

Meningococcal infection



Meningococcal infection is caused by a bacterium called *Neisseria meningitidis* (also called the meningococcus, plural meningococci). There are 13 different types of meningococcus, but most infections in Australia are caused by types B and W.



Meningococcal infection is a notifiable condition¹

How meningococcal infection is spread

The meningococcus is carried, usually harmlessly, in the nose and throat of around 10-20% of the population ('carriers'), with higher carriage in some specific groups. The meningococcus is spread when an infected person (patient or carrier) talks, coughs or sneezes small droplets containing infectious agents into the air. The droplets in the air may be breathed in by those nearby. The meningococcus is also spread by close contact with nose or throat secretions, for example during deep kissing. However, only a very small number of people in close contact with carriers develop meningococcal disease. Meningococcal disease occurs when the bacteria 'invade' the body from the throat or nose.

Contact with saliva from the front of the mouth (for example, from sharing drinks or cigarettes) has not been shown to cause meningococcal disease.

Even though it is hard to catch and uncommon, meningococcal disease is a feared infection, often featured in the media.

Cigarette smoking, both active and passive, appears to increase the risk of a person developing meningococcal disease. This is yet another reason to stop smoking and for adults not to smoke near young children.

Signs and symptoms

Meningococcal disease is a severe infection caused by the meningococcus which may result in:

- > meningitis (inflammation of the lining of the brain and spinal cord)
- > septicaemia (infection of the blood)
- > joint infection
- > eye infection
- > pneumonia (lung infection or inflammation)
- > a rash.

Septicaemia from meningococcal disease can cause shock and death within hours of the onset of symptoms. In Australia, 5 to 10% of people with meningococcal disease die, despite rapid treatment.

Meningococcal disease can affect all age groups but is most common in children under 5 years of age and in young adults (15 to 24 years). Meningococcal disease can occur throughout the year but is most common in winter and spring. Outbreaks can occur but are rare.

Infants and young children

In infants and young children, the symptoms of meningococcal disease include:

- > fever
- > refusing to take feeds
- > fretfulness
- > child difficult to wake
- > high-pitched or moaning cry

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- > tiny red or purple spots that soon spread and enlarge to look like fresh bruises (see image).



Image - courtesy Prof. David Gordon, Flinders Medical Centre, Adelaide, South Australia

- > pale or blotchy skin
- > abnormal skin colour
- > leg pain
- > cold hands and feet.

Older children and adults

In older children and adults the symptoms of meningococcal disease include:

- > headache
- > fever
- > vomiting
- > neck stiffness
- > photophobia (discomfort when looking at light)
- > drowsiness or confusion
- > tiny red or purple spots that soon spread and enlarge to look like fresh bruises
- > collapse
- > joint pains.

Diagnosis

Diagnosis is made in a pathology laboratory from a sample of blood or cerebrospinal fluid (CSF)² by:

- > examination
- > growing meningococcal bacteria
- > polymerase chain reaction (PCR) testing.

Incubation period

(time between becoming infected and developing symptoms)

Usually 3 to 4 days, but can vary from 1 to 10 days.

Infectious period

(time during which an infected person can infect others)

The person is infectious as long as the meningococcal bacteria are present in the nose and throat. The bacteria disappear within 24 hours of starting appropriate antibiotic treatment.

Treatment

A person with suspected meningococcal disease must be treated immediately with an injection of antibiotics and transferred urgently to hospital.

Prevention

Very close contacts³ of a person who has meningococcal disease, such as household members, will be contacted by SA Health's Communicable Disease Control Branch (CDCB). They may be advised to receive a short course of an appropriate antibiotic to clear any meningococci they may carry in their nose and throat. These antibiotics do not treat the disease, but can help stop meningococci from spreading to other people.

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It is important to seek urgent medical attention if any symptoms of meningococcal disease develop.

A person with meningococcal disease must also be given an appropriate antibiotic to eliminate meningococci from their nose and throat in order to prevent spread to others.

All people in the network of contacts of the person with meningococcal disease should receive information about the disease. It is important for them, or anyone close to them, to seek urgent medical attention if they develop any symptoms of meningococcal disease.

Immunisation

There are vaccines available to protect against a number of types of meningococcal disease. Because vaccines do not protect against all types of meningococci, vaccinated people must still be alert for symptoms of meningococcal disease.

In South Australia the meningococcal ACWY vaccine is provided under the National Immunisation Program and is administered at 12 months of age. The meningococcal ACWY vaccine is also offered through the School Immunisation Program in Year 10. Adolescents aged 15 to 19 years of age, who have not already received the vaccine in school, can receive the vaccine through a GP based catch-up program.

This combined ACWY vaccine is also recommended for:

- > travellers who plan to visit countries where epidemics of these types of meningococcal infection are frequent
- > individuals attending mass events, for example pilgrims travelling to the Hajj in Saudi Arabia.

In 2018, South Australia introduced funded meningococcal B vaccine for specific age groups. This vaccine is also available on the private market. A common side effect of meningococcal B vaccine is a fever, which can be more common in children aged less than two years of age. It is recommended children in this age group receive paracetamol 30 minutes before every dose of meningococcal B vaccine; this can be followed by two further doses given at six hourly intervals after the vaccine is given.

Both the combined meningococcal ACWY vaccine and the meningococcal B vaccine are recommended for people with some specific medical conditions or treatments, including those who do not have a functioning spleen. Additional doses of these vaccines are also recommended.

If the meningococcal disease is caused by a type for which there is a vaccine, the Communicable Disease Control Branch may recommend vaccination of close household contacts with the appropriate vaccine. The recipient may have to pay for this vaccination

Vaccines may also sometimes be used during outbreaks of meningococcal disease.

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Useful links

- > SA Health: www.sahealth.sa.gov.au
 - National Immunisation Program
 - School Immunisation Program
 - Meningococcal B Immunisation Program
 - Surveillance of notifiable conditions
 - Notifiable conditions - what to know when you have one.

In some cases, meningococcal infection will have serious health consequences or can be fatal. If you require support because you have either experienced meningococcal infection or have lost a loved one as a consequence of meningococcal disease please speak with your doctor about a referral to a suitably qualified counsellor. Other useful resources include community networks such as:

- > Meningococcal Australia Inc.:
www.meningococcal.org.au
- > Paige Weatherspoon Foundation:
www.paigewf.com.au

1 – In South Australia the law requires doctors and laboratories to report some infections or diseases to SA Health. These infections or diseases are commonly referred to as 'notifiable conditions'.

2 - Cerebrospinal fluid: the fluid surrounding the brain and spinal cord.

3 - A contact is any person who has been close enough to an infected person to be at risk of having acquired the infection from that person.

You've Got What? 5th Edition

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The SA Health Disclaimer for this resource is located at

www.sahealth.sa.gov.au/youvegotwhat

Version 2.1. October 2020.

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This document has been reviewed and endorsed by SQCAG* for consumers and the community – February 2018.

*SA Health Safety and Quality Community Advisory Group.



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