

*Diphtheria is a potentially fatal bacterial infection that usually affects the nose and throat. It is very uncommon in Australia but can reemerge when immunisation rates are low.*

# Diphtheria

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## What is diphtheria?

Diphtheria is a contagious and potentially life-threatening bacterial infection caused by toxin-producing strains of *Corynebacterium diphtheriae* and *Corynebacterium ulcerans*. Diphtheria was a common cause of death in children up until the 1940s but has now almost disappeared in Australia due to immunisation. Diphtheria continues to occur in countries with poor levels of immunisation.

## What are the symptoms?

- Symptoms usually begin two to five days (range, 1-10 days) after exposure to the diphtheria bacteria. Symptoms will depend on the site of infection but the most severe form of diphtheria affects the throat and tonsils. The first symptoms are usually a sore throat, loss of appetite and a mild fever. Within 2-3 days, a membrane forms over the throat and tonsils that can make it hard to swallow and breathe. The infection can also cause the lymph glands and tissues on both sides of the neck to swell ("bull neck").
- The toxin formed by the diphtheria bacteria can also cause inflammation of heart muscle and nerves that can be fatal. Death occurs in 5-10% of cases of diphtheria.
- Sometimes diphtheria can cause small skin sores that form larger ulcers, commonly on the legs. This form of diphtheria is more common in the tropics.
- Illness can also occur with non-toxin-producing strains of the diphtheria bacteria, but the disease is generally milder.

## How is it spread?

- Diphtheria bacteria can live in the mouth, nose, throat or skin on infected individuals.
- Diphtheria is normally spread from person to person in airborne droplets after an infected person has coughed or sneezed. Rarely, diphtheria spreads from close contact with discharges from an infected person's mouth, nose, throat or skin.
- Without antibiotic treatment, people with diphtheria are infectious for up to 4 weeks from the onset of symptoms. Some people become carriers of the bacteria and are infectious for longer.
- *Corynebacterium ulcerans* infection is occasionally associated with consumption of unpasteurised milk or contact with animals.

## Who is at risk?

Anyone who comes in contact with diphtheria during its infectious period who has not had diphtheria in the past or has not been fully immunised is at risk.

## How is it prevented?

- Diphtheria vaccination protects against the disease. It is part of the standard vaccination schedule and is given as DTP vaccine, which contains combined vaccine against diphtheria, tetanus and pertussis.
- DTP vaccine should be given at 2, 4 and 6 months of age, followed by booster doses at 4 years and at 15 years of age.
- A high vaccination rate in the community is important to protect the population from resurgence of this disease. In 2011, over 90% of Australian children under 6 years of age were fully immunised against diphtheria (Australian Childhood Immunisation Register (ACIR) statistics).

## How is it diagnosed?

- A doctor can suspect diphtheria based on a clinical examination when the membrane is seen in the throat, and by testing throat swabs in a laboratory.
- Special laboratory tests are needed to detect the toxin and confirm the diagnosis.

## How is it treated?

- Diphtheria infection is treated with antibiotics and antitoxin.

## What is the public health response?

Laboratories, hospitals, school principals and directors of childcare centres are required to notify cases of diphtheria to the local public health unit under the Public Health Act, 1991. Public Health Units investigate cases and their contacts to identify possible sources of infection and prevent further spread. Cases are isolated until they are not infectious.

People who have had close or prolonged contact with a case may also be at risk of infection. Some contacts of cases are given antibiotics to stop the infection from developing and may also require a course of vaccination if unimmunised.

For further information please call your local Public Health Unit on 1300 066 055 or visit the New South Wales Health website [www.health.nsw.gov.au](http://www.health.nsw.gov.au)