

Fighting The Bite: A Woman's Guide to Avoiding Zika in Pregnancy

By Patricia Markland Cole, MPH, MotherToBaby Massachusetts

****This information was current as of the time the blog was published. However, information is constantly changing. Please visit [Zika Central](#) for the latest information.****

Zika, Zika, Zika.....everywhere you turn someone is talking about Zika and it's not hard to understand why. Last fall in Brazil, the cases began coming in with unusual frequency. Health care providers noticed an increase in babies born with small heads and small brains, a birth defect called microcephaly. And the questions began pouring in as to why this could be happening? Providers noticed these women lived in or had visited areas affected by the Zika Virus; in fact, out of the first 35 case reports of microcephaly the majority of the moms reported a rash-like illness and some tested positive for Zika.

When Zika hit the news, it was understandably scary for pregnant woman. One of our most vulnerable populations - our babies- are at risk from something we can't even see with our natural eyes: a virus carried by a mosquito. While we still have much to learn about Zika and pregnancy (including whether it is actually associated with microcephaly), the possibility that there is a risk takes away from the joy and celebration that pregnant woman normally feel and has replaced that with fear and trepidation. As a counselor with MotherToBaby, I know. I've heard the fear in the voices of women calling me; even through emails and text messages, the concern has been palpable. So let's put it all into perspective.

Focusing Away From Fear: If You're Planning A Pregnancy...

While there is so much focus on the fears of pregnant woman, there are very real concerns that the woman or couple planning for pregnancy experience as well. Just the other day, I had a conversation with a woman who contacted our service hoping to get some answers. "I am planning to go through IVF and scheduled a trip to Mexico well in advance of the news about Zika. My plan was to go to Mexico and start going thru IVF when I came back. Do I have to cancel my trip or if I go do I have to delay my plans for pregnancy, and, if so, for how long. It is hard to think of delaying pregnancy but at the same time we were so looking forward to this trip and planned it long ago!" I could hear the struggle.

We're still learning about Zika, but for couples planning a pregnancy the current recommendation is that you talk with your physician about how your plans could be affected by travel to a Zika-affected area. Zika usually remains in the blood for a week after infection and there is currently no evidence to suggest an increased risk of birth defects if a woman becomes pregnant after the infection has passed.

If You're Pregnant...

Zika can be spread from a pregnant woman to her baby. The link between Zika and microcephaly is still being investigated, but to be safe the US Centers for Disease Control and Prevention (CDC) currently recommends that pregnant women consider postponing travel to any area where Zika virus is spreading. If travel to an affected region cannot be avoided, you should talk to your healthcare provider before leaving, and while traveling take careful steps to prevent mosquito bites (see below). If you've recently completed your travel, you should still talk to your healthcare provider, even if you don't feel sick.

Zika Can Be Transmitted Through Sexual Contact.

For men, Zika can remain in semen for a longer period of time so it is important to speak with your healthcare provider regarding risks. If a man has traveled to a Zika-affected region and has a pregnant partner, it has been recommended that he use condoms during sex (vaginal, anal, and oral) for the remainder of the pregnancy. For couples planning a pregnancy, it has been recommended that men use condoms for 28 days after traveling to Zika infected areas. For more details, see our fact sheet, [Zika and Pregnancy](https://mothertobaby.org/fact-sheets/zika-virus-pregnancy/) <https://mothertobaby.org/fact-sheets/zika-virus-pregnancy/>.

Travel and Mosquito Bite Prevention

It is important to check travel advisories for the area you plan to visit because the status of areas can change before your trip quite rapidly. For example, prior to traveling to Florida a physician called me about the safety for his wife to

use DEET during pregnancy. At the time there were no advisories for the area but shortly thereafter, the Governor of Florida issued a state of emergency for some counties that had reported cases of Zika infection that were linked to people who had traveled to Zika-affected areas. Therefore it is important to always check the CDC website for travel information (<http://wwwnc.cdc.gov/travel/page/zika-travel-information>) and to take the necessary precautions to protect yourself from mosquito bites. These include:

- Wear long sleeve shirts and pants;
- Use mosquito repellent with an EPA registered number as this means that the repellent has been proven safe and effective like DEET and picaridin; both of these agents are considered compatible for pregnancy. Make sure to read the label and follow the instructions, as you may need to reapply insect repellent every few hours. If you are using sunscreen, apply that first and then add the insect repellent. You can get more info on insect repellent use during pregnancy from our new Fact Sheet at <https://mothertobaby.org/fact-sheets/insect-repellents/>;
- Stay in air-conditioned areas;
- Stay in areas with screened doors, and sleep with mosquito netting.

Mosquito-transmitted Viruses are Nothing New

Zika is just the latest punch from these biting bullies. In fact, taking steps to avoid mosquito bites is something we should all be doing, as there are quite a few diseases they can pass on to humans. Some are more common in tropical areas but can also be found here in the United States like Dengue and West Nile Virus. Both conditions are associated with uncomfortable symptoms, dengue can pose complications for pregnancy and the effects of West Nile during pregnancy are not that well known – so protection at all times is key. Thankfully, neither are as frequent in the United States or Canada as in some other parts of the world due to the use of insect repellents and other protective measures we have. For more info, check out our West Nile Virus Fact Sheet at <https://mothertobaby.org/fact-sheets/west-nile-virus-infection-pregnancy/>

Remember: if you are not pregnant, Zika virus overall does not cause serious effects. It is only when a woman gets Zika during pregnancy that experts suspect (but have not yet proven) that it may increase the risk of birth defects so there is still more to learn.

It's been said that the only thing that remains constant is change. Whether it's Zika or the next mosquito-transmitted outbreak, fight the bite and navigate those changes. MotherToBaby is here to help.



Patricia Cole, MPH, is the Program Coordinator for MotherToBaby Massachusetts. She obtained her Bachelor's degree in Biology from Simmons College in Boston and her MPH in Maternal and Child Health from Boston University School of Public Health. She has been serving the families of New England as a teratogen counselor since 2001 and provides oversight for the day-to-day functions and outreach of the program. She has also provides education to graduate students and other professionals.

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sheet for concerned pregnant and breastfeeding women. It can be found here:
<https://mothertobaby.org/fact-sheets/zika-virus-pregnancy/>

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By Debra Goniwicha, MSW, MotherToBaby Georgia

I have spent a significant portion of my career working in hospitals. Shortly after learning I was pregnant with my first child, I received a notice that I may have been exposed to an airborne illness while I was at work in the hospital Emergency Room. The notice advised me to report to occupational health for further testing. I flipped out! I was scared to death that my exposure would cause harm to my baby. I was mad at the world for exposing my baby to potential harm and I was mad at myself for not being more aware of the contagious illnesses that I was surrounded by on a daily basis. But mostly, I was terrified.

An airborne infection is an illness spread by little drops of liquid (germs) that float through the air. Airborne illness occurs when someone who is infected coughs or sneezes sending the germs into the air, exposing individuals nearby to potential illness from breathing in the infection or touching surfaces where the drops land. Tuberculosis, chicken pox, and measles are all types of airborne infections. Since February happens to be International Prenatal Infection Prevention Month, I thought it would be a great time to discuss how to best avoid airborne infections in pregnancy.

So back to my own airborne illness exposure... there I was on my way down to occupational health. I was, of course, creating several devastating scenarios in my head. The logical part of my brain was recalling this was absolutely NOT the first time that I had received notice that I had been exposed to something contagious and that while every exposure notice made me worry a bit, I'd get tested, the results were fine, and I'd go on with my life. But this time I was pregnant, and it wasn't just my life that I was worried about. It was the life and health of my much wanted, growing baby. I was fully aware how dangerous infections could be in pregnancy. I had witnessed infants in the neonatal intensive care that were born to mothers with untreated infections.

Arriving at occupational health, I was directed to a room by a nurse and immediately started sobbing. I hadn't yet told my boss or coworkers that I was pregnant. I was superstitious, it was my first pregnancy, and I believed that you were not supposed to tell people the news until you were 12 weeks pregnant. As I stammered out why I was there, an amazing nurse (who I remember to this day) handed me tissues and gave me the best reassurance and education possible about airborne infections during pregnancy.

The nurse reminded me that I was regularly doing many things to prevent airborne infection. These include:

Handwashing – Because of working in healthcare I am very knowledgeable about the fine art of handwashing. Hands need to be wet, then apply soap and rub your hands together for 20 seconds (quick tip: singing Happy Birthday while rubbing your hands together will equal 20 seconds!). Rinse your hands and dry with paper towel.

Immunizations – Remaining current on vaccinations can go a long way to preventing an infection from an airborne illness. Examples include vaccinations to protect from the seasonal flu, the measles, pertussis (whooping cough), and bacterial meningitis. Thankfully, I was current on all my vaccinations. After this incident, I also reminded my family members to make sure they were current on their immunizations as well. Since I was pregnant, I really did not want anybody near me bringing home infections to share!

Droplet Precautions – This refers to avoiding droplets that might come from an infected person's coughing or sneezing. Working in a hospital has taught me many things. One of them is to stand back and to the side when someone is coughing. This helps to minimize direct contact of flying particles. Also, be very aware of what you touch. Touching surfaces and then touching your eyes, nose or mouth increases contact with droplets that may contain infection. Wearing a mask over your mouth and nose also can reduce exposure to airborne droplets that contain germs.

Getting Tested and, if needed, Treatment – Most important, after learning I had been exposed, I was getting tested for infection. If the tests were positive, I could be treated before the baby was born, decreasing the risk of passing the infection to my developing baby.

I was immensely relieved when my test results were clear and showed no signs of infection. By using good common sense and following some standard precautions, I have been able to avoid any serious viral or bacterial infections. Being pregnant changed my view of the world, and it also sharpened my awareness of working safely in a hospital. I have now survived three pregnancies while working in a hospital and have three happy, healthy, and rambunctious boys.



Debra Goniwicha, MSW is the Program Coordinator for MotherToBaby's Georgia affiliate. She has a Master's Degree in Social Work from Wayne State University in Detroit and has worked as a medical social worker for 18 years. Debra has specialized in maternal/fetal medical social work since 2003. She has also worked as a licensed clinical social worker, counseling women with mental health issues. Debra enjoys working directly with women during pregnancy and postpartum, helping interpret medical information and providing support so they can make informed choices.

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Fighting The Bite: A Woman's Guide to Avoiding Zika in Pregnancy

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By Lauren Bryl, MS, Certified Genetic Counselor, MotherToBaby IL

It's National Birth Defects Prevention Month, and you've found yourself here - standing in the pharmacy aisle in search of prenatal vitamins. You think, "I should start taking one of these if I want to have a baby, right? At least that's what I've heard..." Your eyes are swimming and head is spinning with all the options. "Should I choose the old-fashioned tablets, the fruit-flavored gummies, or the minty chewables? With DHA or without? Do I need extra calcium or vitamin D? Is 200% daily value better than 100%? This seems like a good one," you think to yourself. "Oh wait! Maybe this one is better..." Shelf after shelf of bottles of vitamins and supplements...but which one is right for you?

Give yourself a pat on the back.

First of all - well done, Mama! You've already made the most important decision by choosing to kick off your pregnancy journey with a solid supply of vitamins to support a growing baby! But why are prenatal vitamins so important anyway? Well, one of the main reasons is that deficiency of a vitamin called folate (also called folic acid) in very early pregnancy increases the risk for neural tube defects. Neural tube defects are a group of birth defects in which there is an opening in the spine. They include things like spina bifida. While the other vitamins and minerals may also provide benefits to mom and baby, the folic acid in the prenatal multivitamin is one of the most important for birth defect prevention. Taking folic acid prior to and during pregnancy is the best thing we can do to reduce the risk of neural tube defects.

Take a deep breath.

As a prenatal genetic counselor, I've had many patients ask me which prenatal vitamin is the best. While there are, of course, many factors that go into making a decision about which prenatal vitamin to take including cost considerations and personal preferences, I'm here to give some thoughts from a medical professional's perspective. First of all, you may not even have to make this choice yourself. Your doctor may prescribe you a prenatal vitamin with folic acid, so check with her first. But if she tells you to pick something up over the counter, don't panic.

Check the ingredients and their doses.

The exact vitamins and minerals that you, personally, will need in a multivitamin depends on a few things. One is whether you have any known vitamin or mineral deficiencies or risk factors for such a deficiency. For example, vegans and vegetarians are more likely to have deficiency of vitamin B12, a vitamin found in meat and other animal products. The amounts of vitamins and minerals you receive through your diet should be considered. It is common for women to need extra help getting the recommended amounts of calcium, iron, and vitamin D. The daily recommended intakes for pregnant women over 18 years are 1,000 mg (milligrams) of calcium, 27 mg of iron, and 600 IU (International Units) of vitamin D. Some health care providers will also suggest docosahexaenoic acid (DHA) supplementation of 200 mg per day for those who do not eat fatty fish (like salmon and tuna) at least twice a week.

Regardless of your diet, folic acid supplementation is a must. The natural form of the vitamin found in certain foods (called folate) is not as well absorbed as the supplemental form (folic acid). Because of this, the U.S. Public Health Service recommends that all women of childbearing age take a folic acid supplement of 400 micrograms (0.4 mg) per day. Once you become pregnant, this dosage increases to 600 micrograms (0.6 mg) per day. If you are at higher risk for neural tube defects than the average woman because of family history or another factor, an even higher dosage may be recommended. You should consult with your health care provider for her recommendation.

With vitamins, more is not always better, though. While some vitamins are unlikely to be harmful even if taken at high dosages in pregnancy, this is not true for all. Specifically, very large amounts of supplemental vitamin A have the potential to increase the risk of birth defects and intellectual disabilities. For this reason, it is recommended that vitamin A supplementation not exceed 10,000 IU per day.

Don't go too far off the beaten path.

Unlike medications and foods, vitamins and supplements are not regulated by the U.S. Food and Drug Administration (FDA). This means that the FDA does not test vitamins and other supplements to ensure that they contain the ingredients written on their labels at the doses indicated. The FDA also does not test for contamination with other, potentially harmful ingredients in vitamins and supplements. It is the responsibility of those who make the vitamins to perform these types of tests to ensure quality and safety.

Does this mean that most vitamins are dangerous? No, but it does mean that it may be safer to choose a widely available multivitamin rather than one produced by a small, specialized manufacturer. Companies with wider distribution are under more pressure to produce a safe product than those whose products you may only be able to buy in a specialty store or through their website. If in doubt, speak with your healthcare provider or a pharmacist.

Choose what works for you.

While perhaps the most obvious point, choosing a vitamin that you will actually take is arguably the most important one as well. The perfect multivitamin won't do you any good if it is gathering dust in the medicine cabinet. If even just the thought of swallowing a pill half the size of a golf ball every morning has you queasy, you could consider trying a liquid or chewable form. Iron in your prenatal vitamin giving you constipation? Ask your health care provider if it's necessary that you have iron supplementation if you receive adequate amounts through the foods that you eat.

So if you find yourself in the pharmacy aisle overwhelmed with all the multivitamin options, try not to stress! Remember these tips and save that energy for other difficult decisions down the road...like choosing a preschool!



Lauren Bryl, MS, is a certified genetic counselor, licensed in the state of Illinois. She graduated from Haverford College with a Bachelor's degree in molecular biology and earned a Master's of science in genetic counseling at Northwestern University. Located out of Chicago, Lauren serves as the coordinator for MotherToBaby Illinois. Since 2011 she has counseled women, their family members and their healthcare providers regarding the effects of exposures during both pregnancy and lactation. In addition to her role with MotherToBaby, Lauren is a clinical genetic counselor at Insight Medical Genetics where she provides both reproductive and hereditary cancer risk counseling.

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Fighting The Bite: A Woman's Guide to Avoiding Zika in Pregnancy

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By Neely Cessac, Teratogen Information Specialist, MotherToBaby

The holidays are full of family, fun, and enjoyment – and the season is wonderful EVERY, SINGLE, DAY, right?! WRONG. Every year many pregnant women (as well as the general public) become so stressed and worried around this time. And rightly so...not only do pregnant moms have regular holiday stress, but they'll soon become moms! M-O-M-S! Holy cow. An overwhelming concept, to say the least, especially with everyone telling you what you can (or should) do and what you can't (or shouldn't) do during pregnancy. As a birth defects information specialist, I'm starting to get a ton of questions surrounding stress from moms-to-be. I can relate...and I'm not even pregnant yet!

I always want everything to be perfect, from clean floors and ceiling fans, to wonderfully wrapped presents and delicious food. Luckily my mom is an expert at all of those things, so I asked my mom how she survived the holidays while she was pregnant with me. Between my teratology expertise (the study of exposures that cause birth defects) and her "mom-ology" expertise (the study of being awesome in general, but especially as a mom), we've put together a list of some key questions and answers to help you survive the holidays too!

Survival Q #1: How can I avoid becoming too stressed?

- How you breathe is important! Be sure to take deep breaths, in through your nose and out through your mouth, and relax.
- Realize you are not alone. Most pregnant women and women in general are feeling the same way you are. Talk to others; it will help reduce your feelings of stress.
- Take a nap! Escape and take a quick cat nap when you are really stressed and tired.
- Light to moderate non-impact exercise is great too. Try walking, swimming or yoga.

Survival Q #2: How can I avoid becoming too fatigued?

- Don't be afraid to admit you are too tired to do some things. You cannot (and should not) be super woman during the holidays! Just say "no".
- Sleep, sleep, sleep! Try to get about eight hours of sleep each night.
- Have that morning cup of coffee or tea. Studies have shown that limited amounts of caffeine, 200-300 mg a day, have not been associated with any known increased risks for baby.

Survival Q #3: How can I avoid drinking alcohol?

- Don't be tempted to drink alcohol, as alcohol is known to be harmful for baby. Bring your own non-alcoholic beer or wine with you to the party.
- Want something bubbly to drink on New Year's Eve? Try a delicious non-alcoholic sparkling juice or cider.
- Make sure there is no alcohol in the drinks or desserts that your host/hostess is serving at the party. Don't be afraid to ask questions!

Survival Q #4: How can I avoid complications from overeating, such as gas and constipation?

- Eat more often, but eat smaller portions. With a baby on board, you do not have as much room in your tummy as you used to!
- When needed for gas, it is okay to take over-the-counter products such as Gas-X®.
- To avoid constipation, drink lots of fluids and eat foods high in fiber, such as apples and broccoli. If constipation continues to be a problem, use commercial stool softeners as needed.

Survival Q #5: If I become sick, which over-the-counter cold and flu medicines can I take?

- Look for products that contain acetaminophen, while avoiding products that contain ibuprofen or aspirin.
- If you have high blood pressure, try to avoid using products that contain pseudoephedrine or phenylephrine, which can slightly narrow the blood vessels and increase blood pressure. Consistent use of decongestants is not recommended during pregnancy for anyone.
- You can use over-the-counter cough medications such as Mucinex® and Robitussin®, without any known increased pregnancy risks.
- And you know what they say about an ounce of prevention...! Get a flu shot!
 - In the United States the flu shot has been given to pregnant women since the 1960s. Studies of thousands of women who have received the flu shot just before or during pregnancy have found no increased risk for birth defects or other problems.
 - The flu vaccine given by injection is recommended for all women planning to become pregnant or who already are pregnant (whether in their first, second, or third trimester) during the flu season.

If you have any questions, don't forget that you can call, email, or live chat with a MotherToBaby expert. And to make it even less stressful for you, you can now just send us a text with your question! We're trying to make it as easy as possible for you, Mom - you have enough to worry about! **Just text us at 855-999-3525.** We are here to help. Happy holidays and may you have a zen-like season! ☐



Neely Cessac is a Teratogen Information Counselor at the North Texas affiliate of MotherToBaby. She has been with the service for over two years and loves working with pregnant moms!

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By Dr. Sarah Običan, OBGYN, MotherToBaby

It's noon. I just ran into my academic office to call back a few patients in between a packed schedule. I just spent my morning seeing 17 patients and gauging by my afternoon schedule, the day was not going to get much easier. I was new at my job as an OBGYN having joined the academic practice where I completed my residency. It was a busy practice, but I loved my job and I loved my patients. As I sat in my chair, I finally felt my feet again and realized they were hurting, but before I could kick off my heels, my cell phone rang. It was my IVF doctor.

By this time, my husband and I had been dealing with infertility for over a year and had decided to have tests done by one of my medical partners. She phoned to give me results of my testing.... As it turns out a hormone, called anti-mullerian, was low. It may have been in part a cause to our inability to conceive naturally. I could not muster a response to her. Instead – silence. A whole minute must have passed, after which all I said to my doctor was “I must be

one of the 10%.”

I was not alone.

According to a CDC survey from 2006 – 2010, more than ten percent of couples trying to conceive have infertility. It’s a medical problem that impacts entire families, marriages and your work. The journey is long, time intensive, costly, emotionally heavy with so much joy and pain all wrapped up into a six week treatment cycle. It’s not for the faint of heart.

Since the first IVF conceived child was born in 1978, things have changed. In fact, even in the 3 year period and 11 cycles I went through in my own life things have changed. We are learning so much about new technologies and improving outcomes. We’re able to offer patients better risk assessments and counseling today.

Is IVF safe?

All things considered, assisted reproductive technologies (ART) are safe and the studies are proving it. Multiple studies have supported that IVF does not increase your risk of breast cancer or cancer overall. However, pregnancy conceived by ART are at increased risk of multiples, including monozygotic twins (when twins share the same placenta). These types of twins do carry increased risk of birth defects, preterm labor and delivery.

On average, women necessitating these medical interventions tend to be older and may have additional medical issues, all which impact the pregnancy.

For the baby, while we do know any risk of birth defects is low, some studies do show a small increased risk of overall birth defects, specifically heart defects, in IVF-conceived children, including a 2012 Australian study that looked at more than 6000 children conceived by using ART. It’s hard to completely understand if the risk is due to the interventions itself or due to any underlying issues the higher-risk patients being studied carry.

The formation of a baby’s heart is an exceptionally complex biological process. Because of this, it’s not surprising that, of all birth defects, heart defects tend to be most common. Similarly, the infertile population and those who undergo ART have an increased risk of having a baby with a heart defect, specifically defects affecting the ventricular and atrial septum, as well as a complex birth defect called Tetralogy of Fallot. All women with an ART conceived pregnancy should have a detailed ultrasound between 18-22 weeks to evaluate fetal anatomy and a fetal echocardiogram to evaluate for heart defects. Folic acid supplementation is also important.

Drawbacks to the studies

Despite 60,000 infants being born in the U.S. using ART, the vast majority of studies investigating the associated risk with ART have studied a population which conceived and delivered outside of the U.S. Other limitations of the early studies include looking at relatively small numbers of patients. As a doctor, I hope more studies will be conducted examining U.S. pregnancies involving ART since we have such a diverse population. Studying IVF among our differing ethnicities, age and socioeconomic backgrounds will help doctors make even better recommendations to the couples trying exhaustively to start their families.

For now, just breathe...

I did. Chin up, support system intact, I kept forging ahead. With each failed IVF attempt along the way, my heart may have broken a little, but, at least the absolute risk of heart defects in the potential pregnancy remained small. Three years of trying and my son finally arrived. My heart is now full.



Sarah G. Obican, MD, is an OBGYN, Maternal Fetal Medicine specialist at the University of South Florida. She currently serves on MotherToBaby’s Board of Directors. She’s also a councilmember of

MotherToBaby's sister society, the Teratology Society.

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