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## Whooping Cough (Pertussis)

### Description

Whooping cough (or pertussis) is a highly contagious respiratory infection caused by the bacterium *Bordetella pertussis*. Whooping cough can affect people of any age. For adolescents and adults, the infection may only cause a persistent cough. However, for babies and young children, whooping cough can be life threatening. Complications of whooping cough in babies include pneumonia, fits and brain damage from prolonged lack of oxygen. Most hospitalisations and deaths occur in babies less than six months of age.

In Australia, epidemics occur every 3 to 4 years. In 2011, 38 732 cases were reported nationally. The highest rates of disease were in infants <6 months of age and children 5 –9 years.

### Signs and symptoms

Whooping cough often starts like a cold with a runny nose, sneezing and tiredness over several days, and then the characteristic coughing bouts develop. These bouts can be very severe and frightening, and may end with a crowing noise (the 'whoop') as air is drawn back into the chest. Coughing episodes are frequently followed by gagging or vomiting. During coughing attacks, a child's breathing can be obstructed and they may become blue or stop breathing. The bouts of coughing may continue for many weeks even after appropriate treatment. Babies under six months of age, vaccinated children, adolescents and adults may not display the typical whoop. Even in adults, pertussis can cause significant problems with the cough persisting for up to 3 months, and other symptoms, such as sleep disturbance or, rarely, rib fracture.

### Treatment

Treatment is a course of antibiotics which reduces the time a person is infectious to others and may reduce symptoms if given early in the disease. To be effective, antibiotics need to be given within 21 days of the start of general symptoms or within 14 days of the start of the bouts of coughing.

Some people who have had close contact with an infected person may need to take antibiotics to prevent infection. This includes people at high risk of serious complications (i.e. children aged less than six months); and others who might spread it to these children, such as women near the end of their pregnancy, or people who live or work with infants under the age of 6 months. Seek the

advice of your doctor about the need for antibiotics to reduce the risk of infection in yourself or in infants at risk of serious complications.

## Prevention

To avoid passing the disease on to others, a person with whooping cough should stay away from work, school, pre-school or child care until they have had at least 5 days of their course of antibiotics, or until 21 days after the first sign of any coughing, or until 14 days after the severe bouts of coughing began.

If people who have had close contact with an infectious person are not fully vaccinated, they may need to stay away from places where there are young children or pregnant women. Your doctor can provide advice on this.

Anyone who has been in close contact with an infectious person should keep a close eye on their own health. If they develop signs of early whooping cough in the three weeks following the exposure, they should immediately remove themselves from close contact with others until they have seen a doctor, mentioning to the doctor about the contact with whooping cough. The person should not return to work until they are no longer infectious; or another cause has been confirmed for their illness.

People who are visiting a doctor in relation to whooping cough should advise the staff either prior to the visit or immediately on arrival so appropriate infection control measures can be taken.

## VACCINATION

Vaccination is the most effective way to control whooping cough. In Australia the pertussis vaccine is only available in combination with diphtheria and tetanus; and additionally the pertussis/tetanus/diphtheria vaccine for children is given as one injection combined with other childhood vaccines such as polio, hepatitis B and Haemophilus influenzae type b.

To ensure full protection at the right time, it is important that all the doses of the vaccine are given at the recommended times; although catch up vaccinations can and should be given if vaccines are delayed for some reason.

Immunisation against whooping cough is recommended as part of the National Immunisation Program Schedule and the vaccine is funded for:

- Infants aged 2 months (vaccines due at 2 months can be given from 6 weeks), 4 months and 6 months)
- Children aged 4 years (vaccines due at 4 years can be given from 3 years 6 months)
- Year 8 and Year 10 student booster dose, usually given in the school immunisation program. The program for year 10 students will cease at the end of 2015.

An additional dose of whooping cough vaccine is recommended for children at 18 months of age, but this is not currently funded under the national program.

Pertussis vaccination is also recommended for women early in the third trimester of **each** pregnancy. This dose is funded by the Queensland government and the optimal time for vaccination is between 28 and 32 weeks; however it can be given at any time in the third trimester up to delivery. Boosting the mother's immunity protects the newborn baby until old enough to be vaccinated at 6 weeks of age, via antibodies that cross the placenta to the baby during pregnancy. Women who are not vaccinated in the third trimester and who have not had a dose of pertussis vaccine in the past 10 years should consider vaccination as soon as possible after delivery to reduce their risk of acquiring whooping cough and passing it on to their newborn child; however this dose will not be funded.

A booster dose is also recommended - but not funded- for any adult who wants to reduce the risk of infection and hasn't had a pertussis booster in the last ten years. Vaccination is particularly important for people living with or caring for babies under six months e.g. Fathers and grandparents. The vaccine should be given at least 2 weeks before contact with the infant. Adults working with infants and young children <4 years of age and all health care workers should receive a dose of pertussis vaccine. A booster dose is recommended every 10 years. Like all medications, vaccines may have side effects. Most side effects are minor, last a short time and do not lead to any long-term problems. Possible side effects of whooping cough vaccine may include fever, redness and soreness or swelling where the injection was given, nausea, headache, tiredness and aching muscles. More serious side effects are extremely rare but can include severe allergic reactions. Contact your immunisation provider if you or your child has a reaction following vaccination which you consider serious or unexpected.

## Transmission

Whooping cough bacteria are highly infectious and are spread to other people by an infected person coughing and sneezing. The infection can also be passed on through direct contact with infected secretions from the mouth or nose. The time between exposure to the bacteria and getting sick is usually seven to ten days, but can be up to three weeks. A person is most infectious in the early stages of their illness. Unless treated with appropriate antibiotics for at least five days, a person is regarded as infectious for three weeks after the first sign of any cough; or 14 days after the start of the bouts of coughing.

## Other resources

- 13 HEALTH (call 13 43 25 84)
- Immunise Australia (call 1800 671 811)
- Queensland Immunisation Schedule
- School Immunisation Program

## Help and assistance

For further assistance, please contact your local doctor, community health centre or nearest public health unit. You can be immunised at your local doctor or medical centre. Check with your local council, community child health and community health centre regarding free immunisation clinics.

### References

Heymann, D. (Ed) 2015. *Control of Communicable Diseases Manual*, 20th edition. Washington, DC: American Public Health Association.

Australian Government, National Health and Medical Research Council 2013; Pertussis Update March 2015. *The Australian Immunisation Handbook (10th Ed.)*