

# Pregnant Travelers

## Traveler Summary

### Introduction

Special risks exist for pregnant women who travel internationally. Some infections are more severe in pregnancy (e.g., malaria, hepatitis E, or Zika virus). The immunizations and medicines available to prevent or treat infections (e.g., antimalarials and antidiarrheal medicines) may also be harmful to the developing fetus. Additionally, pregnant women are at increased risk of blood clot formation that may severely affect mother and fetus.

### Pretravel Planning

Before departure, the pregnant traveler should have a clear plan of action in the event of complications during travel or at her destination, including how to handle emergencies at any time of the day or night, who to contact, and how she will be transported to a preferred physician or hospital. She should have the names of specific preferred hospitals and physicians who speak her language.

### Insurance

Many insurance plans do not cover pregnant women who travel overseas or have gestation cutoff dates for travel, beyond which they will not cover delivery out of the area. Additionally, some airlines may have specific requirements or restrictions, especially later in pregnancy (see Air Travel below).

### What to Bring

Pregnant travelers should pack a medical kit with items that address pregnancy issues, including prenatal vitamins, antiemetic medicines, acetaminophen, hemorrhoid cream, medicine for yeast vaginitis, and compression stockings. Antimalarials and self-treatment medicines for travelers' diarrhea (TD) should be included when indicated, as well as a blood pressure monitor and urine dipsticks for use in the third trimester (see also *Packing Personal Medications and Supplies*).

### When to Travel

The safest time to travel is during the second trimester (weeks 14-28) because pregnancy-related emergencies occur less frequently during this period.

Even with a healthy traveler and normal pregnancy, no guarantee exists that no harm will occur to the fetus during the trip, whether related to travel or not. The pregnant traveler should consider postponing travel during pregnancy if she feels that she might blame an adverse event that might occur on her decision to travel.

### When to Avoid Travel

Travel should be avoided by pregnant women with complicated medical needs or when crucial immunizations or antimalarials cannot be taken. Many of the factors that cause a pregnancy to be classified as higher risk (e.g., history of miscarriage, previous toxemia, multiple gestation) make travel potentially inadvisable. Discuss the risks of travel with an obstetrician if such conditions are present.

### Immunizations

Not all vaccines are safe to receive during pregnancy. In general, inactivated vaccines or toxoids may be given during pregnancy, whereas live vaccines should be avoided. If vaccines are indicated, it is preferable to receive vaccines during the last 2 trimesters of pregnancy. If a vaccine for a high-risk infection cannot be given, trip postponement or consideration of an alternate destination may be necessary.

When travel planning is sought before conception, consideration can be given to immunizations that may be recommended or required for possible travel but which may be contraindicated during pregnancy. Women can receive live vaccines or certain inactivated vaccines before conception if indicated for the planned itinerary. Attempts to conceive should be avoided for at

least 1 month following immunization with live vaccines. No minimum waiting time is needed before conception following immunization with inactivated vaccines.

Yellow fever vaccine is a live vaccine and should be used during pregnancy only if travel to an area with risk of yellow fever is *unavoidable* and a high risk exists of contracting the disease. If possible, a pregnant woman should avoid travel to an area with risk of yellow fever transmission or postpone travel until 9 months after delivery, when both mother and infant can be immunized. If a pregnant woman receives yellow fever vaccine as indicated, a blood test is necessary to determine whether the vaccine was effective. If international travel requirements (rather than actual risk of yellow fever) are the only reason to vaccinate a pregnant woman, a waiver letter should be provided instead.

## Malaria Prevention

Pregnant women should not travel to a malarious area unless travel is *absolutely necessary* and *unavoidable* because malaria can cause more severe problems in pregnant women than in persons who are not pregnant. Malaria increases the risk of maternal death and premature birth, low birth weight, miscarriage, and stillbirth.

Pregnant women who do travel should pay meticulous attention to all preventive measures (see *Insect Precautions* and *Malaria*).

## Antimalarial Drugs

Both mefloquine and chloroquine (only useful in a few destinations) are safe in pregnancy. Other antimalarials such as atovaquone-proguanil (Malarone or generic) and doxycycline should not be used during pregnancy.

Travelers who plan to become pregnant after taking doxycycline should wait 1 week following the final doxycycline dose (4 weeks needed after travel) or 1 week following the final atovaquone-proguanil combination dose (1 week needed after travel).

## Insect Repellents

Repellents containing both DEET and picaridin have been shown to be effective against mosquitoes under field conditions in tropical countries and are safe during pregnancy. Picaridin is equally protective and has the same duration of protection as DEET when used at the same concentration. Products with less than 20% picaridin or DEET have a relatively short duration of protection and require more frequent application. Controlled-release formulations appear to last longer and require less frequent reapplication. Because of the danger of malaria or Zika virus during pregnancy, pregnant travelers should use concentrations of around 20%.

Clothing should cover as much skin as practicable, leaving only extremities, head, and neck exposed. DEET and picaridin can be used by pregnant and breastfeeding women but should be used sparingly over remaining exposed areas and washed off once indoors and when insect precautions are no longer necessary. Do not apply insect repellents to the nipple area to prevent ingestion by breastfeeding children.

The insecticide permethrin provides additional protection against mosquitoes. Permethrin-treated clothing and bed nets appear to be reasonably safe for pregnant women based on animal studies. See also *Insect Precautions*.

## Zika Virus

Zika virus infection is of significant concern during pregnancy because of its association with congenital microcephaly (a rare condition in which an infant's head is significantly smaller than normal). Pregnant women should discuss any concerns about Zika virus with their health care provider and consult the Zika handout. Women trying to become pregnant should consider postponing travel to certain Zika-affected areas. A health care provider can provide specific risk information and waiting periods for conception for each individual destination country.

## Food and Water Precautions: Travelers' Diarrhea (TD)

Food and water precautions are particularly important for the pregnant traveler (see *Food and Beverage Precautions*).

Severe TD can lead to premature labor and shock. If TD occurs, the pregnant traveler should stay hydrated and use oral rehydration solutions if necessary; follow the same guidelines given to nonpregnant travelers (see *Travelers' Diarrhea*). The antibiotic azithromycin is the treatment of choice for TD in pregnancy (500 mg orally for 3 days). Quinolones (e.g., levofloxacin, ciprofloxacin, ofloxacin) are not considered safe in pregnancy.

Loperamide is thought to be safe during pregnancy but should be used sparingly. Bismuth subsalicylate (Pepto-Bismol) should not be used during pregnancy.

## Air Travel

In general, pregnant women can safely fly up to the end of the thirty-sixth week of pregnancy. Air travel during the final month of pregnancy is generally prohibited by airlines; women who plan to fly during this time should contact the airlines to determine if any restrictions exist. Women planning to fly during the last 3 months of pregnancy should obtain a letter from their obstetrician indicating their due date to present at the check-in counter.

Changes in cabin air pressure can cause a decrease in oxygen pressure. Pregnant women who may be affected by decreased oxygen availability may require supplemental oxygen.

Entrapped gas tends to expand at higher altitudes, causing bloating and gas. To prevent gas formation, reduce consumption of carbonated drinks and gas-producing foods, especially during long flights.

Long flights are also associated with a certain degree of immobility and venous stasis (blood pooling in the leg veins).

Pregnant women are predisposed to blood clots even if they stay home. To help prevent blood clots during flights, pregnant travelers should:

- | Choose an aisle seat.
- | Exercise the legs by walking, stretching, and doing isometric exercises.
- | Stay hydrated by drinking plenty of water or juice.
- | Wear compression stockings.

Pregnant travelers should wear seat belts low around the pelvis during the flight.

## Other Modes of Travel

Many cruise lines will not carry women who are 24 or more weeks pregnant at the time of the cruise. Pregnant travelers should take care when walking on deck to avoid falling, due to imbalance associated with pregnancy and the ship's motion. Motion sickness can be prevented or treated with meclizine or dimenhydrinate.

Pregnant women who travel by automobile should not sit for prolonged periods. Make frequent stops to walk and stretch. Wear 3-point seat restraints when riding in automobiles, with the seat belt worn low over the pelvis. This may not be possible in developing countries where seat belts are often unavailable.

## Other Precautions

Certain activities (such as downhill skiing, scuba diving, waterskiing, contact sports) should be avoided during pregnancy because the change in balance that occurs during pregnancy can increase the risk of falls or other injuries. Changes in pressure when diving may put the fetus at risk for an air embolism.

Women with complicated pregnancies should avoid travel to high altitude. Short-term exposure to altitudes up to 2,500 m (8202 ft) in women with uncomplicated pregnancies appears to pose minimal risk, but it is recommended that pregnant women not stay at sleeping altitudes above 3,660 m (12,000 ft), partly due to the remote nature of higher altitudes that precludes access to medical care. It is also advisable to obtain at least 1 ultrasound to confirm a healthy intrauterine pregnancy. Acetazolamide to prevent altitude sickness should be avoided during pregnancy. Cosmic radiation during air travel is usually is not a threat to pregnant women.

## Seeking Medical Attention

Symptoms requiring immediate medical attention include bleeding or passing of clots or tissue, contractions, abdominal pain or cramps, ruptured membranes, headaches, and visual problems.

Pregnant women are at an increased risk for venous blood clots. Pregnant women who experience leg pain, leg swelling, chest pain, or shortness of breath during or immediately after a flight or within 4 weeks of air travel should seek medical attention immediately.

## Breastfeeding and Travel

Women who are breastfeeding can receive all vaccines, with the exception of yellow fever vaccine. A woman who is breastfeeding her child should maintain a regular schedule while traveling (as much as possible), avoid disruptions to sleep and meals, and drink plenty of fluids (avoiding caffeine and alcohol). Safe food and water precautions should be observed (see *Food and Beverage Precautions*). Mefloquine and chloroquine are considered safe for malaria prevention for women who are breastfeeding. Atovaquone-proguanil (Malarone) can be taken if the infant weighs more than 5 kg (11 lb). Malaria drugs taken by the mother will not protect the infant against malaria (see *Children and Travel*). The traveling infant should be immunized according to the recommended schedule and risk at destination.

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