

Lyme Disease

Information for women who have Lyme disease during pregnancy or breastfeeding

The information provided below is for readers based in the United States of America. Readers outside of the United States of America should seek the information from local sources.

What is Lyme disease?

Lyme disease is an infection that is caused by a family of bacteria called *Borrelia*. In the United States, the particular species causing Lyme disease is called *Borrelia burgdorferi*. In Europe and Asia, additional species (*Borrelia afzelii* and *Borrelia garinii*) also cause Lyme disease, but in all cases, the [bacterial infection](#) comes through a bite from a tick (a type of tick called *ixodid*). The ticks acquire the bacteria from small mammals such as mice and chipmunks, and also from birds. The disease also is connected with deer, which are needed to support the tick life cycle.

Lyme disease is a condition that develops in stages. If not recognized early, during the first stage, a particular rash around the tick attachment site, often with flu-like symptoms, the condition can enter a more serious, second stage, involving multiple organs and the nervous system, that can last for weeks to months and thus run throughout the course of pregnancy even if the tick bite occurred before pregnancy began. Patients can also have a third stage, characterized by [arthritis](#) and sometimes problems in muscle nerve, and skin. These later symptoms are not due to a persistent bacterial infection, but rather are thought to result from damage that the infection caused during the early stages. Consequently, it is very important to recognize Lyme disease early.

The presence of the particular ticks that carry the *Borrelia* bacteria is more likely from the spring through autumn and in particular regions (see below).

How common is Lyme disease during pregnancy?

Lyme disease has been on the rise in developed countries, likely because an increasing number of people are spending leisure time outside. Since the early 1990s, the number of cases reported in the United States has increased from 10,000 to 30,000 per year, but it is estimated that the disease actually occurs in ten times the reported number of people, which is to say in 300,000 people, annually in the

US alone. The disease was named for Lyme, Connecticut, where it was discovered in the 1970s. Although most of the US cases occur in New England and in states of the mid-Atlantic region, some cases occur in Wisconsin and Minnesota, and more rarely in Oregon and northern California. Although children have typically been infected the most, middle-aged adults are being affected increasingly, as are retired people, probably because they are spending more time outside, whether hiking, walking dogs, or doing other activities. Often having young children who play outside, or taking walks or jogs outside during pregnancy, pregnant women are certainly at risk too, if they live in regions where Lyme disease is common.

How is Lyme disease diagnosed?

Lyme disease is diagnosed based on your history of possible exposure to ticks in a region where ticks carry *Borellia* bacteria, findings on your physical examination, and laboratory tests. Physical exam findings that are diagnostic include a particular rash called *erythema migrans* (see next section) and the finding of an actual tick in the center of the rash. Laboratory testing that can confirm the diagnosis consists of what's called serology. In the case of Lyme disease, serology includes one test called ELISA and another called a Western blot. ELISA is performed first; if it comes out as a yes or a maybe, doctors proceed to a Western blot, which can confirm a diagnosis for Lyme disease and also reveal how many weeks or months you are into the infection.

Does Lyme disease cause problems during pregnancy?

Stage I of Lyme disease begins with a hallmark rash called *erythema migrans* 3-32 days after infection. This shows up as a red area surrounding a lighter area centered on the tick bite. Classically, it has the look of a target with a bulls eye, but there is a great deal of variation, not only because skin color varies among people, but the amount of reaction in the skin also varies; thus two people with the same skin tone can have different amounts of redness. Flu-like symptoms, such as [headache](#), fatigue, muscle, and joint pain can also be part of Lyme disease stage 1, but erythema migrans is what doctors use to determine whether you may have Lyme disease and require treatment. The reason for this is that you can get bitten by a tick and not get infected with the bacteria. If you are outside and notice a tick on you and can remove it, this is often enough to prevent the infection. Furthermore, if you return home after outdoor activity and find a tick on your body (typically they attack on the feet, ankles, or leg, or on the groin, waist, back, or armpit, but it can happen on the arms or anywhere else), removing it can prevent infection, if the tick has not been there for a long time. Since stage 1 can take up to 32 days to begin, if you remove a tick, you should make an appointment to see your doctor. If you don't have any symptoms, the plan will be an observation of whether erythema migrans appears. If this does happen,

you then would begin treatment with antibiotic medication.

Erythema migrans can last up to 3-4 weeks before resolving, but if not recognized and treated with antibiotics, then weeks to months later, you can develop stage 2, which can show up with problems in the heart, trouble with cranial nerves (the nerves that control various functions in the head and neck, including the eyes, hearing and balance, sensation, and control of face muscles). There also can be [meningitis](#) (inflammation of the connective tissue layers that surround the brain). Finally, after months to years, stage 3 can begin, with the main symptom being arthritis, but there also can be muscular and nervous system effects. It's important to appreciate that these later effects of Lyme disease are not the result of the bacterial infection persisting for months to years, but rather they are complications resulting from damage occurring earlier in the course of the disease. Consequently, there is no good rationale for antibiotic treatment to be given during the many months that these higher stage symptoms persist.

Does Lyme disease during pregnancy cause problems for the baby?

Studies have not demonstrated actual infection of the developing baby by *Borrelia* bacteria, but some cases have been reported of negative outcomes on pregnancies in which the mother has Lyme disease. These poor outcomes have included [spontaneous abortion](#) (miscarriage) in particular, but also stillbirth, premature delivery, undersize babies, and various other problems. However, such studies are based on just a small number of cases, and research is ongoing.

What to consider about taking medications when you are pregnant or breastfeeding:

- The risks to yourself and your baby if you do not treat the Lyme disease
- The risks and benefits of each medication you use when you are pregnant
- The risks and benefits of each medication you use when you are breastfeeding

What should I know about using medication to treat Lyme disease during pregnancy?

In non-pregnant adults, the treatment of choice for Lyme disease is [doxycycline](#), an antibiotic that can eliminate the *Borrelia* infection during the first stage of Lyme disease, thereby preventing the later stages. Doxycycline cannot be given during pregnancy, nor during lactation, however, as it can stain developing teeth, but there are other antibiotic regimens that are safe, and just as effective, the main ones being [amoxicillin](#) and cefuroxime.

Who should NOT stop taking medication for Lyme disease during pregnancy?

If you have Lyme disease you must take the antibiotic treatment that is prescribed to you, and it is very important that you complete the entire treatment in the early stages.

What should I know about choosing a medication for my Lyme disease during pregnancy?

As noted above, you should not take doxycycline while pregnant, but your doctor can prescribe an effective antibiotic that also is safe, such as amoxicillin, or cefuroxime.

You may find Pregistrys expert reports about the individual medications used to treat Lyme disease [here](#). Additional information can also be found in the sources listed at the end of this report.

What should I know about taking a medication for my Lyme disease when I am breastfeeding?

You should not take doxycycline while breastfeeding, but your doctor can prescribe an effective antibiotic that also is safe, such as amoxicillin, or cefuroxime.

What alternative therapies besides medications can I use to treat my Lyme disease during pregnancy?

When an antibiotic is indicated to kill off the infection, during the first stage, there is no alternative.

What can I do for myself and my baby when I have Lyme disease during pregnancy?

First of all, try to prevent Lyme disease by wearing socks and long pants, and being vigilant about avoiding ticks. If you do spend time outside, especially in wooded areas and on grass, also be vigilant about checking your body for ticks when you return home. If you find a tick or suspect that you might have had a tick in your skin, schedule an appointment with your doctor. If advised to return for an appointment later, do show up, as your doctor will be looking for the hallmark rash. If you are diagnosed with Lyme disease, follow all instructions, taking the full course of your antibiotic treatment.

Resources for Lyme disease in pregnancy:

For more information about **Lyme Disease** during and after pregnancy, contact <http://www.womenshealth.gov/> (800-994-9662 [TDD: 888-220-5446]) or check the following links:

- CDC: [Pregnancy and Lyme Disease Factsheet](#)
- March of Dimes: [Lyme Disease and Pregnancy](#)

General information

It is very common for women to worry about having a miscarriage or giving birth to a child with a birth defect while they are pregnant. Many decisions that women make about their health during pregnancy are made with these concerns in mind.

For many women these concerns are very real. As many as 1 in 5 pregnancies end in a miscarriage, and 1 in 33 babies are born with a birth defect. These rates are considered the background population risk, which means they do not take into consideration anything about the health of the mom, the medications she is taking, or the family history of the mom or the baby's dad. A number of different things can increase these risks, including taking certain medications during pregnancy.

It is known that most medications, including over-the-counter medications, taken during pregnancy do get passed on to the baby. Fortunately, most medicines are not harmful to the baby and can be safely taken during pregnancy. But there are some that are known to be harmful to a baby's normal development and growth, especially when they are taken during certain times of the pregnancy. Because of this, it is important to talk with your doctor or midwife about any medications you are taking, ideally before you even try to get pregnant.

If a doctor other than the one caring for your pregnancy recommends that you start a new medicine while you are pregnant, it is important that you let them know you are pregnant.

If you do need to take a new medication while pregnant, it is important to discuss the possible risks the medicine may pose on your pregnancy with your doctor or midwife. They can help you understand the benefits and the risks of taking the medicine.

Ultimately, the decision to start, stop, or change medications during pregnancy is up to you to make, along with input from your doctor or midwife. If you do take medications during pregnancy, be sure to keep track of all the medications you are taking.