



## MENINGOCOCCAL A MENINGITIS

Of the three major causes of meningococcal meningitis (serogroups **A, B & C**), meningococcus **A** occurs mainly in Africa, and meningococcus **B** (and to a lesser extent meningococcus **C**) in the northern hemisphere. Meningococcus **W<sub>135</sub>** was formerly also present among pilgrims to Mecca and has consequently since 2000 also been reported in West-Africa.

Meningitis caused by group A meningococci is hyperendemic in the so-called **meningitis belt**, a 600 km wide semi-desert zone (Sahel) in Sub-saharan Africa, including Mauritania, Gambia, Senegal and Ethiopia (see map). The occurrence of meningococcal meningitis **epidemics is seasonal. It begins during the cooler, dry months from December to February, and ends at the beginning of the rainy season in June (exceptionally the beginning of 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.

### **Vaccination indications for travelers:**

1. The vaccine is indicated for individuals who travel 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, migrants travelling to their home country and staying with their family) or those who stay for more than 4 weeks.
2. Vaccination is obligatory for all pilgrims  $\geq 2$  years to Mecca (Haj and Umra). It has to be administered 10 days before the trip and remains legally valid for 3 years (obligatory quadrivalent vaccine, see below).
3. During a short stay in an area where an epidemic is reported at the time of travel, ordinary tourists run no real risk (no more than at home, unless maybe if they remain in close contact with the local population). The World Health Organization recommends that vaccination should be considered, and if desired these tourists can be vaccinated.
4. 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.

Chemoprophylaxis (preventive administration of antibiotics) for meningococcal meningitis has no place in travel medicine.

### **Vaccination scheme:**

For travellers to Africa and Mecca we currently use only the vaccines which works simultaneously for serogroups A, C, Y and W<sub>135</sub>.

1/ **Mencevax<sup>®</sup> A-C-Y-W<sub>135</sub>** (price: € 33), a quadrivalent purified capsular polysaccharide-based meningococcal vaccine (the saccharide molecules of the bacterial capsule). A single subcutaneous injection of 0,5 ml suffices, with a revaccination every 3 years. This vaccine is in principle administered from the age of 2 years. Protection becomes effective from the 10th day.

This vaccine can be administered to Mecca pilgrims and travellers  $\geq 2$  years who plan to journey only once or sporadically to a region of the Meningitis Belt during the meningitis season.

2/ **Menveo<sup>®</sup>** (price: € 52,60), a quadrivalent purified capsular conjugated polysaccharide-based meningococcal vaccine (the saccharide molecules of the bacterial capsule are linked to a protein).

A single intramuscular dose of 0,5 ml suffices. It is uncertain when a booster dose is required (in the US a booster is recommended after 3 to 5 years, although the protection is probably longer lasting).

The vaccine can be administered from the age of 2 years on, off-label even from the age of 2 months. Protection is ensured from day 10. Menveo<sup>®</sup> is more expensive than its unconjugated counterpart, but most probably offers a better and longer lasting protection.

Its use is indicated for frequent travellers, expatriates and their children, as well as for immunodepressed and spleenless people.

### **Contraindications:**

Severe acute infections. (A mild feverish condition is not a contraindication to the vaccine). Pregnant women (only a theoretical risk: if there is a high risk of infection, pregnant women should certainly be vaccinated).

### **Side effects:**

Some local reaction is possible, but systemic reactions (fever in the 24 hours following the vaccination) are rare. The side effects are always mild and short-lived.

### **Vaccination of children and babies**

The above mentioned meningococcal vaccines can in principle be administered from the age of 2 years. However, children from 3 to 12 months are usually the principal victims of meningococcal sepsis and/or meningitis.

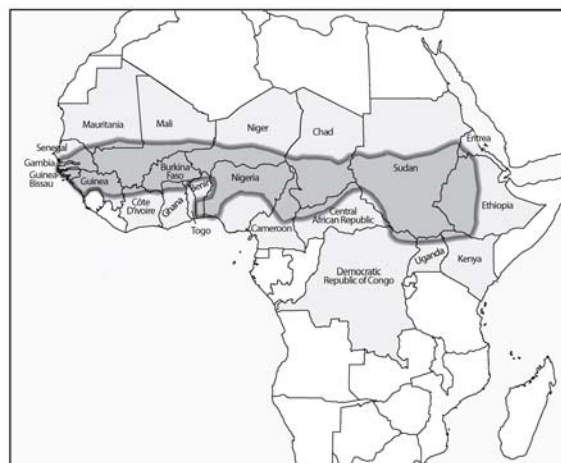
In the UK, since 2010, Menveo<sup>®</sup> is being administered to children  $\geq 2$  months, with a booster after 1 month and followed – if the exposure to meningitis persists – with a 3<sup>rd</sup> dose from the age of 12 months on.

For children  $\geq 1$  year 1 initial dose suffices. When indicated, this scheme shall also be used in Belgian children.

### **NB**

- **conjugated monovalent meningococcus C vaccin** effective in children under the age of 2 years (from the age of 2 months) is currently available on the Belgian market. However, this vaccine protects only against the **C-serogroup**. As such it cannot be used in travel medicine, as the risk of meningococcus C infection while travelling is no greater than in Belgium, and usually even somewhat lower. This vaccine is administered to all Belgian children at 15 months (together with the hexavalent vaccine). If the monovalent was however already given and a tetravalent is indicated, an interval of 1 month between the 2 injections must be observed. Menveo<sup>®</sup> may be used as a replacement for this vaccine around the age of 15 months.
- There is **no** vaccine against meningitis **serogroup B** (an important cause of meningococcus meningitis in Belgium).
- We now have available effective vaccines against Haemophilus influenzae type b and pneumococcus, which are also worrying bacterial meningitis pathogens in children (vaccination up to 5 years of age).

<http://www.itg.be/itg/GeneralSite/MedServ/pg/images/kaart%20meningo%202011%20kleur%20def.jpg>



**AFRICA**