Meningococcal disease

Summary

- Meningococcal bacteria are only passed from person to person by regular close, prolonged household or intimate contact with infected secretions from the back of the nose and throat.
- Meningococcal disease is uncommon but serious.
- It usually takes the form of a blood infection (septicaemia) or infection of the membranes covering the brain and spinal cord (meningitis).
- Immunisation against meningococcal bacteria provides good protection against meningococcal disease.
- Meningococcal vaccines are available to protect against disease strains A, B, C, W and Y.
- The National Immunisation Program schedule provides a free meningococcal ACWY vaccine for children at 12 months of age or a free catch-up dose for unimmunised people under 20 years of age who have not previously had their meningococcal C vaccine at 12 months.
- Commencing from April 2019, a free meningococcal ACWY school based vaccination program will be provided on the National Immunisation Program for secondary school students in Year 10, or age equivalent. Young people aged 15 to 19 years of age, who have not already received the vaccine in school, will be able to be vaccinated by their immunisation provider.

Meningococcal disease is caused by a bacterium called Neisseria meningitidis (also known as meningococcal bacteria). These bacteria are divided into 13 strains or 'serogroups' designated by letters of the alphabet such as A, B, C, W and Y.

Some people have meningococcal bacteria living naturally in their nose and throat. In a small number of people, a dangerous strain of the bacteria can become invasive and move through the lining of the throat, causing meningococcal disease (or 'invasive meningococcal disease').

Meningococcal disease usually takes the form of a blood infection (septicaemia) or an infection of the membranes covering the brain and spinal cord (meningitis). These infections can develop quickly and can cause serious illness or death. Early diagnosis and treatment with antibiotics are vital. Other less common forms of meningococcal disease include pneumonia, arthritis, epiglottitis, pericarditis and conjunctivitis.

Meningococcal vaccines are available to protect against disease strains A, B, C, W and Y.

The meningococcal ACWY vaccine and the meningococcal B vaccine are also available for purchase with a prescription for those persons not eligible for the National Immunisation Program vaccines.

Meningococcal vaccination is recommended for people who are at high risk of contracting these bacterial strains (see below) or anyone wishing to protect themselves from meningococcal disease

Overview of meningococcal disease

Meningococcal bacteria live naturally in the back of the nose and throat in about 10 per cent of the population without causing illness. These people are known as 'carriers'. These people can pass the disease on to someone else. In a small number of people, a particular strain of the bacteria gets through the lining of the throat, enters the bloodstream and causes meningococcal disease.

The infection can develop very quickly. If infection is diagnosed early enough and the right antibiotics are given quickly, most people make a complete recovery. Even with antibiotic treatment, invasive meningococcal disease causes death in about five to 10 per cent of cases.

Most cases occur suddenly and are unrelated to any other cases. Outbreaks where more than one person is affected are rare. Although everyone is a carrier at some time, carriers are most common among young adults and

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people who smoke.

How meningococcal disease is spread

Meningococcal bacteria are difficult to spread. They are only passed from person to person by close, prolonged household contact (living in the same house) or intimate contact with infected secretions from the back of the nose and throat (such as deep kissing).

Research shows that low levels of salivary contact are unlikely to transmit meningococcal bacteria. In fact, saliva has been shown to slow the growth of the bacteria. Meningococcal bacteria are only found in humans and cannot live for more than a few seconds outside the body. You cannot catch meningococcal disease from the environment or animals.

Meningococcal disease can occur all year round, but it is more common during winter and early spring.

High-risk groups for meningococcal disease

Although meningococcal disease is uncommon, it is a very serious disease that can occur in all age groups. In Victoria, the highest risk groups are:

- infants and young children, particularly those aged less than two years
- adolescents aged 15 to 19 years
- people who have close household contact with those who have meningococcal disease, and who have not been immunised
- people travelling to places, such as Africa, that have epidemics caused by serogroups A, C, W and Y
- pilgrims to the annual Hajj in Saudi Arabia - Saudi Arabian authorities require a valid certificate of vaccination to enter the country
- people who work in a laboratory and who handle meningococcal bacteria
- special risk and immunosuppressed patients - children (aged from six weeks and over) and adults who have high-risk conditions, such as a poor functioning or no spleen, a complement component disorder, HIV, current or future treatment with eculizumab or a haematopoietic stem cell transplant.

Speak to your doctor about which vaccine you should have (and how long protection will last) if you are in one of these high-risk groups.

Meningococcal disease in the population

The most common strain of meningococcal bacterium causing disease in a population changes over time. There are different strains (serogroups) of meningococcal bacteria known by letters of the alphabet, including A, B, C, W and Y. In recent years some of these strains have increased across Australia.

Different strains of bacteria have been found to cause meningococcal disease in different countries.

In Australia:

- Disease due to strain C has decreased since the introduction of the meningococcal C vaccine to the National Immunisation Programme in 2003.
- The highest rates of meningococcal disease caused by meningococcal B bacteria occur in children aged less than five years (particularly infants aged less than one year), and in late adolescence and early adulthood.
- Meningococcal W has significantly increased in Australia in recent years. This strain produces more severe reactions if contracted, with a greater chance of the person dying from it than other strains.

Symptoms of meningococcal disease

Meningococcal disease (septicaemia or meningitis) causes a range of symptoms. If you (or your child) have any of these symptoms, seek medical attention as soon as possible: contact your doctor immediately, call triple zero (000) for an ambulance or go to the nearest hospital emergency department.

Symptoms in babies and young children

Symptoms of meningococcal disease in infants and young children can include:
• fever
• refusing to feed
• irritability, fretfulness
• grunting or moaning
• extreme tiredness or floppiness
• dislike of being handled
• nausea or vomiting
• diarrhoea
• turning away from light (photophobia)
• drowsiness
• convulsions (fits) or twitching
• rash of red or purple pinprick spots or larger bruises.

**Symptoms in older children and adults**

Symptoms of meningococcal disease in older children and adults can include:

• fever
• headache
• loss of appetite
• neck stiffness
• discomfort when looking at bright lights (photophobia)
• nausea and/or vomiting
• diarrhoea
• aching or sore muscles
• painful or swollen joints
• difficulty walking
• general malaise
• moaning, unintelligible speech
• drowsiness
• confusion
• collapse
• rash of red or purple pinprick spots or larger bruises.

**Seek medical help for meningococcal disease**

If somebody close to you has some of these signs and symptoms, seek medical help immediately. In the very early stages, meningococcal disease can appear to be like other, less serious illnesses and therefore can be difficult to diagnose.

You are the expert in your family's health. Do not hesitate to seek immediate medical help:

• if you are worried that the person is sicker than you would expect
• if the person seems to be getting worse, suddenly develops a rash or becomes drowsy
• even if it has only been an hour or two since you last sought help, you can always call NURSE-ON-CALL, triple zero (000) for an ambulance or go to an emergency department of a hospital.

Young adults and children should not be left alone if they suddenly develop a fever, as they may become seriously ill very quickly.

**After-effects of meningococcal disease**

About a quarter of the people who recover from meningococcal disease experience some after-effects of the infection.
Some of the more common after-effects include:

- headaches
- skin scarring
- limb deformity
- deafness in one or both ears
- tinnitus (ringing in the ears)
- blurring and double vision
- aches and stiffness in the joints
- learning difficulties.
- permanent brain damage

**Diagnosis of meningococcal disease**

Early diagnosis of invasive meningococcal disease is extremely important. Your doctor will take a medical history. If meningococcal disease is suspected, samples of blood and the fluid around the spinal cord (cerebrospinal fluid) are taken.

The samples are sent to a laboratory to be tested for the presence of meningococcal bacteria. Growing the bacteria confirms the diagnosis and will help to determine which type of bacteria is causing the infection.

**Treatment of meningococcal disease**

If meningococcal disease is suspected, an antibiotic (usually penicillin) is given immediately by injection. People with meningococcal disease are always admitted to hospital and may require admission to an intensive care unit.

The sooner people receive treatment, the less damage the disease may cause. It is important to remember that this is an unpredictable infection that can progress very rapidly, despite the best treatment.

**Treatment of close contacts of people with meningococcal disease**

Most people, such as school and work friends who have had contact with an affected person, do not need antibiotics.

Very close contacts of an infected person are offered a short course of 'clearance' antibiotics in accordance with Australian guidelines. These people are usually identified and contacted by the Department of Health and Human Services or the treating doctor.

'Clearance' antibiotics are effective at killing meningococcal bacteria in the throat. They are not a treatment for meningococcal disease, nor do they necessarily prevent anyone from developing the disease.

Very close contacts may include:

- members of the same household
- a girlfriend or boyfriend
- anyone who has stayed overnight in the same house as the person in the seven days before they became unwell.
- children in a childcare facility who have spent at least four hours or more in the same room as the affected person in the seven days before the person became unwell.

**Immunisation against meningococcal disease**

Immunisation against meningococcal bacteria is the best protection against meningococcal disease.

It is important to know that even if you have had meningococcal disease, you may not develop lifelong immunity and are still advised to be immunised against further recurrence of this life-threatening disease.

**Meningococcal ACWY vaccination**

The meningococcal ACWY vaccine provides good protection against strain ACWY serogroups. Immunisation

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against meningococcal serogroups ACWY disease is available for free in Victoria as part of the National Immunisation Program schedule for:

- children at 12 months
- catch-up program for children aged from 13 months up to and including 19 years of age, who have not previously had their meningococcal C vaccine at 12 months
- from April 2019, a free meningococcal ACWY school based vaccination program will be provided on the National Immunisation Program for secondary school students in Year 10, or age equivalent. Young people aged 15 to 19 years of age, who have not already received the vaccine in school, will be able to be vaccinated by their immunisation provider.
- Find my local council
- Find my nearest immunisation provider

The ACWY vaccination is available for purchase by prescription for anyone wishing to protect themselves or their family. This vaccine is recommended for high risk groups as identified above.

**Meningococcal B vaccination**

Immunisation against meningococcal serogroup B disease is available on private prescription, but is not available free under the National Immunisation Program schedule.

This vaccine is recommended for high risk groups, including:

- infants and young children, Children aged less than five years, particularly infants aged less than two years, have the highest numbers of meningococcal disease caused by meningococcal B strains
- adolescents aged 15 to 19 years
- Special risk and immunosuppressed patients - children and adults with medical conditions that place them at a high risk of meningococcal disease, such as a poor functioning or no spleen, a complement component disorder, HIV, current or future treatment with eculizumab or a haematopoietic stem cell transplant
- laboratory personnel who frequently handle meningococcal bacteria.

Meningococcal serogroup B vaccine commonly causes fever in children younger than two years of age and skin reactions at the injection site.

Paracetamol is recommended 30 minutes before or as soon as practicable after meningococcal B vaccine for children younger than two years of age. Two further doses of paracetamol are recommended six hours apart, regardless of whether fever is present.

**Pregnancy and meningococcal disease immunisation**

Meningococcal vaccines are not usually recommended for women who are pregnant, but they might be given if your doctor thinks your situation puts you at risk of the disease.

**Where to get help**

- In an emergency, always call triple zero (000)
- Emergency department of your nearest hospital
- Your GP
- Local government immunisation service
- **Maternal and Child Health Line** (24 hours) Tel. **13 22 29**
- **NURSE-ON-CALL**, Tel. **1300 60 60 24** - for expert health information and advice (24 hours, 7 days)
- **Immunisation Section**, Department of Health and Human Services, Victorian Government Tel. **1300 882 008**
- **Immunise Australia Information Line** Tel. **1800 671 811**
- Your pharmacist

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