RhoGAM and Rh Negative Moms: A Life-Saving Match

Having worked as a Teratogen Information Specialist at MotherToBaby for close to 10 years, I have become well versed in the different exposures people commonly ask about. Allergy medications in the spring, sunscreen and bug spray in the summer, and cough and cold medications all winter long. So, when I logged onto our live chat service at mothertobaby.org on a Tuesday morning, I was surprised to see a question that doesn't come up very often. Natalie, pregnant with her first child, asked: "I'm 24 weeks pregnant and my midwife says I need a RhoGAM shot at my next appointment. What could happen to the baby if I do not get this shot?"

Blood Type Basics

Blood type is hereditary, which means it is passed down from your parents. There are 8 common blood types: A+, A-, B+, B-, O+, O-, AB+, and AB-. If your blood type ends in a minus sign (like A- or O-), you are Rh negative. If it ends in a plus sign (like A+ or B+), you are Rh positive. Most people in the United States are Rh positive, but about 15 out of every 100 people (15%) are Rh negative. A blood test early in pregnancy will tell you your blood type.

What is Rh Incompatibility?

During pregnancy, if a woman who is Rh negative is pregnant with a fetus that is Rh positive, a condition called Rh incompatibility can happen. Rh incompatibility becomes an issue if any of the Rh positive red blood cells from the fetus get into the mom's Rh negative bloodstream. This is most likely to occur during a miscarriage, certain prenatal tests (like amniocentesis or CVS), a fall, labor and delivery, or if the placenta separates from the wall of the uterus. When this happens, the mom's immune system might treat the fetus' red blood cells as something that shouldn't be in the body (like an infection) and start making antibodies against them. In most cases, these antibodies will not negatively affect the current pregnancy, but they might affect future pregnancies.

When Antibodies Attack

Once the mom's body makes anti-Rh antibodies, they stay in her system for life. If she becomes pregnant again with another Rh positive fetus, the antibodies can cross the placenta and attack the fetus' red blood cells. This can lead to a condition called hemolytic disease of the fetus and newborn (HDFN). Without enough red blood cells, the fetus cannot carry enough oxygen during development and complications such as jaundice (yellowing of skin and eyes), hemolytic anemic (low red blood cell count), hydrops fetalis (fluid buildup in the baby), high bilirubin levels, kernicterus (brain damage from the bilirubin), and even death can occur.

RhoGAM to the Rescue

Fortunately, there is a way to lower the chance of HDFN: The RhoGAM shot. Typically given around 28 weeks of

pregnancy (and again within 72 hours of birth if the baby is confirmed to be Rh positive), RhoGAM is an antibody that helps stop the Rh negative mom from making antibodies that could attack a future fetus' red blood cells and cause HDFN. Before RhoGAM was available, thousands of babies died from the condition every year. Nowadays, the chance of HDFN is less than 0.1% when the shot is given, making RhoGAM a remarkable intervention.

Protecting Your Future Babies

After sharing this information with Natalie, I summarized our conversation with a quick recap. Since she is Rh negative, her midwife was recommending a RhoGAM shot at 28 weeks to prevent the development of antibodies that could negatively affect a future pregnancy. An increased risk for miscarriage or birth defects is not expected since the shot is given later in pregnancy and Natalie is past the "critical period" for those outcomes to occur. Pregnancy complications, like preterm delivery and low birth weight, have not been reported in the available studies examining the use of RhoGAM in pregnancy. Natalie felt reassured after receiving this information and decided to proceed with the RhoGAM shot at her next midwife appointment.

If you have questions about the RhoGAM shot or any other exposures in pregnancy, please feel free to reach out to MotherToBaby by phone, chat, text, or email to receive evidence-based information that can help you make an informed decision.

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RhoGAM and Rh Negative Moms: A Life-Saving Match

Mental health conditions are real health issues that deserve appropriate and individualized medical care. Making informed healthcare decisions requires that women and their healthcare providers be aware of the available safety information for each specific medication they might be considering. We encourage pregnant women and those planning a pregnancy to have open conversations with their healthcare providers to carefully weigh any potential increased risks of medications, as well as the risks of untreated or undertreated mental health conditions.

SSRIs – including commonly prescribed medications such as Zoloft (sertraline), Lexapro (escitalopram), Prozac (fluoxetine), Paxil (paroxetine), and others – are among the most well-studied medications used in pregnancy. Decades of research have shown that SSRIs, when used appropriately and under the care of a healthcare provider, can be part of an effective treatment plan for managing mental health conditions before, during, and after pregnancy, and can contribute to better outcomes for women and their babies.

As always, MotherToBaby and the Organization of Teratology Information Specialists (OTIS) stand with women and their healthcare teams by providing up-to-date, evidence-based information on the use of medications and other exposures during pregnancy and while breastfeeding.

MotherToBaby offers free, expert-reviewed fact sheets on SSRIs and other medications, as well as on conditions such as depression, anxiety, and stress. You can find many of our mental health resources here: https://mothertobaby.org/pregnancy-breastfeeding-exposures/mental-health/. Individuals can also reach out to a MotherToBaby specialist via phone, live chat, text, or email to receive personalized, confidential support.

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Understanding Critical Periods in Pregnancy

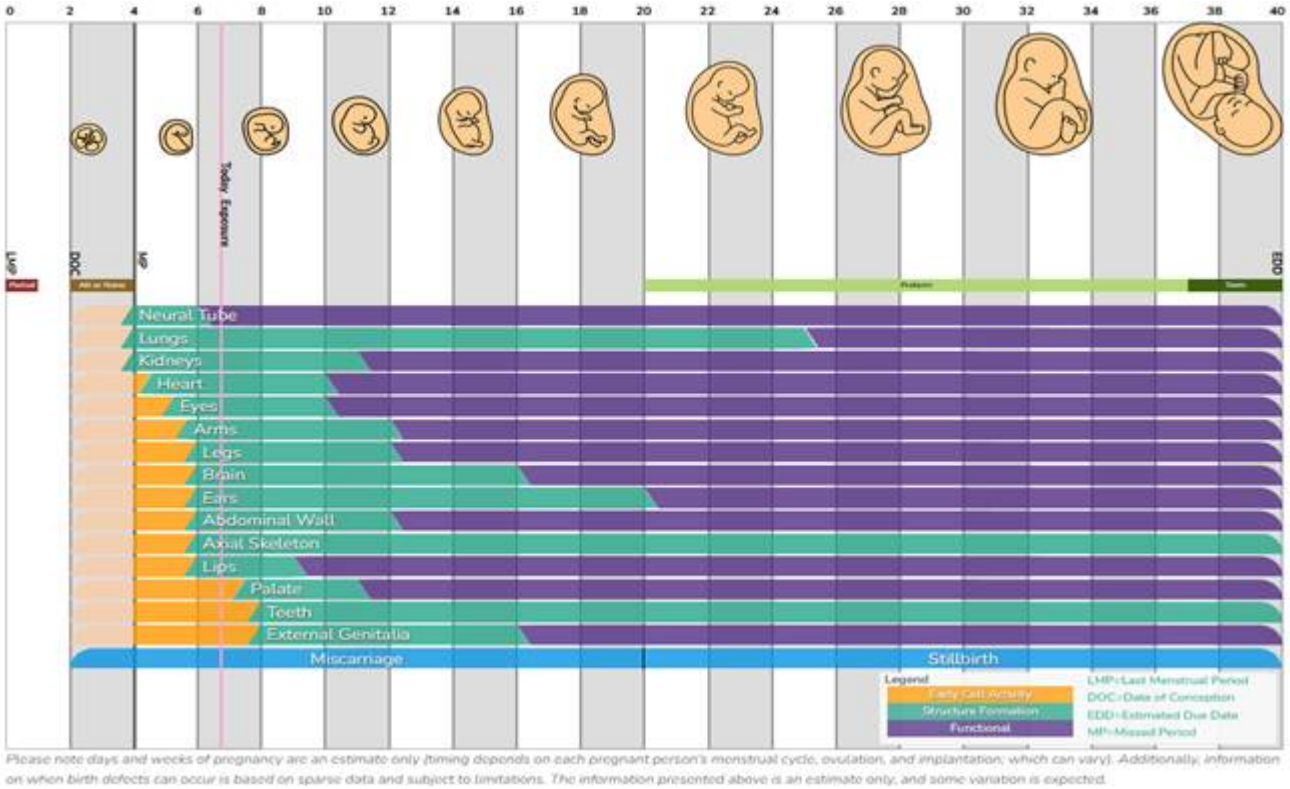
Kendra, newly pregnant at approximately 7 weeks along, contacted MotherToBaby late one afternoon with a question that had been causing her a lot of anxiety. Norovirus was running rampant in her home, and she was feeling extremely nauseous. Having found relief with it before, she explained that she had taken a single dose of Zofran (ondansetron)

early that morning. She was certain this drug was ok to take during pregnancy, but after searching online, she became concerned. Kendra shared that she had read conflicting information about whether Zofran increased the risks for birth defects; with some studies showing an increased chance of heart defect and cleft palate, and other studies showing no increased risk. Feeling confused, Kendra reached out to MotherToBaby with her question to receive personalized information.

On the call, I first explained that birth defects can happen in any pregnancy for different reasons. Out of all babies born each year, about 3 out of 100 (3%) will have a birth defect. Pregnancy problems (like miscarriage) can also happen in any pregnancy. Sometimes, exposures like medications, drugs, alcohol, and infections can increase the chance for birth defects or pregnancy complications. However, for an exposure to cause a problem, it generally has to happen during the “critical period” when a body part is forming.

To help Kendra understand more about possible risk from her Zofran exposure, I used MotherToBaby’s new and interactive critical periods of pregnancy tool! This helpful pregnancy calculator and chart shows when different parts of a baby’s body form during pregnancy and when birth defects or pregnancy complications might happen. By entering the first day of your last menstrual period (LMP) or estimated due date (EDD), the calculator can estimate how far along you are today. Individuals who have questions about exposures in pregnancy can then go on to enter the specific date(s) when the exposure (such as medication use or alcohol consumption) occurred, and the chart will show the body parts that are developing during that time.

After entering the first day of Kendra’s last period, the interactive tool confirmed she was 6 weeks and 5 days pregnant. I then entered her Zofran exposure using today’s date, which resulted in a pink line popping up on the chart. Following this line down the chart, I could see all of the different body parts that were currently forming. I explained to Kendra that when she took the Zofran, the palate (roof of the mouth) had not yet started to form, meaning that the medication use was unlikely to increase the chance of cleft palate in the baby. The chart also helped me see that the baby’s heart was currently developing. I shared this with Kendra, but also reminded her that the latest research shows there is thought to be a less than 1% chance of heart defects from exposure to Zofran; meaning there is a more than 99% chance the heart will not be affected by her medication use. In other words, even when an exposure of concern takes place during the critical period, not every baby will be affected by that birth defect.



New Critical Periods of Pregnancy Interactive Tool

For Kendra, being able to understand which specific body parts were forming when she took the Zofran and whether she actually needed to be concerned helped decrease her anxiety significantly. Knowing that the heart was currently forming, she decided to reach out to her healthcare provider to discuss alternative treatment options for her nausea. I was happy to have helped answer Kendra's question using this visual tool and look forward to being able to use it again in the future when pregnant women have questions about the timing of their exposure.

Remember that our team is always available to help review any exposures you have had and provide a personalized risk assessment. Don't hesitate to contact MotherToBaby by phone, chat, text, or email!

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The arrival of spring and summer warmth spurs many of us to spend more time outdoors and make travel plans, be it for a honeymoon, babymoon, or other seasonal getaway. Such was the case with Yesenia, who contacted MotherToBaby with questions about her upcoming summer vacation after finding out she is pregnant. Yesenia knew that with warmer temperatures comes an increased chance of mosquito bites and the infections they can carry. Like Yesenia, as you engage in more outdoor activity and plan getaway time, you may also have questions about exposure to these infections and their possible effects on a pregnancy. Understanding the potential risks of these illnesses and ways to protect yourself may help you make better-informed decisions before you decide to travel. This month, MotherToBaby turns to our partner the Society for Maternal-Fetal Medicine (SMFM) to help answer some of Yesenia's questions:

What are vectors and vector-borne illnesses?

Vectors are living organisms, such as mosquitoes, ticks, biting flies or fleas, that are capable of spreading diseases to humans through bites and other forms of contact. Some common examples of these diseases, called vector-borne illnesses, include Chikungunya, dengue, malaria, Oropouche, and Zika virus. While disease-carrying insects can bite year-round, they are most active during warm weather. Many vector-borne illnesses have no cure, and treatment is usually limited to just managing the symptoms. This is why it's important to protect yourself from bites!

How can vector-borne illnesses affect a pregnancy?

There can be serious health complications for the mother with some vector-borne infections during pregnancy, such as severe anemia, bleeding, and the need for hospitalization. If the mother develops serious complications, it increases the chance of problems for the baby, such as low birth weight, preterm delivery, or stillbirth. Some vector-borne illnesses may be passed from mother to baby during pregnancy, which can lead to serious birth defects, such as microcephaly (a condition where the head is smaller than normal), other structural defects of the brain and eyes, and problems with long-term development and cognition (such as learning, understanding, and memory). For more information, see the MotherToBaby fact sheets on dengue, malaria, Oropouche, and Zika. The CDC also has information about chikungunya and other vector-borne diseases.

I am pregnant and I am planning to travel. How can I protect myself?

Here are some quick tips:

- If traveling, check CDC's Travel Health Notices (THN) page before booking your trip. Avoid nonessential travel to high-risk areas starting with a Level 2 or higher advisory on the THN board.
- Use the Travelers' Rapid Health Information Portal for destination-specific recommendations, such as which vaccines to get to prevent travel-related illness.
- Wear long-sleeved shirts and long pants when spending time outdoors.
- Apply Environmental Protection Agency (EPA) registered insect repellents to exposed skin and clothing.
- Avoid outdoor activity during dusk and dawn when mosquitoes are most active.
- Minimize exposure to open water sources, such as pools and lakes, which are breeding grounds for vectors.
- Keep windows and doors closed or use fans, mosquito nets, and mesh screens on windows and doors.
- Use the CDC's Pregnant Travelers' Health Guide for other general travel tips.

Which insect repellents are EPA-registered? And are they safe for me to use during pregnancy?

EPA-registered insect repellents include:

- N, N-diethyl-meta-toluamide (DEET)
- Picaridin
- IR3535
- Oil of lemon eucalyptus

- Para-menthane-diol

The EPA has studied these insect repellents for their effectiveness and safety profile. When used as directed on the product label, there is no evidence to suggest that these insect repellents increase the chance of birth defects or other pregnancy-related complications. For additional information, please see the MotherToBaby fact sheet on insect repellents.

Are there alternative insect repellents I can use?

Other essential-oil-based insect repellent products, including disposable wristbands and patches, are often advertised as safer alternatives to EPA-registered products, but there is no scientific evidence that they effectively protect you and your baby against disease-carrying insects. In addition, the essential oils in these products, such as peppermint, citronella, and lemongrass, are not regulated by the EPA as pesticides. It's better to steer clear of these products in favor of EPA-registered insect repellents.

I've read about "parasite cleanses." Do they work on vector-borne illnesses?

Parasites are living organisms that live on or inside a host and can cause harm by damaging tissues or triggering severe immune responses. Vector-borne illnesses are different from parasitic infections. But you may have seen social media posts touting home parasite cleanses that claim to "detox the body" and "kill off parasites" and wonder whether they could help prevent these diseases. The answer is a decided "no."

These cleanses, which contain a blend of herbs, have no proven record of efficacy (doing what the label claims they do) or safety (that they will not cause unwanted symptoms), especially for use during pregnancy. Although many of these products claim to target a wide range of parasites, they can have dangerous and unknown side effects for you and your baby.

Parasitic and vector-borne illnesses are serious conditions requiring proper medical attention. They cannot be cured by these products. If you suspect that you have a parasitic infection—or any other serious illness—it's important to speak with a doctor as soon as possible, especially during pregnancy.

The bottom line

So, what's SMFM's advice to Yesenia for her upcoming travel? The bottom line for protecting herself this spring and summer from vector-borne illnesses: stay away from higher-risk areas, stick with proven, safe repellents recommended by the EPA, and get in touch with her healthcare provider if she has any questions. Safe travels to Yesenia and to you!

More about Our Guest Co-Authors from SMFM

Naima T. Joseph, MD, is Vice Chair of the Society for Maternal-Fetal Medicine (SMFM) Committee on Infectious Diseases and Emerging Threats. Dr. Joseph is an MFM subspecialist in the Department of Obstetrics and Gynecology at Boston Medical Center and an Assistant Professor at Boston University School of Medicine.

Hazel Salvador is an intern at the Society for Maternal-Fetal Medicine and a Master of Public Health (MPH) student at George Washington University. She is interested in health policy, maternal and child health, and epidemiology, and she hopes to pursue a Doctor of Public Health (DrPH) degree in the future. In her free time, she enjoys traveling and playing with her two parrots.

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

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Marie called with a question, “My baby is 4 weeks old, and my husband and I love her to death. However, she is a lot of work, and we do not want another little one quite yet. My husband and I are also hoping to resume our sex life, but can I be on birth control while breastfeeding?”

MotherToBaby is here to help answer some of those questions! Of course, before you decide, it is best to speak with your medical provider and get their advice. Since everyone is different, some birth control methods might not be a good match for you.

Can breastfeeding be used as contraception?

There are many benefits to breastfeeding. Breastmilk has antibodies that are passed to the baby and help them build their immune system and protect against illnesses. Breastmilk is also a great source of nutrition. When a woman is breastfeeding, they might experience amenorrhea (when you do not have a monthly a menstrual period). Breastfeeding can be a temporary form of birth control if the person is exclusively breastfeeding (i.e., no formula), they have not had a menstrual period yet, and the baby is less than 6 months old. This method is sometimes called the “lactational amenorrhea method (LAM)”. LAM does not work for everybody and may not be reliable enough for all couples. Some people do not develop amenorrhea when breastfeeding, so another form of birth control would be recommended.

Are there other forms of birth control that I can use when breastfeeding?

Many contraceptive methods do not affect your breastfeeding. However, options which contain estrogen might reduce your milk supply. Depending on what option you choose, your healthcare team may suggest that you wait up to 4-6 weeks after delivery so that your milk supply is well established, and your body has recovered from childbirth.

Another factor is how serious you are about preventing another pregnancy. Some options such as the IUD, hormonal implant, and Depo-Provera injection are 98-99% effective in preventing pregnancy (this means only 1 or 2 out of 100 women will get pregnant every year using those methods). The birth control pill is around 93% effective in preventing

pregnancy (this means around 7 out of 100 women will get pregnant every year using birth control pills). The condom is around 85% effective, depending on how carefully it is used (this means around 15 out of 100 women will get pregnant every year using this method).

The American College of Obstetricians and Gynecologists (ACOG) has a web page that answers frequently asked questions about contraceptives including advantages and disadvantages of each type: https://www.acog.org/womens-health/faqs/postpartum-birth-control

Hormonal Birth Control Options

There are many kinds of hormonal birth control options including pills taken orally (by mouth), injections, implants, and some IUDs. Some options contain forms of both estrogen and progesterone, and some just contain progesterone. In general, it is expected that only small amounts of the hormones would pass into your breastmilk, and these low levels are unlikely to result in any side effects in your baby. However, some of them can affect your milk supply.

Some estrogen-containing options include “combination birth control pills,” the skin patch, and the vaginal ring. A disadvantage of estrogen is that it can reduce or even stop milk supply. Healthcare providers usually recommend waiting to start estrogen-methods until at least 4 weeks after delivery to allow your milk supply to be well established.

Progesterone-only options include the progestin only pills (“mini pills”), the injection (ex. DepoProvera shot), the implant (ex. Nexplanon), the hormonal intrauterine device (IUD), and emergency contraception. Progesterone only options generally do not reduce your milk supply or affect milk quality. Some professional groups suggest waiting 4-6 weeks after giving birth before getting the Depo-Provera shot because the amount of hormone in your blood and milk from this injection are highest around the time it is given.

Non-Hormonal Birth Control Options

Non-hormonal birth control options include barrier methods like male and female condoms, spermicide, diaphragms, the cervical cap, the sponge, and the copper IUD. None of these strategies impact milk supply.

Fertility Awareness Methods/Lifestyle Options

Other birth control options that do not include hormones or barrier items are the calendar tracking option and abstinence. The calendar tracking option is when you track your menstrual cycle and avoid intercourse on the days you are most fertile (most likely to get pregnant). This method is not very reliable following childbirth because a menstrual cycle can be irregular during the first few months. Abstinence is the avoidance of vaginal intercourse and choosing to be intimate in other ways that cannot result in a pregnancy. Abstinence is 100% effective at preventing pregnancy.

Summary

In summary, what is the best birth control option during breastfeeding? Each person will be different, so it is important to talk with your healthcare provider about which option is best for you based on the timing, effectiveness, family planning decisions, and your other personal health factors.

Resources

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