

What is meningococcal disease?

Meningococcal disease is a rare, but potentially devastating bacterial infection of the blood and/or membranes that line the spinal cord and brain.

How do people get meningococcal disease?

The bacteria that cause meningococcal disease can live harmlessly in the nose and throat and can be spread from one person to another by close contact. **They can be spread through behaviours, including:**¹

- coughing & sneezing
- kissing
- living in close quarters

Approximately 10% of the general population will carry the bacteria at any one time, without ever becoming ill, however in a small number of people the bacteria can cause disease.²

What are the symptoms of meningococcal disease?

Early symptoms can be hard to notice because they begin mildly – similar to those of a cold or the flu. However, symptoms can progress quickly and may include the following:

- Nausea
- Confusion
- Fever or cold chills
- Tiredness
- Vomiting
- Diarrhoea
- Cold hands and feet
- Severe aches or pain in the muscles, joints, chest or belly
- Stiff neck
- Rapid breathing
- A dark purple rash
- Sensitivity to light

It can be even harder to notice these symptoms in babies and they may not appear at all. Instead, a baby may become slow or inactive, be irritable or vomit.



Act fast and don't wait for a rash!

In the later stages of meningococcal disease, the bacteria can enter the bloodstream and multiply, damaging the walls of the blood vessels. This can cause a dark purple rash, however it may not always appear. If you're concerned about your child's health, act fast - don't wait for a rash and **seek medical attention immediately.**

Can meningococcal disease be serious?

While meningococcal disease is rare, it can be fatal within 24 hours. Up to one in ten of those infected may die, and around one in five may suffer serious long-term disabilities including brain damage, deafness or loss of limbs.¹⁻³



Up to 1 in 10 may die.^{1,2}



Up to 1 in 5 may have permanent disability.^{1,3}

JOLIE-ANN'S STORY

Jolie-Ann's mum, Ashley shares her story.

At 11 months old we brought her to the hospital because we noticed she wasn't acting like herself. Doctors couldn't properly diagnose her, and the condition worsened so we returned to the hospital for the third time that day.

After 85 days in the hospital, she ended up getting vocal cord paralysis, scarring all over her body, and lost a leg muscle after nearly 20 surgeries.

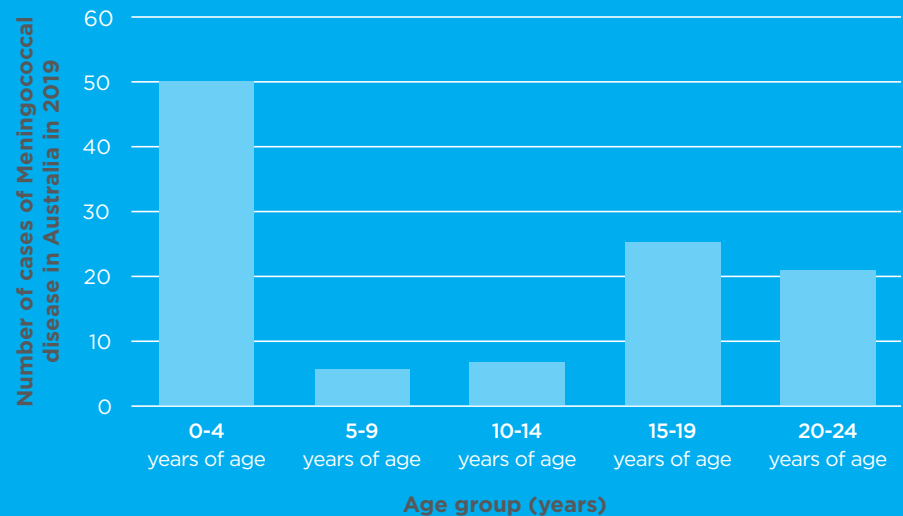
If you think something is wrong with your baby, don't wait to see if things get worse. If your gut is telling you something is wrong, act on it. I trusted my instincts and that's what saved her life.



Who's at risk?

Meningococcal disease can strike at any age. Babies (less than one year of age) and children (under 5 years of age) are most at risk, followed by adolescents (15 - 19 years of age). The highest incidence of meningococcal disease occurs in infants aged 3 to 5 months of age.⁴

The following graph shows the number of cases of meningococcal disease in Australians aged 0 - 24 years in 2019⁵



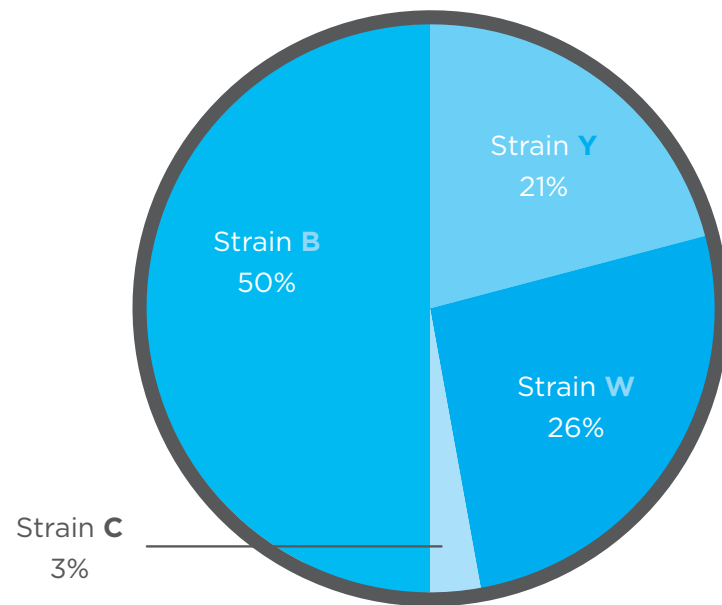
During the early years of life, children have an underdeveloped immune system, meaning they may be more likely to pick up a strain of meningococcal bacteria that they are not immunised against or don't have natural immunity to.

In adolescence, changes in social behaviour that result in close physical contact can result in increased spread and risk of meningococcal disease. A higher number of meningococcal disease cases occurs among adolescents and young adults aged 15 to 24 years.⁴

Are there different types of meningococcal disease?

Globally, there are 13 different strains of meningococcal bacteria, of which there are five main strains that most commonly cause disease (A, B, C, W and Y).

Currently in Australia, strains B, W and Y cause the majority of disease, with cases in 2019 caused by:⁵



Treatment and Prevention

Early recognition and treatment of meningococcal disease offers the best chance of recovery.

While good hygiene practices are important in helping to prevent the spread of germs, vaccination may also be an option to help prevent meningococcal disease.

No single vaccine can protect against all strains of meningococcal disease, but different vaccines are available to help protect against the most common ones.

If you're concerned about you or your child's health, act fast and don't wait for a rash and seek medical attention immediately.

THORN'S STORY

At 7 months old, Thorn's mum, Kylie, noticed he was restless, squinting at the light and had a small rash. She took him to their GP and was immediately sent to the hospital. In under 12 hours, Thorn had multi-organ failure and remained in the ICU for four weeks.

His ongoing poor health has had a tremendous impact on Thorn's psychological well-being and ability to learn.

"In surviving meningococcal disease and living with what it has done to me, I have learnt to be myself, to not be afraid to ask for anything and most of all not be ashamed of my disability.

This has given me my sense of strength" Thorn said.



THORN

SPEAK TO YOUR DOCTOR FOR MORE INFORMATION ON MENINGOCOCCAL DISEASE AND HOW YOU CAN HELP PROTECT YOUR FAMILY.



Share what you now know

Make sure your friends and family know the facts
about meningococcal disease

For more information, and to hear
from parents who have experience
with meningococcal disease,
visit knowmeningococcal.com.au

Just **scan the code** below



References: **1.** World Health Organization. Meningococcal meningitis Fact sheet N°141. WHO; February 2018. <http://www.who.int/mediacentre/factsheets/fs141/en/> (accessed Feb 2021). **2.** CDC VPD manual Chapter 8: Meningococcal disease. <http://www.cdc.gov/vaccines/pubs/surv-manual/chpt08-mening.pdf> (accessed Feb 2021). **3.** Rosenstein NE, et al. *N Engl J Med.* 2001;344:1378-88. **4.** Australian Technical Advisory Group on Immunisation (ATAGI). Australian Immunisation Handbook, Australian Government Department of Health, Canberra, 2018, immunisationhandbook.health.gov.au (accessed Feb 2021). **5.** Department of Health. Communicable Diseases Intelligence Australian Meningococcal Surveillance Programme annual report, 2019. 2020, Volume 44 <https://doi.org/10.33321/cdi.2020.44.62> (accessed Feb 2021).



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Meningococcal disease

Meningococcal disease is caused by a bacterial infection and can lead to serious illness. It is uncommon in NSW, and occurs more often in winter and spring. Infants, small children, adolescents and young adults are most at risk. Early treatment is vital.

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What is meningococcal disease?

- Meningococcal disease is a serious illness that usually causes meningitis (inflammation of the lining of the brain and spinal cord) and/or septicaemia (blood poisoning). Rare forms of the disease include septic arthritis (joint infection), pneumonia (lung infection) and conjunctivitis (infection of the outer lining of the eye and eyelid).
- People with meningococcal disease can become extremely unwell very quickly. Five to ten per cent of patients with meningococcal disease die, even despite rapid treatment.
- Historically winter and spring have been the peak seasons for meningococcal disease, however cases can occur year round.
- Meningococcal disease is caused by infection with *Neisseria meningitidis* of which there are several serogroups. Disease is caused by serogroups A, B, C, W and Y. The meningococcal C vaccine has reduced the number of cases caused by that serogroup.
- Between 5 and 25 per cent of people carry meningococcal bacteria at the back of the nose and throat without showing any illness or symptoms.

What are the symptoms?

- Symptoms of meningococcal disease are non-specific but may include sudden onset of fever, headache, neck stiffness, joint pain, a rash of red-purple spots or bruises, dislike of bright lights nausea and vomiting.
- Not all of the symptoms may be present at once.
- Young children may have less specific symptoms. These may include irritability, difficulty waking, high-pitched crying, and refusal to eat.
- The typical meningococcal rash doesn't disappear with gentle pressure on the skin. Not all people with meningococcal disease get a rash or the rash may occur late in the disease.
- Sometimes the classic symptoms may follow less specific symptoms including leg pain, cold hands and abnormal skin colour.
- Meningococcal disease can sometimes follow on from other respiratory infections.
- People who have symptoms of meningococcal disease should see a doctor urgently, especially if there is persistent fever, irritability, drowsiness or lethargy, a child is not feeding normally or symptoms have come on or worsened very quickly
- If you have already seen a doctor but symptoms continue to worsen, consult your doctor again or go to the Emergency Department.

How is it spread?

- Meningococcal bacteria are not easily spread from person to person and the bacteria do not survive well outside the human body.

- The bacteria are passed between people in the secretions from the back of the nose and throat. This generally requires close and prolonged contact with a person carrying the bacteria who is usually completely well. An example of 'close and prolonged contact' is living in the same household or intimate (deep) kissing.
- Meningococcal bacteria are not easily spread by sharing drinks, food or cigarettes.

Who is at risk?

Meningococcal disease can affect anyone, however there are certain groups that are at higher risk. These include:

- household contacts of patients with meningococcal disease
- infants, small children, adolescents and young adults
- people who smoke or are exposed to tobacco smoke
- people who practice intimate (deep mouth) kissing, especially with more than one partner
- people who have recently had a viral upper respiratory tract illness
- travellers to countries with high rates of meningococcal disease
- people with no working spleen or who have certain other rare medical conditions.

People who have had only minor exposure to someone with meningococcal disease have a very low risk of developing the disease.

Healthcare workers are not at increased risk unless they have been directly exposed to a case's nasopharyngeal secretions (for example, if they performed mouth-to-mouth resuscitation or intubated the case without using a face mask).

How is it prevented?

Vaccination is the key prevention against meningococcal disease. There are two meningococcal vaccines available:

- Meningococcal ACWY (Men ACWY) vaccine which provides protection against serogroups A, C, W and Y
- Meningococcal B (Men B) vaccine which protects against some strains of meningococcal serogroup B

Because routine childhood vaccines do not protect against all strains of meningococcal disease, all people must still be alert for the symptoms and signs of meningococcal disease, even if they have been vaccinated.

Recommendations

Any person from 6 weeks of age who wants to protect themselves against meningococcal disease is recommended to receive the two vaccines available in Australia.

Infants and children under 2 years, adolescents, and people with certain medical conditions are strongly recommended to receive both meningococcal vaccines.

Meningococcal ACWY vaccine is required for pilgrims to the Hajj and strongly recommended for persons travelling to areas where epidemics of meningococcal A,C, W and Y occur such as the meningitis belt of sub-Saharan Africa. For up to date vaccination requirements talk to your travel doctor, or General Practitioner.

Men ACWY and Men B vaccines are also recommended for people at occupational risk of meningococcal disease such as laboratory workers.

For more information see the [Australian Immunisation Handbook 10th Edition](#).

Vaccines funded under the National Immunisation Program

Men ACWY vaccine is provided for free under the National Immunisation Program for babies at 12 months of age, adolescents 15-19 years, and people with asplenia, hyposplenia, complement deficiency, or receiving treatment with eculizumab.

In NSW the adolescent dose is delivered via the School Vaccination Program in Year 10. Anyone aged 15-19 years who is not enrolled in school, or who misses their dose at school can access free vaccine via their General Practitioner.

Men B vaccine is provided for free under the National Immunisation Program for Aboriginal children up to 2 years of age, and for people with asplenia, hyposplenia, complement deficiency, or receiving treatment with eculizumab.

For more information see the [NSW Immunisation Schedule](#).

Previous meningococcal vaccination schedules and funding

Meningococcal C vaccine was provided under the National Immunisation Program between 2003 and 2018. In 2018 this was changed to the Men ACWY vaccine.

NSW Health funded Men ACWY vaccine was delivered via the NSW School Vaccination Program to students in the senior years of high school between 2017 and 2019.

Access for those not covered by the funded vaccine

Men ACWY and Men B vaccines can be purchased via private prescription from your General Practitioner.

How is it diagnosed?

Diagnosis is based on the patient's history and examination. This is sometimes difficult in the early stages of the disease. Confirmation of the diagnosis involves testing samples from the patient, including blood, cerebrospinal fluid, or skin samples. The time taken to get a test result can vary depending on the tests performed.

How is it treated?

Patients with meningococcal disease need urgent treatment with antibiotics, in hospital, and treatment is usually started before the diagnosis is confirmed by tests.

What is the public health response?

Hospitals and laboratories notify cases of meningococcal disease to the local public health unit (PHU). PHU staff will work with the doctor, the patient or the patient's family to identify the people who have been close to the ill person (depending on the duration and the nature of their exposure). These people are called contacts.

Contacts are given information about meningococcal disease. A smaller group of close contacts are carefully identified and given clearance antibiotics because they are the people most likely to be carrying the bacteria.

These antibiotics eliminate the bacteria from the throat and help prevent it from being transmitted to others. Clearance antibiotics are different to the antibiotics used to treat the infection and people who receive clearance antibiotics are still at some risk of developing the disease. All contacts should therefore be aware of the symptoms of meningococcal disease and should see a doctor urgently if these occur.

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