Immunization Education: Everything You Need to Know About Vaccines Before and During Pregnancy

Melissa, pregnant for the first time, live chatted with MotherToBaby through our website: “Hi, I’m 29 weeks pregnant and wondering about vaccines. I have seen so many different things online and I am worried about getting really sick while I’m pregnant. Can you help?”

Melissa is not alone. Many people contact MotherToBaby to find the most up-to-date information about vaccines during pregnancy. Protecting yourself from circulating viruses can also help protect your developing baby. Infections such as influenza, pertussis, rubella, chicken pox, and COVID-19 can cause serious problems in both a pregnant woman and her developing baby. Let’s navigate through the current recommendations.

Plan to Receive Some Vaccines Prior to Pregnancy

You may have heard there are some vaccines, like measles, mumps, and rubella (MMR) and chickenpox (varicella), you should not receive during pregnancy. These “live” vaccines are avoided as they are made from viruses or bacteria that have been weakened, but not killed. Due to the small chance that a live vaccine might cause the disease itself, live vaccines are not routinely given to pregnant women.

So how can you protect yourself and your developing baby from viruses like measles, mumps, rubella (MMR) and chicken pox if it is not recommended (also known as contraindicated) to receive the vaccines during pregnancy? The Centers for Disease Control and Prevention (CDC) consider people who have received one or more doses of MMR vaccine during their lifetime to be protected for life. Adults who never got the MMR vaccine should get at least 1 dose (or 2 doses for some people at higher risk of infection) before pregnancy. Those who have never had chickenpox or received a chickenpox vaccine should get 2 doses of varicella vaccine, at least 4 weeks apart, before pregnancy. If you aren’t sure if you ever got vaccinated for MMR or chickenpox or unsure if you had chickenpox in the past, you can safely receive the necessary live vaccines before that positive pregnancy test! Out of an abundance of caution (small possibility of that infection) it is advised to wait at least one month before becoming pregnant after these vaccines. This is just one reason why it is beneficial to have a pre-pregnancy health checkup and to discuss any future conception plans with your provider!

Keep Up with Recommended Vaccines During Pregnancy and Encourage Others to Do So, Too

So, which vaccines should you receive during pregnancy?

CDC recommends all women who are pregnant receive the flu shot and updated COVID-19 vaccine each year, a Tdap

(tetanus diphtheria pertussis) vaccine in each pregnancy, and an RSV (respiratory syncytial virus) vaccine (if you have not received one in a previous pregnancy).These vaccines are not live vaccines and have not been associated with an increased chance for birth defects or pregnancy complications. (A nasal spray vaccine is also available against influenza, but it is a live vaccine and not recommended in pregnancy).

Influenza vaccine (flu shot)

The flu shot usually becomes available in September and is offered throughout flu season. CDC recommends **getting a flu shot by the end of October** despite flu seasons varying in their timing each year. This timing helps protect a pregnant woman before flu activity begins to increase. Protection begins about two weeks after you get the flu shot and lasts at least six to eight months. It is necessary to receive the seasonal flu shot each year to be protected in the current flu season. Getting vaccinated during your pregnancy may also help protect your baby from getting sick during the first 6 months of life! This is especially important because infants less than 6 months of age cannot receive the flu vaccine.

COVID-19 vaccine

It is well known that pregnant women are more likely to get very sick from COVID-19 compared to those who are not pregnant. This is why is so important to receive an updated COVID-19 vaccine every year, any time before or during pregnancy, for the best protection against severe illness. CDC recommends staying up-to-date with COVID-19 vaccines every year: https://www.cdc.gov/covid/vaccines/stay-up-to-date.html.

Tdap vaccine

“I just had a Tdap vaccine a couple years ago – so I don’t need another one, right?” Melissa asked a very common question we receive regarding the Tdap vaccine during pregnancy. Although this vaccine is recommended for adults every 10 years, for women who are pregnant, receiving the shot in the 3rd trimester (specifically 27-36 weeks gestation) can help the baby get as many of the mother’s antibodies as possible. After delivery, these antibodies provide some protection against pertussis, also known as whooping cough (a very contagious respiratory infection), until the baby can receive his/her own dTAP vaccine (starting at 2 months of age). Additionally, if everyone who lives with you and any caregivers get the vaccine, it can lower the chance for the baby to be exposed to pertussis.

RSV vaccine

The RSV vaccine protects both pregnant women and their babies from RSV, a virus that can cause serious breathing problems in babies. CDC recommends a single dose of the Abrysvo® RSV vaccine between 32 and 36 weeks of pregnancy, during the RSV season (September-January). As with the flu and Tdap vaccines, this maternal vaccine helps the pregnant woman create antibodies that can pass to the baby, giving the baby some protection from an RSV infection after birth. By getting this vaccine, pregnant women can help keep their newborns safe from serious health complications. Melissa, being 29 weeks, can now plan an upcoming RSV vaccine appointment!

Pregnant women who receive vaccines can also share their experiences with maternal health researchers, like MotherToBaby. Our studies are published in medical journals and product labels, and can help others like you when navigating vaccine decisions in pregnancy.

There are no Vaccines to Prevent Some Infections

Many people are packing their bags for a getaway during the summer months. If you are considering an upcoming vacation or babymoon, it's important to protect yourself from viruses and infections with the appropriate vaccines for that area. Where are you headed? Check with your healthcare provider regarding any specific travel vaccines you might need. CDC recommends discussing any travel plans with your provider at least 4-6 weeks before your trip. Contact MotherToBaby to check the information on any vaccines your healthcare provider recommends

Viruses like Zika, malaria, and Oropouche can be spread by mosquitos and biting flies (midges). These infections can increase serious risks in pregnancy. Since there are no vaccines to prevent these infections, the safest approach during pregnancy would be to not travel to areas with any possible level of risk. Should you choose to travel, it's important to protect yourself using the recommended insect repellents among other ways to help prevent bites while traveling.

Although Melissa didn't have any trips planned for the rest of her pregnancy, she was happy to know about these other infections she wasn't even thinking about!

Other Precautions

Although masks are no longer required in most public areas, this is still a great way to reduce the risk for infections while around others! Good hand washing is also the most simple and effective way to prevent the spreading of germs to keep you healthy.

After chatting with Melissa, she decided to make her appointment for her COVID-19 and Tdap vaccines (you can get them at the same time!) and will go in ASAP when the flu vaccine for this season is available. She felt reassured knowing she had decided to give herself and her developing baby the best protection from these illnesses as possible. "Thank you for all this info! I just want to make the best choice for me and my baby – I feel so much better."

Do you have questions about vaccines during pregnancy? Call, chat, text, or email MotherToBaby!

References:

https://mothertobaby.org/fact-sheets/vaccines-pregnancy/

https://mothertobaby.org/pregnancy-studies/

https://www.cdc.gov/vaccines/by-age

https://www.cdc.gov/vaccine-safety/about/pregnancy.html

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I can't begin to describe how organized I was during the holiday season when I was pregnant with my first child. Since I was pretty far along (5 months), I wanted to make sure each gift was chosen way ahead of time, I knew how long it would take me to get the food trimmings just right and whether I should emphasize red or green in my decorating scheme. All of this had to be done before that "pregnancy brain" I had heard so much about set-in. Little did I know, the most important items on my holiday to-do list weren't sitting on store shelves or mixed in with the tinsel and mistletoe.

Years later, as a teratogen information specialist for MotherToBaby, I realized some of the best gifts for a healthy pregnancy didn't come with ribbons and bows, but from awareness and education! For example, did you know the holiday buffet table could include foods that could potentially cause harm to a developing baby? Or, if not careful, decorating could put a pregnant woman in a dangerous situation? Today I encourage pregnant women to master must-know safety tips long before putting together must-have gift lists this season. Here are a few of my tips:

Tip 1. Importance of Getting Vaccinated

It is recommended that pregnant women have a flu vaccine in every pregnancy and be current on Tdap vaccine and Covid 19 vaccines. Women who are 32-36 weeks pregnant are currently eligible for the RSV vaccine https://mothertobaby.org/fact-sheets/rsv-vaccine/. This vaccine can pass protection to the developing baby, helping lower the chance of severe RSV infection once the baby is born.

Not only should a pregnant woman be up-to-date on vaccines, but **anyone** older than 6 months of age who will be around a newborn should be vaccinated.

Tip 2. Choose Wisely at the Buffet Table

Drinks like eggnog and spiced cider may contain alcohol https://mothertobaby.org/fact-sheets/alcohol-pregnancy. If you're not sure what's s in a beverage, ask the host. Also, avoid soft cheeses made from unpasteurized milk, as they may contain bacteria that can cause a serious illness for a developing baby called Listeria https://mothertobaby.org/fact-sheets/listeriosis-pregnancy, as well as increased risk of miscarriage, uterine infection,

or premature labor. Meats like cocktail franks and pâté can also contain bacteria. Meats need to be thoroughly cooked so that bacteria are killed.

Tip 3. CMV (cytomegalovirus) May Be Lurking

CMV is a common virus that often has no symptoms. If a pregnant woman gets CMV https://mothertobaby.org/fact-sheets/cytomegalovirus-cmv-pregnancy, the baby could be at increased risk for hearing loss, developmental delays, or birth defects. To prevent infection, pregnant women should wash hands after changing diapers, feeding children, wiping children's noses, or handling children's toys. Also, avoid sharing food, eating utensils, toothbrushes, and pacifiers with children.

Tip 4. Holiday Decoration Safety

Some artificial trees, strings of lights, and ornaments may contain lead. Use gloves or wash hands after handling decorations to reduce exposure. Because of changes in their center of gravity, pregnant women should stay off ladders and let others decorate the hard-to-reach places.

Tip 5. Manage Anxiety and Depression

Having a 'happy holiday' can mean lots of stress, especially when pregnant. Anxiety https://mothertobaby.org/fact-sheets/anxiety-fact to have that ***perfect*** holiday is real. Depression https://mothertobaby.org/fact-sheets/depression-pregnancy can be triggered this time of year as well. Don't hesitate to ask for help if you are feeling overwhelmed with all the gift giving and holiday activities. Stay in-touch with your healthcare providers because…. help is available!

I hope these tips are helpful. While my son did end up turning out to be just fine, I think I would have caused myself less stress and worry had I known these tips during my pregnancy. If you have questions, don't hesitate to reach out to MotherToBaby by phone, text, chat or email.

On behalf of all of us at MotherToBaby, here's to wishing you a happy and healthy holiday!

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It's that time of year again, when the holidays invite family gatherings, and colder, shorter days make us long for sunny destinations. Yes, the winter travel season is upon us! Remember winters past when COVID-19 wasn't around and we'd never heard of Zika? When we didn't give much thought to health concerns related to hopping on a plane or going to busy holiday venues? Things are different now. If you're pregnant, you might pause before booking airline tickets or RSVPing "yes" to that extended family reunion. Take a moment to consider the possible risks associated with your plans, and how you might reduce them (by taking precautions) or eliminate them (by making alternate plans instead). Here are a few things to think about:

COVID-19:

Try as we might, we can't escape it or wish it away. We are, in fact, still in the middle of a pandemic, with new variants appearing and cases still rising and falling unpredictably in most places. Traveling on public transportation (such as airplanes, ships, trains, subways, taxis, and ride shares) can make getting and spreading COVID-19 more likely. So can being in crowded indoor spaces, especially if not everyone in those spaces is fully vaccinated against COVID-19 and/or wearing a mask. Having COVID-19 in pregnancy can increase pregnancy risks such as stillbirth and preterm delivery. So, how can you eliminate or reduce your chance of exposure to the virus?

- **Avoid public transportation.** If you must travel, using your own vehicle with members of your own household is the safest bet. Using drive-thrus or packing your own food to stop and eat along the way is safer than eating in crowded restaurants full of other holiday travelers.

- If you must travel on a plane or use other public transportation, **wear a well-fitting mask** the whole time (this is required), **stay at least 6 feet away** from other travelers when possible, and **wash your hands**/use an alcohol-based hand sanitizer frequently. Most importantly, make sure you're **fully vaccinated** before you travel, including getting a booster dose when you're eligible.

- Did I mention making sure you're **FULLY VACCINATED** before travel? It's the single best way to reduce the chance of getting very sick if you're exposed to the virus that causes COVID-19. Pregnancy and being very sick don't go well together, so this one is really, really important, whether you're traveling or not. MotherToBaby has helpful resources on the COVID-19 vaccines and booster shot, and you can contact us to talk through any questions or concerns you may have about getting the vaccine.

- Even if you're fully vaccinated, you might still consider **wearing a mask indoors** during holiday gatherings (and elsewhere), especially if you're getting together with people from different households coming from different places. If everyone else at the gathering also wears a mask indoors, even better.

- Find more tips and information about safer holiday celebrations and travel in the time of COVID at this link: https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/holidays/celebrations.html.

Influenza (the Flu):

Flu season carries its own risks for people who are pregnant. Like COVID-19, having the flu during pregnancy increases the chance of being very sick compared to people who aren't pregnant. Many of the same precautions that apply to COVID-19 apply to the flu as well:

- **Get the flu shot.** Like the COVID-19 vaccine, the flu shot can be given at any time during pregnancy, and can even be given at the same time as a COVID vaccine or booster. The sooner you're vaccinated, the sooner you and your pregnancy will have good protection against becoming very sick from the flu. And (bonus!) getting vaccinated in pregnancy may pass some protective antibodies to your developing baby.

- **Avoiding public transportation and crowded indoor spaces** will also reduce your chance of exposure to the flu virus. **Washing your hands frequently**/using an alcohol-based hand sanitizer is also an excellent flu prevention technique.

Zika:

Yes, Zika is still around. There are no known "outbreaks" of Zika anywhere in the world at this time, but there is ongoing, low-level, sporadic transmission in some places. Having Zika during pregnancy increases the chance of serious and lifelong effects for a developing baby. There is no vaccine against the Zika virus.

- The safest course in pregnancy (or if you're trying to conceive) is to **avoid travel** to places with a chance of exposure. Unfortunately, it's virtually impossible now to know the exact risk of being exposed to Zika in any given country, but if you must travel, you can use the CDC's Zika map to help you plan.

- If you travel,**use insect repellent** and take other precautions to help avoid mosquito bites, such as wearing long sleeves and pants. If your partner travels with you, take steps to **avoid sexual transmission of Zika**. If you're planning a pregnancy, follow the recommended wait times (2 months for women, 3 months for men) before trying to conceive.

Other infections:

If you're considering international travel, there may be other infections to consider, such as malaria and foodborne illnesses. You might also need other vaccines, so be sure to review the current vaccine recommendations for your destination. Some vaccines can be given during pregnancy, but it's a good idea to check with your healthcare provider or contact MotherToBaby to discuss the risks and benefits of specific vaccines as you're deciding about travel.

Medical concerns:

Other travel considerations include the increased chance of blood clots during travel if you're pregnant, and where you will receive medical care in case of unexpected preterm labor or another medical emergency. Before any travel, be sure to talk with your healthcare provider about any additional considerations that are specific to you and your pregnancy.

Given all these considerations, if you're pregnant you might decide this year is a good one to enjoy low-key holidays at home and save the travel for another time. However you decide to spend the season, we hope it's safe, healthy, and happy!

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"I just found out I am pregnant. I've heard that it is really important to get the flu shot this fall, but is it still OK now that I am pregnant?" The woman on the other end of the phone line sounded cautious and concerned. I told her, "I'm so glad you called to ask about this. The influenza vaccination may be even more important for pregnant women. The coronavirus pandemic has given us a lot to worry about without adding influenza infections to the mix. Let me tell you more about this…."

Influenza and Pregnancy

Once we are into influenza season (October to March), pregnant women are strongly recommended to get immunized, regardless of where they are in their pregnancy. Yet, many women delay, and in the end only about 50% of pregnant women get their flu shot.

An influenza infection itself can cause severe illness and even death in pregnant and post-partum women. It is important to remember that a healthy mother is more likely to have a healthy baby! The injectable version of the influenza immunization ("flu shot") contains an inactivated (dead) virus and is not going to make you or your baby sick. It is the most effective way to prevent influenza or have less severe symptoms if you do get the flu. Currently, the nasal-spray flu vaccination is not recommended for pregnant women because it contains live attenuated virus.

Will the vaccine harm my baby?

Some pregnant women are worried about whether immunizations will harm their baby. The scares about vaccines being associated with problems like autism have been shown not to be true. In fact, just last month a large study was published in the journal ***Pediatric***s, "Early Childhood Health Outcomes Following In-Utero Exposure to Influenza Vaccines: A Systemic Review." This study compiled results from 9 earlier studies and found no association between exposure to the flu vaccine during pregnancy and adverse outcomes in children. One of the authors was later quoted as saying, "This should be reassuring for pregnant women who may be considering the vaccination…"

Are you interested in learning more about vaccinations in pregnancy or while breastfeeding? Visit the MotherToBaby website and read all of our vaccine-related fact sheets. There is a general fact sheet on all vaccines, and then specific fact sheets on the seasonal influenza vaccine and also many others like the Tetanus, Diphtheria, and Pertussis (Tdap), Measles, Mumps, and Rubella (MMR), HPV (human papillomavirus), hepatitis A, and varicella (chicken pox) vaccinations.

References

Early Childhood Health Outcomes Following In Utero Exposure to Influenza Vaccines: A Systematic Review
Damien Y.P. Foo, Mohinder Sarna, Gavin Pereira, Hannah C. Moore, Deshayne B. Fell, Annette K. Regan, Pediatrics Aug 2020, 146 (2) e20200375; **DOI:** 10.1542/peds.2020-0375

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January is Birth Defects Prevention Month, and it’s a great time to remind ourselves that there are several things that pregnant women can do to reduce their chance of having a baby with a birth defect. Our 5 tips for preventing birth defects include:

- Book a visit with your healthcare provider before stopping or starting any medicine.
- Be sure to take 400 micrograms (mcg) of folic acid every day.
- Before you get pregnant, try to reach a healthy weight.
- Become up to date with all vaccines, including the flu shot.
- Boost your health by avoiding harmful substances during pregnancy, such as alcohol, tobacco, and other drugs.

Top 5 Tips for Preventing Birth Defects

Reviewing this list of tips reminded me of a call I answered last month as a Teratogen Information Specialist at MotherToBaby North Texas. The woman calling, Beatriz, was upset and concerned. She had just found out that she was about five weeks pregnant. As she suffers from chronic migraine headaches, Beatriz was taking Valproic Acid, a medication that has been shown to be effective in preventing migraines. Beatriz had done a little research on her own and knew that there could be an increased risk for birth defects in women taking this medication while pregnant. She went on to explain that she had been planning to become pregnant, and was trying to do everything right, including reaching a healthy body weight, getting her flu shot a couple of months ago, and taking her daily vitamin with folic acid. But… as often happens, Beatriz got pregnant earlier than she had planned. Hence her panic and many questions!

Tip #1: Talk to Your Healthcare Provider

I explained to Beatriz that I often talk with women in these types of situations. So I started by reminding Beatriz that with every pregnancy there is a small 3-5% background chance for having a baby with a birth defect. As Beatriz had learned from her own research, taking Valproic Acid in the first part of a pregnancy increases the risk for spina bifida by 1-2%. Spina bifida is a birth defect that occurs when a baby's spine and spinal cord don't form properly. Upon hearing this confirming information, Beatriz immediately stated that she would stop taking her medication to take away this possible increased risk. I responded that it is always best to talk with your healthcare provider before stopping or starting any medications during pregnancy. They know you and your pregnancy best, and can give you personalized advice, not just general information. I told Beatriz that before making any changes to her medication, she really needs to discuss with her healthcare provider the benefits of taking the medication versus the risk to staying on the medication.

Tip #2: Folic Acid

Beatriz mentioned she has been taking a daily prenatal vitamin with folic acid as she knew that she was planning to get pregnant. Folic acid is the lab-made form of the vitamin folate (vitamin B9). Folate is necessary for making and maintaining healthy cells in your body. Taking recommended amounts of folic acid has been shown to reduce the percentage of babies born with birth defects, including spina bifida, a birth defect that occurs when a baby's spine and spinal cord don't form properly. Starting at least one month before pregnancy, the recommended daily amount of folic acid is 400 micrograms (mcg), or 0.4 milligrams (mg). During pregnancy, the recommended daily amount is 600-800 mcg. Many daily and prenatal vitamins already contain the required amount of folic acid. Beatriz checked the vitamin she had been taking and saw that it did contain 800 mcg of folic acid.

Tip #3: Healthy Weight

While planning to become pregnant, Beatriz has also mentioned that she been eating a better diet and had started an exercise program. She was happy to report to me that she has lost 25 pounds over the past six months and is now at a healthy body weight. Now that Beatriz knows she is pregnant, she can continue an exercise program that is appropriate for pregnancy. I told Beatriz she might want to chat with her healthcare provider and ask any questions she may have about appropriate exercise during pregnancy, such as walking and swimming.

Tip #4: Vaccines

I asked Beatriz about vaccinations, and she said she is up-to-date on all her vaccines, including having received her flu vaccine earlier this fall. It is recommended that women who are pregnant (whether in their first, second, or third trimester) or planning to become pregnant get the seasonal flu shot given by injection. The flu shot is a dead, inactive vaccine and there is not a known increased risk for birth defects or other pregnancy problems. Beatriz also mentioned that she plans to talk with her healthcare provider about getting the pertussis vaccine (known as TDaP), as this vaccine can help protect her baby from whooping cough, a potentially serious illness for babies.

Tip #5: Harmful Substances

Beatriz also reported to me that she had already stopped drinking alcohol as she knew there is not a known safe level of alcohol use when pregnant, and she also did not use any tobacco or other drugs. These are critical steps in preparing for a healthy pregnancy, as outlined in another one of our blogs.

After reviewing all of this information with Beatriz, she stated that she would call her healthcare provider in the morning to discuss whether she should stop taking Valporic Acid and determine if there any alternative treatments for her migraines that might be safer in pregnancy. Beatriz was happy to hear that she was well prepared for her pregnancy, having already successfully completed 4 of the 5 recommended tips. Even though Beatriz became pregnant a few months earlier than she had wanted to, she was now excited and thrilled to be pregnant.

So what's the takeaway from Beatriz's story? There are things you can do to prepare yourself for a healthy pregnancy and to decrease the chance of having a baby with a birth defect. So if you are pregnant or planning to become pregnant, do yourself and your baby a favor and review the 5 tips. And as always, if you have any questions about an exposure during pregnancy – such as a medication, supplement, vaccine, or recreational substance – our MotherToBaby specialists are here to help!

Recommended Fact Sheets
Abatacept (Orencia®)
ACE Inhibitors
Acetaminophen (Paracetamol)

Related Blogs
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