

# the 2023 pertussis disease guide

for health care professionals



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## Cause & Transmission

Pertussis (whooping cough) is an acute respiratory illness caused by the *Bordetella pertussis* bacterium.

Pertussis is highly contagious and only found in humans. It spreads by airborne droplets when an infected person sneezes or coughs. The droplets can be breathed in by others or passed on to others by touching a contaminated surface.

People with pertussis are most infectious in the first three weeks after the onset of symptoms.

## Symptoms

Symptoms will start to appear 1–3 weeks after exposure to the bacteria. The disease begins like a cold, with a runny nose, mild fever and a cough.

The cough gets worse and can last 1–2 months or longer. The illness is characteristically known for repeated violent bouts of coughing followed by a whooping inspiration. The whoop may be absent in very young infants, older children and adults. Some children cough so much they vomit afterwards.

## Pertussis in Adults

53% of pertussis notifications in 2020 were adults 20 years and over.

Patients and physicians may not be aware of the disease and diagnostic tests sometimes have limited sensitivity. Therefore, pertussis is likely to be under-diagnosed.

Pertussis can cause significant morbidity in adults, with a cough persisting for up to 3 months leading to a disruption to daily life, and on average 10 work days lost.

Adults (and adolescents) are a significant reservoir of infection.

Immunity acquired through vaccination or exposure to pertussis wanes and requires revaccination for protection.

dTpa is recommended for any adult who wishes to reduce the likelihood of becoming ill with pertussis.

Any adult who needs a tetanus-containing vaccine can have dTpa vaccine rather than dT, especially if they have not previously had a dTpa in adulthood.

## Pertussis Complications

Severe complications, which occur almost exclusively in unvaccinated people, include pneumonia, hypoxic encephalopathy and death. Some of the complications of pertussis in young babies:

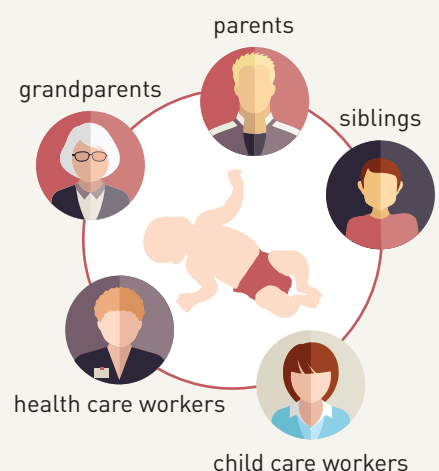
- haemorrhage
- apnoea
- pneumonia
- inflammation of the brain
- convulsions
- permanent brain damage
- death

## Infants less than 6 months are at greatest risk of severe illness and death.

People in contact with infants (NOT FUNDED under NIP for these individuals)

- Adult household contacts and carers (e.g. **fathers and grandparents of infants**) should ideally receive a dTpa vaccine at least 2 weeks before beginning close contact with the infant.
- A booster vaccine is recommended for those who **have not received** one in the previous 10 years.
- **Adults working with infants and children** under 4 should receive a dose of dTpa vaccine with a booster dose every ten years.
- All **healthcare workers** should receive a dose of dTpa with a booster dose every ten years.

## Create a circle of protection for babies by vaccinating people in contact with them.



**Four out of five babies with pertussis get it from someone at home**



**Only 24% of 18 to 45 year old Australians have been recommended the pertussis vaccine.**

You play a critical role in the patient's decision making: 73% of people would take the health professional's advice and have the pertussis vaccine.



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# a pertussis sufferer is **infectious for up to 3 weeks**

they can infect an estimated 90% of unprotected or unvaccinated household contacts.



Scan

## Who should be vaccinated

**Infants and children:** FREE pertussis vaccine is available under the National Immunisation Program (NIP): see table.

Vaccine	2 months	4 months	6 months	18 months	4 years	10-15 years
(DTPa)	1st dose	2nd dose	3rd dose	1st booster	2nd booster	
(dTpa)						3rd booster

**Older children and teenagers:** FREE catch up vaccines are now available through the NIP for individuals 10 to 19 years of age.

**Humanitarian entrants:** FREE catch up vaccines are now available through the NIP for refugees and other humanitarian entrants aged 20 years and over.

**Adults:** dTpa is recommended for any adult who wishes to reduce the likelihood of becoming ill with pertussis, but particularly important for special risk groups.

**Pregnant women:** FREE vaccines are available through the NIP. It is recommended to be given between 20-32 weeks. Women who are not vaccinated during pregnancy should be vaccinated as soon as possible after delivery. dTpa can be given to breastfeeding women.



## Vaccine safety in pregnancy

Studies show no increased risk of adverse pregnancy outcomes (such as stillbirth, fetal distress or low birth weight) related to pertussis vaccination during pregnancy.

**Booster vaccinations:** dTpa also recommended (but not NIP funded) for:

- People at 50 years of age, if their last dose was more than 10 years ago
- People 65 and over who have not had pertussis vaccine in past 10 years
- People travelling overseas if they haven't had a pertussis vaccine within 10 years.



**92% of 18 to 45 year old Australians do not know that a booster vaccine for pertussis is required every 10 years.**



## How is pertussis treated?

Pertussis is treated with an antibiotic usually azithromycin for 5 days, or trimethoprim-sulfamethoxazole for 7 days or clarithromycin for 7 days. These antibiotics will prevent the spread of pertussis to other people.

If the patient has been coughing for more than three weeks, they are no longer infectious. In these cases, antibiotics are usually not needed.

## Vaccine efficacy

A 3-dose primary series of immunisation with DTPa vaccine at 2, 4 and 6 months of age results in 84% protective efficacy against severe disease.

Immunity to pertussis wanes over time. Effectiveness of 3 doses of DTPa vaccine declined progressively from 2 years of age to less than 50% by 4 years of age.

A large trial in adolescents and adults demonstrated overall vaccine efficacy against confirmed pertussis of 92% within 2.5 years of vaccination.

In 2020, **3,458 cases of pertussis** were reported in Australia.

Children **under 15 years of age** accounted for **40%** of pertussis notifications. In 2021, 564 cases were reported.



## Vaccination side effects

Compared to whole-cell pertussis vaccines (DTPw), acellular pertussis vaccines are associated with a much lower incidence of fever (20% vs. 45%) and local reactions (10% vs. 40%)

Extensive limb swelling can occur with booster doses of DTPa. Such reactions commence within 48 hours of vaccination, last 1-7 days and resolve completely.

## Menactra Administration

Menactra may interfere with the immune response of some of the meningococcal serogroups if given with diphtheria containing vaccines, it is unknown if this interferes with clinical protection. If available, it is preferable to give Menveo or Nimenrix after a vaccine containing diphtheria toxoid.

