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

Questions? Call 866.626.6847 | Text 855.999.3525 | Email or Chat at MotherToBaby.org.

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For breastfeeding people living in rural areas, it is often difficult to find appropriate breastfeeding and lactation resources as they can be few and far between. According to the Centers for Disease Control and Prevention (CDC), infants in rural areas are less likely to ever breastfeed than infants living in urban areas.

Emma, a new mother to a baby boy, lives in a rural area where the nearest town with a healthcare facility is over an hour away. Even by phone, it was difficult to reach her provider's office. She was determined to provide the best for her son, including breastfeeding; however, she was concerned about managing her post-partum anxiety and depression. She wasn't sure where to find out if her medications were something she could take while breastfeeding – which made her more anxious! Emma faced some common challenges living in a rural area:

- Travel Barriers – Emma struggled with general breastfeeding and medications concerns, all while managing the demands of a newborn; traveling long distances for an appointment was not only exhausting, but also not ideal.

- Limited Local Support – Emma's town had no specialized breastfeeding support services. The nearest support group was a two-hour drive away, making it difficult for Emma to access help when she needed it most.

- Limited Resources – Finding reliable information about breastfeeding was another challenge. Emma felt isolated and unsure where to turn for accurate information.

One day, while searching for answers online and discovering mixed information about the medications she wanted to start, Emma discovered MotherToBaby. Intrigued by our expert support that was available remotely and promptly, she explored our fact sheets, blogs, and podcasts that cover a range of breastfeeding topics. After reviewing our website, she was delighted to see our live chat service!

During our conversation, we addressed Emma's concerns about breastfeeding while on her medications to treat her post-partum anxiety and depression. We were also able to discuss the recommendations for vaccines while breastfeeding (like the updated COVID-19 and influenza vaccines. We also answered her questions about cold medications, referring her to our specialized blog. She was very relieved to connect with someone so quickly and receive accurate information on the spot.

The flexibility of MotherToBaby's online services was also a game-changer for Emma. She was now able to access information at times that suited her schedule, as she also could use our text, email, or phone service. This was particularly important for Emma, since her days were unpredictable and often included late-night feedings and other unexpected moments!

MotherToBaby referred Emma to online lactation resources and support groups. Engaging with other breastfeeding parents and experts on an online platform can provide her with emotional support and encouragement. Sharing experiences and hearing from others who faced similar challenges can also help Emma feel less alone and more empowered in her breastfeeding journey. Engaging with the online community and support can provide Emma with a sense of connection and support that was missing in her rural area, which can help her more easily navigate the ups and downs of breastfeeding.

Mental health support was also very important to Emma because she lacked this in her daily life. Resources like Post-Partum Support International (PSI) and the National Maternal Mental Health Hotline are now tools Emma has to support her along the way.

With evidence-based information about her medications and referrals to the appropriate resources, Emma felt much more reassured about treating her anxiety and depression while breastfeeding. She felt more knowledgeable and prepared to continue taking care of herself and her newborn. The convenience of online support and education alleviated much of the stress she had been feeling. She could now focus more on bonding with her baby, knowing she can turn to MotherToBaby should she have more questions or concerns about medications or exposures while breastfeeding.

References:

https://www.ruralhealthinfo.org/toolkits/maternal-health/2/breastfeeding

https://www.cdc.gov/breastfeeding/data/facts.html

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It was late on a Tuesday when a chat came in from Dr. Rodriguez. “My patient is taking a medication for epilepsy. She is planning a pregnancy and I’ve seen from some sources she may need to take more folic acid to help prevent birth defects. Does she need to be on a higher dose?” As teratogen information specialists, we receive many inquiries regarding folic acid; and it was understandable why this healthcare provider was confused as the guidance isn’t exactly straightforward.

What is folic acid?

Folic acid is the lab made form of folate. Folate is a B9 vitamin. Folate and folic acid help the body create new cells and can lower the chance of having a child with a class of birth defects called neural tube defects, which are problems with the brain and spinal cord. The neural tube forms very early in pregnancy (around 4 to 6 weeks after the first day of the last menstrual period), so it’s important that any woman who could become pregnant get enough folic acid at least one month ***BEFORE*** she gets pregnant. In the United States many of our foods, such as breakfast cereal, bread, pasta, and rice are fortified with folic acid, which meant the vitamin has been added to the food. According to the Centers for Disease Control and Prevention (CDC), folic acid fortification programs have led to a 35% decrease in the rate of neural tube defects! We also get folate, which is the naturally occurring form of Vitamin B9, from foods like dark leafy greens, beans, citrus fruits, and nuts. However, only about 50% of this form is bioavailable (able to be absorbed and used by the body) so additional intake, in the form of a supplement, is recommended by organizations like the CDC and National Institutes of Health (NIH).

How much is needed?

The CDC recommends that all women of reproductive age get at least 400 mcg (0.4 mg) of folic acid each day. Once pregnant, organizations like The NIH and the United States Preventative Services Task Force (USPSTF) recommend that women who are pregnant get 600 to 800 mcg (0.6 to 0.8 mg) of folic acid per day. This amount can usually be met by taking an over-the-counter prenatal vitamin; a higher amount is not recommended for most pregnant women.

Women who have previously had a pregnancy affected by a neural tube defect (NTD) should take a higher dose of folic acid if they are planning to become pregnant again. The CDC and the American College of Obstetricians and Gynecologists (ACOG) recommends 4,000 mcg (4 mg) per day for these individuals. This higher dose should be started at least one month before becoming pregnant and should be continued through the first three months of pregnancy.

So what about Dr. Rodriguez's patient who was on an anti-epileptic drug (AED) for her seizure disorder? Many, but not all, medications in the AED class are known as "folic acid antagonists." This means that they can interfere with how the body absorbs and uses this important vitamin. If someone becomes pregnant while taking a folic acid antagonist, they may have lower levels of folic acid in their body and their pregnancy could be at higher risk of neural tube defects. That said, there is no great research that shows that taking extra folic acid would lower the risk of NTDs for women taking folic acid antagonists. So, should a woman taking an AED stick with the 400 mcg per day that is already recommended for everyone, or take more just in case it could be helpful?

Let's look at the current professional recommendations:

- The American Academy of Neurology and the American Epilepsy Society guidelines state that all women of childbearing age, with or without epilepsy, should be supplemented with at least 400 mcg (0.4 mg) of folic acid per day prior to conception and during pregnancy. They go on to say there is not enough data to know if taking folic acid at doses higher than 400 mcg offer greater protective benefits for women on AEDs.

- The American College of Obstetricians and Gynecologists (ACOG) recommends 4000 mcg (4 mg) of folic acid per day for individuals at increased risk of having a baby with a NTD, which includes women with seizure disorders.

- The Centers for Disease Control and Prevention (CDC) only recommends a higher dose of folic acid for those with a history of a pregnancy affected by a NTD.

- The U.S. Department of Health and Human Services (Office of Women's Health) recommends talking to your doctor to determine the right dose of folic acid if you are taking a medication for epilepsy.

Clear as mud, right? The current consensus seems to be that there is no consensus. Some groups recommend a higher dose while others do not. In situations like this where there is no clear consensus from the professional groups, it comes down to weighing the risks vs. benefits. The risks include the fact that higher doses of folic acid are not well studied in pregnancy, could mask a B-12 deficiency, and may actually make some medications less effective. The benefits of taking more are theoretical (not proven). A higher dose of folic acid ***might*** be protective in preventing birth defects while on a folic acid antagonist, but there is not enough research to know if this is true. Ultimately, much more data will be needed to come up with clear guidelines for women with epilepsy.

Because Dr. Rodriguez's patient was on carbamazepine, a folic acid antagonist that is associated with a higher chance for neural tube defects, she decided that she would have a thorough discussion of the risk vs. benefits of taking a higher dose of folic acid with her patient before she became pregnant. Dr. Rodriguez was glad she hadn't missed any overarching recommendations for women who need to take medication to control their seizure disorders during pregnancy. She ended her chat by saying: "It can be a challenge to keep up to date with all the recommendations. I'm so glad to have access to MotherToBaby to be able to ask questions like this."

MotherToBaby specialists are always happy to review the latest data and professional recommendations with healthcare providers and patients alike. If you have questions about folic acid, epilepsy medication, or any other exposures in pregnancy or lactation, please feel free to get in touch.

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