



PREGNANCY, PREGNANCY WISH AND BREAST-FEEDING

Travelling has become so commonplace that few women postpone a trip because of pregnancy. More and more young couples, planning to get pregnant or occupied with in vitro fertilisation (IVF), quickly organise an exotic trip, because they don't yet have to worry about their first child. A few facts should nevertheless be taken into consideration:

- Statistically, the chance of requiring **medical intervention** is greater for a pregnant woman. It is not always possible to foresee whether problems will arise during pregnancy. The quality of the medical infrastructure in the country of destination should be looked into before departure.
- The risk of **infections** is higher when travelling. Infections can also be more difficult to treat due to the potential harmful effect of certain medicines on the embryo. In addition, any infection that is accompanied by high body temperature can bring on the delivery.
- It is often only a tourist trip and it is better not to actively seek problems. Choosing a different travel destination or postponing the trip is always a possibility.

As the risk of spontaneous miscarriage is greatest during the first three months, it is better to postpone a long journey until after this period. Travelling while pregnant does not increase the risk of miscarriage, but coping with possibly severe haemorrhage can cause problems, especially in remote areas. The combination of both morning sickness and motion sickness increases the risk of intense vomiting resulting in dehydration, especially in tropical circumstances.

During the third trimester the things to watch out for are haemorrhages (e.g. placenta praevia), toxæmia (swollen feet, high blood pressure, protein in the urine) and premature rupture of the membranes. Moreover, travelling during the last three months of pregnancy is physically difficult and uncomfortable. From 32 weeks a pregnant woman may no longer undertake any intercontinental flight, and from 36 weeks a pregnant woman may no longer undertake any flight. It is better to wait 7 days after giving birth before flying again. The woman's doctor should give her a certificate showing the expected date of delivery.

The ideal period for travel is approximately between 16 and 28 weeks: the first pregnancy checks have been carried out, the period of morning sickness / nausea has passed, there is less chance of miscarriage and the risk of premature labour is still somewhat distant.

Pregnant women **are discouraged** from travelling to remote areas, to regions where yellow fever is endemic (if not vaccinated) and to areas where resistant malaria is prevalent, with a high transmission risk (zone C = WHO zone IV).

All routine pregnancy examinations must be carried out before departure. For compulsory vaccinations and malaria prophylaxis we refer travellers to the following brochures in which the essential points are summarised.

The emphasis lies on prevention of illnesses such as diarrhoea, worm infestations, skin infections, and of course also rubella, toxoplasmosis, etc. The advice of a specialist may also be obtained if there is any doubt about possible contraindications for medications.

1 Vaccinations

As a rule, live attenuated vaccines as the measles-mumps-rubella vaccine or the yellow fever vaccine should not be administered to pregnant women. Women should also avoid getting pregnant for 1 month after the administration of these vaccines.

Inactivated vaccines can, whenever necessary, be administered without problem.

Inactivated vaccines may also be administered during lactation; activated vaccines may not be given

during **lactation** (unless in risk situations).

1. Yellow fever vaccine is not routinely given to pregnant or breastfeeding women. A certificate may be required. In emergency cases (actual danger of transmission or epidemic of yellow fever) the vaccine may be administered during lactation and from the 6th month of pregnancy on. No Problems have ever been reported after accidental vaccination before the 6th month of pregnancy, so there is normally no cause for alarm. It is safe to become pregnant one month after vaccination.

2. Tetanus vaccination must be up to date. Pregnant and breastfeeding women may be vaccinated with the different combined vaccines when indicated (the instructions for use mention “when absolutely necessary”), Tedivax Pro Adulto[®] (the combined tetanus/diphtheria vaccine), Revaxis[®], (the combined tetanus/diphtheria/olio vaccine) or Boostrix[®] (the combined tetanus/diphtheria/pertussis vaccine), preferably during the second or third trimester of the pregnancy. Boostrix[®] is systematically advised in Flanders, also for pregnant or breast-feeding women, when they didn't already have a booster injection against pertussis in the past.

3. Pregnant women should be protected against poliomyelitis; the booster inoculation should be with killed vaccine (single vaccine after the complete vaccination and if the previous vaccination was given more than 10 years ago). Revaxis[®] can be used when indicated (see above). Breast-feeding is no contra-indication. The instructions for use of Boostrix Polio[®] mention that this vaccine is not recommended during pregnancy. The oral polio vaccine is no longer commercialised in Belgium but is still used in the tropics; it is usually not given to pregnant women.

4. Vaccination is recommended to women who have no immunity to hepatitis A. Gamma globulins are no longer available. Vaccination provides complete and long-lasting (lifelong) protection and may be administered from the second trimester of pregnancy.

NB Hepatitis E is a viral liver infection which looks very similar to hepatitis A. The virus is probably transmitted by faecal contaminated water. The disease almost always runs its course without problem, but in pregnant women it can be serious, with a significant risk of fatal outcome. Hepatitis E probably exists in all developing countries but has mainly been observed in Africa, Asia, the Middle East and Mexico. There is no vaccine, but fortunately the infection is rare amongst travellers. Hepatitis E can be prevented by good hygiene measures concerning beverages and food.

5. Due to a lack of sufficient data, the relative risks to pregnant women of the oral and of the injectable typhoid vaccine are not known. The live oral vaccine is therefore not administered to pregnant women (is not available in Belgium for the moment). The inactivated vaccine may be administered. Breast-feeding is no contra-indication, both vaccines may be administered.

6. Hepatitis B vaccine may be administered to pregnant women. Seen the fact that pregnant women are more at risk of being hospitalized when traveling for longer periods, and seen the possible consequences of infections on the unborn child, vaccination is recommended. Breast-feeding is no contra-indication.

7. Meningococcal meningitis vaccine may be administered to pregnant women. Breast-feeding is no contra-indication.

8. Rabies vaccine may be administered. Breast-feeding is no contra-indication.

9. Measles, mumps and rubella vaccine is contraindicated during pregnancy. Breast-feeding is no contra-indication.

10. Vaccination against Frühsommer Meningo-Encephalitis and Japanese Encephalitis may be administered to pregnant women when there is a high risk of infection. Breast-feeding is no contra-indication.

There are no specific data on the safety of vaccines against Frühsommer encephalitis and Japanese encephalitis in pregnant women and breastfeeding women, and hence these vaccines should not be routinely administered. However, if a pregnant/breastfeeding woman can not avoid travelling to a highly endemic area, she should certainly be vaccinated because of the great risk of infection for mother and child.

11. BCG: not routinely administered to pregnant/breastfeeding women.

2 Malaria

1. Situations occasionally arise in which a pregnant woman has to stay in a malaria risk region (like residents and others). Once again, the important thing is the actual risk of infection. Maximum prevention is indicated here, because of the proven detrimental effects of malaria for both mother and foetus (the risk of severe malaria is also higher with a newborn child).

2. Prevention primarily consists of “protective measures against mosquito bites” (read the concerned paragraphs in the brochure about malaria thoroughly). The malaria mosquitoes seem to be more attracted by pregnant women than by those who are not. The use of DEET-based repellents for a limited period is not discouraged, as no side-effects in pregnancy have been reported (though the effects of long-term use are not known). It is advisable to use DEET in a concentration of 20 to 30 % maximum. To limit contact with the product as much as possible it is recommended to rinse off residues from the skin when protection is no longer necessary (like indoors at night).

3. Chemoprophylaxe

According to the World Health Organization (WHO), Lariam® can be used during the second and third trimester of pregnancy. This requires a good dialogue between medical practitioner and patient.

Until recently the use of Lariam® was contraindicated during the first three months of pregnancy due to a theoretical possible harmful effect on the foetus. The American CDC guidelines show no arguments of any health risks from the use of Lariam®, on the foetus in the first three months of pregnancy. An acute malaria attack on the other hand, may be dangerous for the unborn. According to the Belgian medical leaflet (last update 17/09/01), Lariam® may be used during the first trimester, but only if the risk for malaria outweighs the risk of the drug’s side effects. When the risk of malaria is high and unavoidable, a physician, after having conferred with a specialist, may prescribe Lariam during the first trimester.

NB. According to the World Health Organization and the Belgian drug insert, when taking Lariam women of child bearing age should make sure that they use an effective contraceptive throughout the entire period of treatment and continue to do so until (!) three months after taking the final dose, due to the slow elimination of Lariam. If Lariam® is taken accidentally after conception or at the beginning of the pregnancy, there is, however, no reason for alarm, as extensive experience has shown that there is no increased risk of genetic abnormalities or spontaneous abortion, there is therefore no reason to consider abortion.

4. Malarone® is currently not recommended during pregnancy as insufficient information is available. In France, Malarone® is sometimes prescribed during pregnancy (at one’s own peril), in case of high malaria risk, because no damaging side-effects were ever reported. If Malarone® is taken accidentally after conception or at the beginning of pregnancy, there is, however, no reason for alarm, and none to consider abortion. The patient’s doctor can contact the manufacturer for the latest scientific data. In case Malarone® is used, pregnancy may be considered 3 weeks after the last tablet (Advised by WHO).

5. Doxycycline may not be administered during pregnancy and breast-feeding. According to convincing Scandinavian information there is however no reason to worry should an accidental intake of Doxycycline occur during conception or in the early period of pregnancy and there is no reason to consider abortion.

6. The combination Nivaquine® - Paludrine® was completely safe during pregnancy and breast-feeding, but has become mostly ineffective. Paludrine is no longer available in Belgium since the beginning of 2010. Prevention with chloroquine alone can be used when necessary; in regions where *P. falciparum* still occurs (zone A = WHO zone II). For theoretic reasons, Malarone® and Lariam® are not advised during breast-feeding, but may be administered to the child with a weight of 5 kg. The medication, however, will not be sufficiently absorbed by the mother’s milk to protect the baby! Doxycycline can not be administered during pregnancy.

6. As no single method is 100% effective in preventing malaria infections, it is very important for individuals who stay in the tropics for long periods to have adequate information about the treatment of “breakthrough malaria”:

- Quinine alone: 500 mg 3 times per day for 7 days (for 10 days for visits to the Far East) (may be administered during the entire pregnancy)
- Or Quinine during 5 days, combined with clindamycine (3 x 600 mg per day for 5 days; may be administered during the entire pregnancy) or with Fansidar[®] (it has not been available in Belgium since the end of 1997, but is still available in Africa; may only be administered during the second trimester of pregnancy and the first half of the third trimester). Quinine occasionally causes contractions of the uterus, but it can only bring on labour at the end of pregnancy. On the other hand, high body temperature due to malaria also increases the risk of miscarriage or premature birth.
- Lariam[®] may be taken from the fourth month but could implicate side-effects, when used as treatment.
- Doxycycline, Malarone[®], Riamet[®] and Halfan[®] are normally not used.
- Any of these antimalaria agents, if indicated, may also be used during lactation.

3 Miscellaneous

- A pregnant woman should enquire before departure to what extent the travel insurance covers medical problems due to pregnancy.
- In order to reduce the risk of deep vein thrombosis during long journeys by air: drink large amounts of fluids, wear loose clothing, comfortable shoes or slippers, regularly stretch the legs and take frequent walks around in the aircraft. One should go to the toilet regularly when drinking abundantly. One should be careful when walking around in the aircraft, the risk of falling is greater because it is difficult to keep one's balance in an airplane (changed centre of gravity and relatively decreased co-ordination in case of rapid change of position).
- The travel pharmacy should to be discussed with the doctor.
 - Paracetamol may be taken as a painkiller and antipyretic.
 - Treatment for **vaginal fungous infection or cystitis** may also be taken.
 - Disinfection of drinking-water: the use of chlorine drops is no problem, but prolonged use (more than 3 weeks) of iodine drops is not advised.
 - Traveller's diarrhoea: prevention is vital but the use of preventive medication should be avoided. As treatment, rehydration is essential (oral salt-sugar solution – type ORS) is an essential part of the travel medicine kit). Loperamide (like Imodium[®]) in moderate dose is regarded as relatively safe, but should only be used for excessive watery diarrhoea. Loperamide is contraindicated when breast-feeding, even when the fraction that can be found in the mother's milk is small. Azithromycin (Zitromax 500 mg per day for 1-3 days) can be used by pregnant and breast-feeding women for severe traveller's diarrhoea. Quinolones are contraindicated. Aminopenicillins and erythromycin are safe in an emergency during pregnancy. Bactrim[®] and Eusaprim[®] may be used in the second trimester of pregnancy, although their efficacy is often insufficient.
 - Amoebic dysentery is a potentially life-threatening disease and can be treated with metronidazole (to be avoided in the first three months of pregnancy) and paromomycin.
- Journeys to mountainous regions are probably safe up to 2500m. If going to higher altitudes (max. 4000 m), physical exertion should in any case be avoided and an adequate fluid intake is absolutely necessary. Diamox will not be given to pregnant or breast-feeding women, but is not absolutely forbidden.
- When residing in the tropics, it is strongly recommended to plan the delivery in a place where “safe blood transfusion”-practices are ongoing, in case complications should occur.