



MotherToBaby

Medications & More During Pregnancy & Breastfeeding
Ask The Experts

Fact Sheet

by the **Organization of Teratology Information Specialists (OTIS)**
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Vaccines

In every pregnancy, a woman starts out with a 3-5% chance of having a baby with a birth defect. This is called her background risk. This sheet talks about whether exposure to vaccines may increase the risk for birth defects over that background risk. This information should not take the place of medical care and advice from your health care provider.

What are vaccines?

Vaccines are given to help protect you from diseases. They are made from killed or weakened bacteria or virus. Vaccines cause your body's immune system to make antibodies. Once these antibodies are made, your body has an easier job of stopping you from getting the disease if you are exposed to it in the future.

What is the difference between live and inactivated vaccines?

A "live" vaccine is made from viruses or bacteria that have been weakened. This causes the body to make protective antibodies but does not usually cause the infection. Live vaccines generally provide long-lasting protection with a single dose. Given the slight possibility that a live vaccine might cause the disease itself, live vaccines are not routinely given to pregnant women.

An "inactivated" vaccine is made from viruses or bacteria that have been killed. An inactivated vaccine cannot cause the disease that it is given to prevent. Inactivated vaccines may require multiple doses and periodic boosters to provide the best protection.

Which vaccines can be given safely in pregnancy? Which vaccines should not be given in pregnancy?

Inactivated vaccines have not been shown to cause birth defects or pregnancy complications. Live vaccines are usually not given in pregnancy because of the slight possibility of causing the disease in the mother or baby. However, when the likelihood of being exposed to a disease is high or when infection would pose a high risk to the mother or baby, vaccination with a live vaccine is discussed.

If there is a rare disease outbreak or you are traveling outside of North America and require a specific vaccine, please contact MotherToBaby for more information. You can also refer to recommendations from the Centers for Disease Control and Prevention (CDC): <https://www.cdc.gov/vaccines/pregnancy/hcp/guidelines.html>.

What if I received a live vaccine in the first trimester before I knew I was pregnant? Will this harm my baby?

Probably not. Contact MotherToBaby to speak with one of our specialists about your specific vaccine.

Are there any vaccines that are recommended in pregnancy?

Yes. It is recommended that pregnant women receive the seasonal inactivated flu vaccine (flu shot). Pregnant women are at an increased risk of developing serious complications from the flu. Getting vaccinated is the best way to protect yourself and your baby. You can get the flu vaccine anytime during your pregnancy. For more information, please see the MotherToBaby fact sheet on the Seasonal Influenza Vaccine (Flu Shot) at <https://mothertobaby.org/fact-sheets/seasonal-influenza-vaccine-flu-shot-pregnancy/pdf/>.

It is also recommended that pregnant women get the Tdap vaccine during the third trimester of pregnancy (between weeks 27-36). However, it can be given anytime during pregnancy. For more information, please see the MotherToBaby fact sheet on the Tetanus, Diphtheria and Pertussis (Tdap) Vaccine at <https://mothertobaby.org/fact-sheets/tetanus-diphtheria-pertussis-tdap-vaccine-pregnancy/pdf/>.

The need for vaccination for other diseases during pregnancy will vary and you should talk to your health care provider about the potential risks and benefits. For some diseases the benefit of vaccination outweighs any risks that

may be associated with the vaccine.

What about thimerosal in vaccines? Is it safe?

Pregnant women can safely receive vaccines containing thimerosal. Thimerosal is a preservative. It is found in some vaccines in very small amounts. Large studies have not found thimerosal to cause any harmful effects. Thimerosal-free vaccines might also be available.

Is it ok for my child to be vaccinated while I am pregnant?

Yes. Vaccines do not make the child infectious. If the pregnant woman has received the recommended vaccines during her lifetime, she is highly protected from infection from others with infection or possible infection.

Can I continue breastfeeding if I have been vaccinated?

Live and inactivated vaccines that are routinely given in the United States and Canada are not harmful during breastfeeding. Be sure to talk to your health care provider about all of your breastfeeding questions. You can also refer to recommendations from the Centers for Disease Control and Prevention (CDC):

<https://www.cdc.gov/breastfeeding/breastfeeding-special-circumstances/vaccinations-medications-drugs/vaccinations.html>.

Should men delay fathering a child after they have been vaccinated?

No. There is no evidence to suggest that inactivated or live vaccines affect the sperm or are transmitted to the developing baby through the semen following vaccination in men. In general, exposures that fathers have are unlikely to increase risks to a pregnancy. For more information, please see the MotherToBaby fact sheet on Paternal Exposures at <https://mothertobaby.org/fact-sheets/paternal-exposures-pregnancy/pdf/>.

Selected References:

- Keller-Stanislawski B, et al. 2014. Safety of immunization during pregnancy: a review of the evidence of selected inactivated and live attenuated vaccines. *Vaccine*. 32(52):7057-64.
- The Centers for Disease Control and Prevention (CDC). 2017. Guidelines for vaccinating pregnant women. Available at: <https://www.cdc.gov/vaccines/pregnancy/hcp/guidelines.html>
- The Centers for Disease Control and Prevention (CDC). 2016. Maternal Vaccines: Part of a Healthy Pregnancy. Available at: <https://www.cdc.gov/vaccines/pregnancy/pregnant-women/index.html>
- The Centers for Disease Control and Prevention (CDC). 2018. Vaccinations. Breastfeeding guidelines & recommendations. Available at: <https://www.cdc.gov/breastfeeding/breastfeeding-special-circumstances/vaccinations-medications-drugs/vaccinations.html>
- The American College of Obstetricians and Gynecologists (ACOG). 2017. Update on immunization and pregnancy: tetanus, diphtheria, and pertussis vaccination. Committee Opinion no. 718.
- The American College of Obstetricians and Gynecologists (ACOG). 2018. Influenza vaccination during pregnancy. Committee Opinion no. 732.

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