

Updated version (04/04/2019 – UM) see: www.travelhealth.be

MENINGOCOCCAL A, C, W₁₃₅ AND Y MENINGITIS

1. Introduction

Meningitis (inflammation of the membrane around the brain) can be caused by various infections: viruses, bacteria, mycobacteria, fungi and yeasts, amoebae and worms. The meningococcus is one of the bacteria that can cause bacterial meningitis, with or without blood poisoning. There are various different serotypes, but the most important strains are A, B & C and to a lesser extent X, Y and W135. The meningococcal group A is more common in Africa and the meningococcal group B is more common in the Northern Hemisphere and to a much lesser extent group C, since the widespread introduction of the conjugated monovalent meningococcal-C vaccine in small children. Meningococcal group W135 is less common, but the number of cases is rising in some countries (including West Africa, UK, USA and Australia). Meningitis Y is also on the increase in some European countries.

2. Epidemiology

Meningitis caused by **meningococcal group A** is epidemic in the **meningitis belt**, a 600 km wide semi-arid zone (Sahel) in sub-Saharan African, stretching from Mauritania, through Gambia and Senegal to Ethiopia (see map). The meningococcal meningitis **epidemics** are **seasonal and occur in the cooler dry months (from the end of December to June – in rare cases until early July)**. The mechanism behind these outbreaks **which only occur within the local population**, is not very clear: dry and dusty air irritates the mucous tissues, because of the cooler temperatures the local population lives closer together in overcrowded conditions and could thus possibly be promoting the occurrence of epidemics.

In the past epidemics have been reported in various neighbouring African countries, occasionally spreading to regions of Angola, Burundi, Congo, Uganda, Kenya and Tanzania, Malawi and Mozambique.

In the last 20 years epidemics have also been reported in Saudi Arabia (among pilgrims to Mecca) and consequently in a number of other Asian countries. Due to mandatory vaccination programs, amongst other measures, however, no more outbreaks were reported these last years.

3. Vaccination for travellers

Only the quadrivalent vaccine against meningitis A, C, W135 and Y is of value in travel medicine. There are 2 types of 4-valent vaccines: conjugated vaccines (Nimenrix[®] or Menveo[®], price: € 52.60) and the non-conjugated vaccine (Mencevax[®], price: € 36.11). The use of a conjugated vaccine is preferable, as this offers a longer period of protection. Chemoprophylaxis (preventative use of antibiotics) for meningococcal meningitis does not have any value in travel medicine.

3.1 Vaccination indications for travelers:

- The vaccine is indicated for individuals who travel **during the dry season** to countries where meningitis is highly endemic **from December until the end of June** in the countries of the **Sub-saharan meningitis belt**,
 - and who **will come into close contact with the local population** (e.g. travel by public transport, staying the night in local guesthouses, (collective housing), **attending mass gatherings**,
 - **migrants travelling to their home country and staying with their family**)
 - **or those who stay for more than 4 weeks**
 - **individuals who have had their spleen removed** or whose spleen is no longer functioning should be vaccinated, even if they are only staying for a short time in one of the risk countries.
- Vaccination is compulsory for **pilgrims travelling to Mecca** (Hajj and Umra), from the age of 2 years. The vaccine must be administered 10 days prior to travel.

The ordinary travel is not at any real risk during a **short stay** in an area where an **epidemic** has been detected (no more than at home, unless they are in very close contact with the local population). The World Health Organization states that a vaccination should be considered in such cases and these travellers should also be vaccinated if necessary.

3.2 Vaccination scheme:

3.2.1 With adults:

- **Conjugated 4-valent vaccines** (Nimenrix[®] or Menveo[®], price: € 52.60): A **one-off** intramuscular injection (0.5 mL) will suffice. Protection becomes effective from the 10th day onwards and lasts for at least **5 years**. If there is a persistent risk, we are currently recommending that a booster be given after 5 years (after 3 years for children who had their first vaccination before the age of 7).
- **Non-conjugated 4-valent vaccine** (Mencevax[®] price: € 36.11): one-off intramuscular injection. Protection becomes effective from the 10th day onwards. If there is a persistent risk, a booster is recommended after 2 years.

3.2.2 With children and babies

- **Nimenrix[®]** can be administered **from the age of 6 weeks**.

Vaccination with Nimenrix[®]:

Babies between 6 weeks and 6 months old:

Two doses with two months interval. A booster injection at the age of 12 months and minimum 2 months after the last dose.

Babies between 6 months and 1 year old:

1 dose. An extra dose can sometimes be considered in case of elevated risk of meningitis W or Y. More information can be found in the product leaflet.

From the age of 12 months: one-off injection; in the case of persistent exposure, a booster is recommended after 3 years for children who received their last vaccination before the age of 7 years and after 5 years for everyone who received their last vaccine after the age of 7 years.

- **Menveo® can be administered from the age of 2 years.** In some countries (since 2010 in the UK), Menveo® is administered from the age of 2 months, with a second dose one month after the first dose and (if the risk persists) a third dose after the age of 12 months. One dose will suffice after the age of 1 year. In the case of persistent exposure, a booster is recommended after 3 years for children who received their last vaccination before the age of 7 years and after 5 years for everyone who received their last vaccine after the age of 7 years.
- **Mencevax®:** can be administered from the age of 2 years.

3.3 Contraindications:

Serious acute conditions (a mild febrile condition is not a contra-indication). Pregnant women (this is only a theoretical risk: vaccination is permitted in the event of a real risk of infection).

3.4 Side effects:

Some localised reaction may occur and a systemic reaction occurs in rare cases (fever in the 24 hours after the vaccination). The side effects are always benign and of brief duration.

4. Pilgrims to Mecca

Pilgrims to Mecca must be able to submit proof of vaccination for Meningitis ACW135Y from the age of 2 years before they can apply for a visa. After vaccination with a **conjugated vaccine**, the individual is protected for **5 years**. The vaccination certificate must state that a **4-valent conjugated vaccine** was used and the brand that was administered is also stated. If a **non-conjugated vaccine** (Mencevax®) was administered, or if the proof of vaccination does not meet the abovementioned specifications, then the proof of vaccination is only valid for 3 years.

5. Extra information:

In the Belgian basic vaccination schedule, a **conjugated monovalent meningococcal C vaccine** is administered to children at 15 months. However, this vaccine only offers protection against the **C serogroup** and is not used in travel medicine. If a child has already received this vaccine and there is an indication for administration of the quadrivalent meningococcal vaccine, then this second vaccine can be administered one month after the first vaccination. Where appropriate, the quadrivalent meningococcal vaccine (Nimenrix®) can be administered instead of the conjugated monovalent meningococcal C vaccine at the age of about 15 months.

A vaccine against meningitis **serogroup B** (Bexsero® and Trumenda®) has recently become available in Belgium. This vaccine is only recommended for individuals with an increased risk (such as people without a spleen or a dysfunctional spleen, certain immune disorders) and has no place in travel medicine. For more information: refer to the advice from HGR: <https://www.zorg-en-gezondheid.be/sites/default/files/atoms/files/Advies%20Hoge%20gezondheidsraad%20vaccinatie%20%20van%20kinderen%2C%20adolescenten%20en%20personen%20met%20een%20verhoogd%20risico%20voor%20meningokokken%20van%20groep%20B.pdf>.

For more information about the vaccination against meningitis ACWY in the Netherlands:

<https://www.zorg-en-gezondheid.be/vaccinatie-tegen-meningokokken-acwy>

Card meningitis belt: https://www.cdc.gov/travel-static/yellowbook/2016/map_3-11.pdf