

# MENINGOCOCCAL MENINGITIS

## WHAT IS MENINGOCOCCAL MENINGITIS?

Meningococcal meningitis is an acute disease caused by one of 12 serogroups of *Neisseria meningitidis* bacteria; it is characterised by the sudden onset of fever, intense headache, vomiting and neck stiffness. A skin rash appears in the later stages of the disease and signifies severe illness.

Although the disease is preventable with meningococcal meningitis vaccination and treatable with antibiotics, sufferers may become very sick or even die within hours of onset if the condition is not diagnosed promptly and correctly. The disease is transmitted from person to person by respiratory droplets, i.e. coughing, sneezing and kissing. Extensive travel in crowded conditions and prolonged contact with the local population in overcrowded places are also risk factors.

### Meningococcal Meningitis in Australia

In the past, in Australia, meningococcal meningitis largely occurred in the form of serogroups B & C, however since the meningococcal meningitis vaccination with the MenC vaccine was introduced into the immunisation program, this strain is now much less common.

Meningococcal meningitis vaccination is the most effective means of protection, however it must be noted that there are no vaccines that protect against all serotypes. A conjugate vaccine that offers protection against the ACWY serogroups is routinely given to Australian children as part of the immunisation schedule using a quadrivalent (4-in-1) conjugate vaccine. It is with this type of vaccine that at-risk travellers are also provided immunisation against meningococcal disease from the ACWY strains. (*Schedule and age of administration vary with each vaccine brand*)

A meningococcal meningitis vaccination protecting against the B strain is available on private prescription in most states and Territories. Meningococcal meningitis B vaccines are funded for all Aboriginal and Torres Strait Islander peoples and, in South Australia, for all eligible children.

## WHERE IS MENINGOCOCCAL MENINGITIS FOUND?

Meningococcal meningitis occurs in all countries. In sub-Saharan Africa, epidemics of the meningococcal disease frequently occur during the dry season (December through June), particularly in the savannah areas extending from Mali eastward to Ethiopia, a region known as the 'Meningitis Belt'.

Serogroup A was responsible for frequent epidemics, however since the introduction of meningococcal meningitis A conjugate vaccination, the predominating strains in the region have shifted to serogroups C and W135 (although outbreaks caused by serogroup X also occur). Epidemics due to serogroups A and/or C have also occurred in parts of Asia, in particular northern India, Nepal and Mongolia, again during the dry season (November to May). A complex range of risk factors causes epidemics.

## RISK TO TRAVELLERS

The risk to travellers is generally low. Meningococcal meningitis vaccination is recommended for travel to the 'Meningitis Belt' during the dry season, for travel to areas with an active epidemic, or for prolonged travel when extensive contact with the local population in endemic areas is expected.

NOTE - ACWY meningococcal meningitis vaccination is mandatory for travellers making the pilgrimage to Saudi Arabia for the Hajj or Umrah. Full details of the requirement are set each year by the Ministry of Hajj in Saudi Arabia. For the pilgrimage, travel or seasonal work in Hajj zones, it is a requirement to submit a valid meningococcal meningitis vaccination certificate with a quadrivalent (ACYW) meningococcal vaccine received at least 10 days before the planned arrival to Hajj and Umrah areas.

## WHAT IS MENINGOCOCCAL MENINGITIS VACCINATION?

### Travel & Domestic:

- Conjugate ACYW135 vaccine
- MenB - two types
  - **a.** Recombinant multicomponent B vaccine
  - **b.** Recombinant lipidated factor H binding protein meningococcal serogroup B vaccine

## MENINGOCOCCAL MENINGITIS VACCINATION SCHEDULE

### ACWY conjugate vaccines:

- Age recommendations vary between the different vaccines. **Vaccination gives** protection for 5+ years. The Australian Technical Advisory Group on Immunisation (ATAGI) recommends extended suitability for some of the vaccines/age groups - see [Australian Immunisation Handbook](#).)

### Meningococcal B vaccines:

Meningococcal B vaccination is not funded on the National Immunisation Program (NIP) except for indigenous children. Some states and territories do fund it for all children or are proposing to do so. Please check with your GP.

- **Recombinant multicomponent B vaccine** - Administration of paracetamol is advised when giving each dose of MenBV to children <2 years of age due to the increased risk of fever following vaccine administration.
- Aged 2 months to 5 months (for first dose): Three intramuscular doses administered 8 weeks apart & single meningococcal meningitis vaccine booster at 12 months of age. ATAGI advises that the first dose can be given at 6 weeks of age.
- Aged 6 months to 11 months: Two intramuscular doses administered 8 weeks apart and a single booster at 12 months or 8 weeks after last dose (if later).
- Aged 12 months and older: Two intramuscular doses administered 8 weeks apart. No meningococcal meningitis vaccine booster is required. (No data on the administration to adults over 50 years of age but may be recommended if at high risk).
- **Recombinant lipidated factor H binding protein meningococcal serogroup B vaccine**
  - The standard schedule for routine immunisation: 2 doses (0.5 ml each) administered at 0 and 6 months
  - Schedule for individuals at increased risk of invasive meningococcal disease: 2 doses (0.5 ml each) administered at least 1 month apart, followed by a third dose at least 4 months after the second dose.

*The choice of dosing schedule may depend on the risk of exposure and the patient's susceptibility to meningococcal B disease.*

## LEVEL OF PROTECTION

- **Meningococcal C conjugate vaccines:**

**Infants** - Data indicates that immunity was achieved in 91% of infants after 1 dose and 98-100% of infants one month after the third dose. There are currently no recommendations for boosting.

**Adults** - 99-100% of adults have an adequate response after a single dose of vaccine.

- **Meningococcal B vaccines**

**Recombinant multicomponent B vaccine:** vaccine effectiveness after 2 doses given at 2 and 4 months of age was 82.9%.

**Recombinant lipidated factor H binding protein meningococcal serogroup B vaccine:** vaccine effectiveness after 2 doses given at 0 and 6 months was 73.5% and 82–83% after 3 doses received at 0, 1 and 6 months, or 0, 2 and 6 months

- ACWY conjugate vaccine (Travel & Domestic):

~90% effective.

Effective against serotypes A, C, Y, and W135.

**Contraindications:** Should not be administered to individuals who have previously experienced a serious reaction to any of these vaccines or those who are known to be hypersensitive to any of the vaccines' components.

## POSSIBLE SIDE EFFECTS

Meningococcal meningitis vaccination side effects are usually infrequent and mild:

- Common: Redness and swelling around the injection site.
- Less common: Feeling unwell, headache, fever, lethargy.
- Rare: Wheezing, rash, severe local reactions.

As with all vaccines, there is a small risk of allergic reactions.

## FAQS

### ~~HOW MANY MENINGOCOCCAL INJECTIONS DO YOU NEED?~~

There are two different types of meningococcal vaccine: one to protect against the ACW and Y groups (MenACWY) and the other covers the B strain (MenB).

For infants, the number of doses for both meningococcal meningitis vaccination types depends on the age when first administered and the vaccine brand. See more information for [ACWY](#) and [B strain](#) vaccination in this age group.

With adolescents aged 15 to 19 years, a course of two vaccinations protects against the B strain, and there is a single dose for the [ACWY groups](#), which offers protection for around 5 years.

### ~~DOES MENINGOCOCCAL VACCINATION LAST, OR IS RE-VACCINATION REQUIRED?~~

For the purposes of travel, booster doses of ACWY vaccines are recommended following the primary course if at continued risk of meningococcal infection. The timeframe depends on the age when that ACWY primary course was completed (this also applies to people at risk of invasive meningococcal disease):

- If aged 6 years or younger, the first booster dose is due after 3 years and then every 5 years after that. If the person was 7 years of age or older, then the interval is 5 years for booster doses if still at risk.

### ~~IS MENINGOCOCCAL MENINGITIS VACCINE MANDATORY?~~

Bacterial meningococcal disease is a very serious infection that can cause severe scarring, loss of limbs, brain damage and death.

The ACWY meningococcal meningitis vaccine for children at 12 months of age is a requirement of the 'no jab, no play' legislation for enrolment in childcare on a national level in Australia. There are further requirements for the individual states and territories. More information [here](#).

While there is a general recommendation for anyone who wants to protect themselves or their young children from 6 weeks of age against meningococcal disease to receive the MenACWY vaccine and MenB vaccine, the advice provided in the Australian Immunisation Handbook is more robust for the following groups to be vaccinated with meningococcal meningitis vaccines:

- Infants and children under 2 years of age
- Healthy adolescents aged 15–19 years
- All Aboriginal and Torres Strait Islander people aged 2 months to 19 years
- People with medical conditions that increase their risk of invasive meningococcal disease
- Laboratory workers
- Travellers to areas where meningococcal disease is more common or who travel to mass gatherings such as the Hajj.

In the United States, vaccination for meningococcal meningitis is required of all entering college students.

## **~~WHO SHOULD RECEIVE MENINGOCOCCAL MENINGITIS VACCINATION AND WHY?~~**

The strong recommendation for meningococcal meningitis vaccination (both MenACWY and MenB):

- Children aged under 2 years of age who have the highest rate of invasive meningococcal disease
- Adolescents aged 15-19 years have a high rate of IMD, and they play an important role in the transmission of the infection due to their high rates of carriage, whereby the *Neisseria meningitides* bacteria colonise the upper respiratory tract without causing invasive disease.
- All Aboriginal and Torres Strait Islander people aged 2 months to 19 years as they are at substantially higher risk for meningococcal disease than non-indigenous people
- People with specified medical conditions that increase the risk of meningococcal disease, e.g. those who have certain blood disorders, with weakened immune systems (such as without a functioning spleen), people living with HIV and those who have had a stem cell transplant.
- Adolescents and young adults (age 15-24 years) who are living in close conditions (e.g. military recruits or in residential accommodation) as meningococcal bacteria are carried and spread more frequently in these populations.
- Adolescents and young adults (age 15-24 years) who are current smokers as they have a higher risk of carrying the meningococcal bacteria.
- People travelling to countries where there is an increased risk of exposure to meningococcal disease, in particular, the 'meningitis belt' of sub-Saharan Africa

Specifically required for pilgrims attending the annual Hajj in Mecca

## **~~SHOULD ADULTS GET THE MENINGITIS VACCINE?~~**

Apart from the recommendations for adults to receive meningococcal vaccination for specific medical conditions and travel, the advice is for anyone who wants to protect themselves against invasive meningococcal disease to receive MenACWY and MenB vaccines (from as early as 6 weeks of age).

## **~~IS MENINGOCOCCAL VACCINE THE SAME AS MENINGITIS VACCINE?~~**

The 2 types of meningococcal/meningitis vaccines offer protection against the ACWY and B strains of *Neisseria* bacteria that can cause meningitis (inflammation of the lining of the brain and spinal cord). A pneumococcal vaccine is routinely administered to infants and young children, which helps to prevent pneumococcal meningitis, a rare complication of invasive pneumococcal disease.

## **HOW DO PEOPLE GET MENINGOCOCCAL MENINGITIS?**

Transmission is through close contact and by droplets - through saliva, mucous, kissing, sharing eating utensils, coughing and sneezing. This is a concern particularly in day-care centres, schools, college dormitories or with young adults in close living conditions. It is also a risk if travelling in areas that have an outbreak of meningococcal disease. Transmission is possible from a person who is showing symptoms of meningococcal infection, but it can also occur from asymptomatic carriers.

## **CAN YOUR BODY FIGHT OFF MENINGOCOCCAL MENINGITIS WITHOUT TREATMENT?**

Meningococcal infection is a medical emergency as it can be rapidly fatal. Antibiotics are effective in the treatment of invasive meningococcal disease if they are administered early, often before *Neisseria* bacteria are identified, in order to prevent severe infection. Even with antibiotics, around 10 percent of cases will experience long-term complications, and approximately 10 - 15 percent of cases result in death.

Close contacts of confirmed meningococcal cases are also given a course of antibiotics to protect them from developing the infection.

## **HOW LONG CAN MENINGOCOCCAL MENINGITIS LAST?**

Bacterial meningitis is generally treated by antibiotics, with the length of time for recovery varying between individuals. Most people recover within 7-10 days if they have not developed complications.

## **CAN YOU GET MENINGITIS IF YOU'VE BEEN VACCINATED?**

None of the vaccines used for any disease is guaranteed to work one hundred percent of the time and they don't necessarily fully protect you against new strains of the various infectious diseases, including meningococcal meningitis. So it's best not to be complacent since there is still a chance that people vaccinated against meningococcal meningitis may develop the disease.

Researchers have found that suggests meningococcal meningitis vaccines may be less effective when given to people taking some specific types of medications for blood disorders. Check with your specialist for meningococcal meningitis vaccination recommendations and be aware of the symptoms of meningococcal disease. If you do have symptoms, as in all cases of suspected meningococcal meningitis seek medical care straight away.

**More information on Meningococcal Meningitis is available during your pre-travel consultation with Travelvax. Call 1300 360 164 for the location of the clinic nearest to you.**