cold” phase), before the typical coughing fits begin. Patients stay contagious for around 3 weeks after the coughing starts. Babies may continue to excrete pathogens for longer. If whooping cough is treated with an antibiotic, the transmission window is shortened to around 5 days after starting treatment.

### Who is most at risk?

For new-borns, whooping cough can be a life-threatening illness. Around two thirds of new-born patients will need to be admitted to hospital. New-borns can only obtain specific defences against whooping cough if their mothers are vaccinated several weeks prior to the birth. This ‘passive immunity’ protects the children in the first few weeks of their life until they can be immunised themselves.

As protection from vaccination only lasts a few years, older children, adolescents and adults can also catch the disease, although symptoms are usually much milder. However, they in turn form a dangerous source of infection specifically for infants and toddlers, as well as older persons and persons with underlying illnesses.

### What should I do if I fall ill?

- ▶ To protect others, patients should be moved to a room of their own, and should avoid all contact with babies, infants and elderly people.
- ▶ Hospital treatment is often required if whooping cough is caught by babies aged less than 6 months or people with serious chronic illnesses. In hospital, life-threatening apnoea can be identified at an early stage.
- ▶ Medication should be taken only after consultation with the attending doctor. In some cases, an antibiotic will be given. If taken early enough in the first phase of the illness, it can prevent or alleviate the coughing disorder. Once the coughing fits have started, antibiotics cannot shorten the course of the illness. They can shorten the transmission window, however, and thus prevent the disease spreading.

## What should I do if I fall ill?

- ▶ As a rule, people infected by whooping cough drink plenty of fluids to soothe the dry cough. Since patients suffer from retching and vomiting, they should eat small meals distributed over the day.
- ▶ Children should sit upright with their heads bent slightly forwards during coughing fits.
- ▶ To protect other people from infection, the provisions of the German Prevention of Infection Act apply. Children and adults diagnosed with or suspected to be suffering from whooping cough must temporarily stay away from and/or stop working at community facilities such as schools or day nurseries. Patients must inform the community facility about their illness. After starting a course of antibiotics, whooping cough patients must wait 5 days before returning to local community facilities or if a swab has ruled out a suspected infection, and only if they are healthy enough to do so. If antibiotics are not taken, patients must wait 3 weeks from the onset of coughing.
- ▶ If whooping cough is suspected, inform your GP before visiting the surgery: this will let the practice team take precautions to prevent other people being infected.

## How can I protect myself?

### Vaccination

A vaccination for whooping cough is available. The German Permanent Vaccination Commission (STIKO) recommends vaccination:

- ▶ **For infants**, three partial vaccinations given at the age of 2, 4 and 11 months. Since whooping cough can be fatal to infants, they should be vaccinated as early as possible. The vaccinations can be given when the child attends his or her early diagnosis exams.
- ▶ **For children and young people**: This group gets a booster at age 5 to 6 and another aged 9 to 16.
- ▶ **For adults**: Adults should receive their next due vaccination against tetanus and diphtheria as a combined injection with a whooping cough vaccine. This also applies if a tetanus jab is required in case of injury!
- ▶ **Women of childbearing age**, as well as parents, siblings, grandparents, day-care staff and other persons in close contact with infants should be vaccinated if they have not been in the last 10 years. Ideally, the vaccination should be given no later than 4 weeks before the birth of the child. Women planning a family should be vaccinated before becoming pregnant or shortly after the birth of the child.
- ▶ **Close contacts of babies**, such as family members or childminders, should be vaccinated if they have not had a whooping cough vaccination in the last 10 years. The vaccination should preferably be administered at most 4 weeks prior to the birth of the child, during pregnancy of, if this date has been missed, then shortly after the birth of the child.
- ▶ Persons in healthcare and community facilities should also be vaccinated if they have not been vaccinated in the last 10 years.

Persons of any age can catch whooping cough again after recovering from an illness. Immunity after illness lasts approx. 7–20 years and approx. 5 to 7 years after immunisation.

### After contact with patients:

- ▶ If you are not vaccinated, you should be treated with an antibiotic preventively to keep the illness from breaking out.
- ▶ Those vaccinated can still infect others. If you have close contact with endangered persons such as infants and unvaccinated toddlers, you should therefore also receive antibiotics.
- ▶ If many cases of whooping cough occur in a community, the local health authority may recommend booster injections for previously vaccinated children and adolescents if their last injection was more than 5 years ago. This recommendation also depends on whether the person has close contact with patients in their household or community facility.

## Where can I find out more?

Your local health authority can provide you with further advice. Since whooping cough infections must be reported, they will also have the latest information and be very experienced in dealing with the disease. More (specialist) information is also available online from the Robert Koch Institute ([www.rki.de/pertussis](http://www.rki.de/pertussis)). For information on how vaccinations stop infection, visit the website set up by the Federal Centre for Health Education ([www.impfen-info.de](http://www.impfen-info.de)).



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