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HEPATITIS B

IT IS NEVER TOO LATE TO START THE VACCINATION AGAINST HEPATITIS B, EVEN SHORTLY BEFORE DEPARTURE!!!

Hepatitis B is a viral liver inflammation, mainly transmitted via contaminated blood and blood products (blood transfusion, contaminated needles, open wounds), or via sexual contact. The incubation period is 6 weeks to 6 months (with an average of 2-3 months).
"Vertical" transmission from mother to child (principally in the period around the birth) is also a major transmission route. In addition to this, there is also "horizontal" transmission, such as among children in institutions or in developing countries. Here transmission takes place via minor wounds, scratches or bites. The saliva of some virus carriers apparently contains infectious particles. Transmission from adopted children, who are carriers, to members of the receiving family, can also happen via horizontal transmission.

In about 90% of the children and 60% of the adults an acute hepatitis B infection is asymptomatic. A symptomatic infection with hepatitis B usually causes severe illness (with absence from work for several months). The risk of a fulminant course of the hepatitis is estimated to be 1/100 to 1/1000, with mortality of 1 in 3. If an adult is infected, there is approximately a 1 in 10 risk of becoming a chronic carrier, irrespective of whether the infection is asymptomatic. About 85% of babies infected at birth become chronic carriers.

However, the most insidious aspect for these carriers is the possibility of developing chronically aggressive hepatitis, which is estimated at 3% of all infections. In a lot of cases chronic aggressive hepatitis eventually leads to liver cirrhosis and primary liver cell carcinoma.

The vast majority of the more than 400 million hepatitis B carriers live in developing countries. Worldwide the hepatitis B virus is therefore a major cause of liver cirrhosis and primary liver cell carcinoma. The World Health Organization puts hepatitis B in 9th place among the principal causes of mortality in the world. It is estimated that hepatitis B takes 1 million human lives per year.
In Belgium approximately 7 to 8% of the population have been in contact with the virus, and 7 out of 1,000 inhabitants are carriers of the virus.
Hepatitis B endemic countries are more and more visited.

(**Card WHO:** http://www.who.int/ith/en/ → Disease Distribution Maps).
However, it appears from a number of well-documented studies that the ordinary tourist does not run any greater risk of an infection with hepatitis B than in his/her own country, (the risk while travelling is estimated to be 4/100,000 per month) but this figure increases sharply with risk behaviour (such as sexual risk behaviour).

VACCINATION

The present hepatitis B vaccine (Engerix®, Hbvaxpro®) is very effective and 100% safe. An antibody response is obtained in 90 – 95% of vaccinated adults and this is even higher in children.

Basic Schedule:

- **Schedule:** 2 injections with one month between injections, 3rd injection after 4 to 6 months (protection after 4-6 months).
- **Accelerated schedule: 3** injections with 1 month interval, repeat injection after 1 year (protection after 2-3 months). If there is an urgent necessity for rapid immunity, a **super fast scheme** is possible where the first 3 injections may be administered at intervals of only 1 to 2 weeks (day 0-7-21). A **4th** injection after one year may not be forgotten, this in order to guarantee a lifelong immunity.

The vaccine may be administered together with any other vaccine. For children up to and including the age of 15 half a dose is sufficient (=Junior form) when reimbursed for children up to and including 12 years of age).
With adults, an antibodies detection is advised 1-3 months after the **complete** vaccination scheme; in persons with a normal immunity, the presence of (at least 10 IE/ml) antibodies means a **lifelong protection** against asymptomatic forms of the disease and chronic support; this is obtained in more than 90-95% of the cases with 1 vaccination series (less high % with persons with decreased immunity, persons above the age of 40 years, and/or obese persons and/or smokers), in children this is even higher. After completion there is a lifelong immunological memory, even when the antibodies are no longer measurable.

If vaccination against hepatitis A and B is indicated, one can use the combined form Twinrix® should be used. Two injections with an interval of one month, and a 3rd after 4 to 6 months.

N.B. Occasionally non-responders show no or unnotable titres (lower than 10 IU/ml) after the complete vaccination series of 3 injections. In that case one can follow a revaccination scheme as advised by the High Health Council. This can be done either by a complete new scheme (for example 0,1,6 months), or with a scheme of 2 simultaneously administered doses (one in the left and one in the right upper arm muscle), followed by again 2 doses 2 months after the first administration (also in the left and right upper arm muscle); a serological antibodies detection (anti-HBs) must be conducted again 1-3 months after the revaccination scheme.

INDICATION

There is often no indication for vaccination for the ordinary tourist, or at any rate no more urgently than for someone who stays at home. However, the risk of infection during a stay in Africa, Asia, Latin America or the Soviet countries can significantly increase when the traveller belongs to one of the so-called higher risk groups.

According to the WHO, vaccination against hepatitis B must be taken into CONSIDERATION for every traveller.

1. **People who regularly travel to Asia, Latin America, Africa.**
2. People who might have sexual contacts (with the native population or with the other travellers), or

having received **piercings or tattoos** and this unregard the length of the journey! The hepatitis B vaccine must not give the traveller a false sense of security because the risk for sexually transmitted diseases and AIDS remains just as real. Transmission is also possible for **"accident-prone"** travellers (like motorbike riders, those taking part in dangerous sports, undertaking an adventurous trekking or a bicycle trip, etc.) who run more risk being involved in an accident by their activity and will have to be treated in rudimentary hospitals. Persons having **medical (also acupuncture, etc.)** or **dental interventions** must also consider vaccination.

3. Those going to (sub)-tropical areas **for longer periods (several months)** are likewise candidates for vaccination, even though the duration of the journey is of lesser importance than sexual risk behaviour or dangerous sports. Even if the hygienic standard of living is high throughout the whole stay, the risk of local medical care and therefore the risk of contagion through infected needles increases with the frequency of travelling, the duration of the journey, also with close social contacts with the local population, like the care of orphans or street urchins (contagion through direct or indirect contact with oral mucosa, conjunctiva and skin wounds).
4. Hepatitis B vaccination is strongly recommended for **children** who are going to live in developing countries and will have regular contact with local children. Here there is a real risk of horizontal transmission. This applies certainly for children of immigrants from countries with a large number of virus carriers, when they spend their holidays in their home country. ("VFR travellers", "**V**isiting **F**riends & **R**elatives"). N.B. Principally all children and adolescents are vaccinated since 1999.
5. Employers are obliged by law to provide the necessary information on hepatitis B infection to their employees who for professional reasons have to stay repeatedly or for long periods in areas where hepatitis B is widespread and to offer them the possibility to have themselves vaccinated (Belgian law gazette of 10.02.1988).
6. All medical personnel and other **health workers** should be vaccinated (whether they travel or not).

For all these risk groups the argument of cost should not outweigh the benefit of being vaccinated and protected. At least 3 doses should be administered before departure, so that a satisfactory immunological response is obtained. For people going to live and work in the tropics it is certainly worth the trouble to at least start the vaccination, even if it is not possible to complete the whole series before departure. It is known from stability studies that Engerix-B® injection ampoules can be taken in hand-luggage during a flight, and can be kept in a refrigerator upon arrival at the final destination. As the vaccine is already packed in an injection syringe with needle, safe administration is possible, even in the (sub)tropics.

It happens quite regularly that patients forget to follow the whole vaccination series. In that case, "each injection counts" for hepatitis A as well as for B. This means that when there is a long delay (even of several years) the course does not have to start again from zero. The next injections can be carried on according to the plan, i.e., at the point where they left off.