

Special Vaccines

Information for women about vaccines needed for travel or security threats during pregnancy or breastfeeding

The information provided below is for readers based in the United States of America. Readers outside of the United States of America should seek the information from local sources.

Description: What are vaccines needed for travel and security in pregnancy?

Along with the routine vaccinations (such as measles-mumps-rubella, polio, chickenpox, tetanus-diphtheria-pertussis, influenza) that you need, either completed during childhood, as a booster during pregnancy, or seasonally and thus during pregnancy, there are special vaccines, given to prevent diseases that do not occur in the region where you live. These include travel vaccinations and, if ever needed, vaccines to combat effects of bioterrorism.

What are special vaccinations during pregnancy given to prevent?

Travel vaccinations are given to train your immune system to defend against particular diseases that occur in certain climates or in developing countries. The recommendation varies based on your destination, but three commonly given travel vaccines are those for preventing yellow fever, Japanese encephalitis, and typhoid fever. All of these conditions are very serious diseases that can be fatal. Another disease for which you may be vaccinated either in preparation for travel in a high risk area, or following possible exposure in an area that could be far away, or right in your neighborhood, is rabies, which is almost certainly fatal if not treated immediately. Related to bioterrorism, there is a vaccine that can be given to prevent disease and death resulting from inhalation of spores from a bacterial species called *Bacillus anthracis* ("anthrax"). Such spores can be in weaponized form with exposure possible in the event that an attack were deemed possible, in which case the population would be vaccinated. One also could receive occupational exposure to anthrax spores, namely if an individual were working with the spores in a research setting.

How do special vaccines work?

As with all vaccines, special vaccines work by teaching your immune system to recognize either molecules that are present on the outside of organisms that cause disease or molecules that disease-causing organisms make that act as toxins. There are many different types of vaccines. Some vaccines used against viruses are live agents that look similar on the outside to disease-causing agents, and grow and multiply within the body, but don't cause the disease, because they are changed from the disease-causing agent. There is some concern about giving live vaccines to pregnant women and to women who are about to become pregnant, but the level of concern varies from vaccine to vaccine, and there are exceptions, cases in which a live vaccine is recommended to pregnant women. A good example is the yellow fever vaccine, discussed below.

Many vaccines are not alive at all; of these, there are several different categories, which vary mostly according to the process by which the vaccine was created. In some cases, non-living vaccines are created by attaching ("conjugating") certain chemicals to proteins that are present on the outside of the disease-causing agent. Other non-living vaccines are called *recombinant*, which means they are made by transferring a gene, or genes, for such proteins into a different organism in order to mass-produce the protein for use in the vaccine. Non-living vaccines also can be created by chemically modifying a toxin, or other agent that causes the disease. Generally, non-living vaccines are considered very safe during pregnancy and lactation.

If I receive a vaccine during pregnancy, can it harm my baby?

Potential for harm of a treatment in pregnancy is always a matter of benefits versus risks. There is a theoretical risk of harm attached to live vaccines, so usually live vaccines are not recommended during pregnancy. At the same time, the concern for harm is very low in the event that a woman has received a live vaccine before learning that she was pregnant. One important exception to the no-live-vaccines during pregnancy rule involves the yellow fever vaccine. It is a very important example of a live vaccine that *should be* given during pregnancy, if needed in a pregnant woman. The reason a pregnant woman would need it is that she will be traveling in an area where yellow fever is present, due to the presence of the *Aedes aegypti* mosquito. Present in certain subtropical and tropical areas, this mosquito carries the yellow fever virus, and also the dengue fever virus, the Zika virus, and the chikungunya virus, all of which cause variations of a flu-like disease. In the case of yellow fever, a severe case can result in failure of multiple organs, bleeding, and death.

To avoid getting such a condition from an *A. aegypti* bite, the US Center for Disease Control and Prevention (CDC) recommends vaccination against yellow fever in pregnant women who must travel, when the risk of infection is high, due to the location, season, and the planned activities.

Japanese encephalitis also is spread through a virus delivered by a mosquito. For those who develop disease, 20–30 percent die and in 30–50 percent of those who survive there can be long-term damage in the brain, leading to cognitive disability. However, the condition is preventable with a vaccine, and it's not a live vaccine, so it is warranted in pregnancy for anybody traveling for long periods to areas where the disease is found – in this case certain parts of Asia.

Another travel disease, one that is a risk if you travel in the developing world, is typhoid fever. It can be fatal and is caused by a bacterial species called *Salmonella typhi*. In this case, there is both a non-living vaccine that is given by injection, as well as a live vaccine that is taken orally. The effectiveness and safety of these typhoid fever vaccines have not been studied enough for the CDC to make any recommendation.

When it comes to the anthrax vaccine, the vaccine is not living, but how it works in pregnant women is still being studied. In the military, personnel are generally vaccinated against anthrax if they are considered to be at high risk based on occupation, but also if they are considered to be at low risk health-wise. An exception is during pregnancy, which counts as an exemption against anthrax vaccination for those who are not in high risk occupations. Typically, this means you are not working in an anthrax lab, or deployed in a military setting in which an anthrax attack is possible. Should a woman who has not been vaccinated be exposed to anthrax spores during pregnancy, however, at this point vaccination would be part of the treatment, along with antibiotic medications.

When it comes to rabies, also a potentially deadly disease, there are two vaccines available in the US. Both are non-living and can be given to pregnant women who are considered to be at high risk, meaning that they have been, or will be exposed to rabid animals. There is also an emergency treatment called rabies immunoglobulin (Ig). After a bite, or other rabies exposure, the treatment is Ig plus a vaccine, and this works the same way in pregnant women as with anyone else.

If I receive a special vaccine and become pregnant, what should I do?

Continue with your pregnancy as normal. There is a theoretical risk of harm attached to live vaccines, so usually live vaccines are not recommended during pregnancy. At the same time, the concern for harm is very low in the event that a woman has received a live vaccine before learning that she was pregnant.

If I am given a vaccine, can I safely breastfeed my baby?

Yes. All of the vaccines that are recommended during pregnancy are also safe if given while you are breastfeeding.

If I am given a vaccine, will it be more difficult to get pregnant?

Vaccines should not affect your fertility negatively.

If I am given a special vaccine, what should I know?

You should know that potential for harm of a treatment in pregnancy is always a matter of benefits versus risks. If a vaccine is recommended during pregnancy, or recommended to you because of your travel plans, or your work, there is a very good reason for it.

If I am taking any vaccine, what should I know?

You may find Pregistry's expert report about vaccines during pregnancy [here](#), reports about a variety of vaccines [here](#), and reports about the various medications used for infections [here](#). Pregistry also offers blog posts about vaccines [here](#). Additional information can also be found in the resources at the end of this report.

Resources for vaccines in pregnancy:

For more information about vaccination during and after pregnancy, contact <http://www.womenshealth.gov/> (800-994-9662 [TDD: 888-220-5446]) or check the following links:

- US Centers for Disease Control and Prevention: [Pregnancy and Vaccination](#)
- US Centers for Disease Control and Prevention: [Maternal Vaccines: Part of a Healthy Pregnancy](#)

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General information

It is very common for women to worry about having a miscarriage or giving birth to a child with a birth defect while they are pregnant. Many decisions that women make about their health during pregnancy are made with these concerns in mind.

For many women these concerns are very real. As many as 1 in 5 pregnancies end in a miscarriage, and 1 in 33 babies are born with a birth defect. These rates are considered the background population risk, which means they do not take into consideration anything about the health of the mom, the medications she is taking, or the family history of the mom or the baby's dad. A number of different things can increase these risks, including taking certain medications during pregnancy.

It is known that most medications, including over-the-counter medications, taken during pregnancy do get passed on to the baby. Fortunately, most medicines are not harmful to the baby and can be safely taken during pregnancy. But there are some that are known to be harmful to a baby's normal development and growth, especially when they are taken during certain times of the pregnancy. Because of this, it is important to talk with your doctor or midwife about any medications you are taking, ideally before you even try to get pregnant.

If a doctor other than the one caring for your pregnancy recommends that you start a new medicine while you are pregnant, it is important that you let them know you are pregnant.

If you do need to take a new medication while pregnant, it is important to discuss the possible risks the medicine may pose on your pregnancy with your doctor or midwife. They can help you understand the benefits and the risks of taking the medicine.

Ultimately, the decision to start, stop, or change medications during pregnancy is up to you to make, along with input from your doctor or midwife. If you do take medications during pregnancy, be sure to keep track of all the medications you are taking.