



HEALTH

Mothers May Pass Lyme Disease to Children in the Womb

Doctors treating Lyme see evidence that pregnant women can transmit the disease to their children. But public health experts say the science isn't so clear

By Marianne Lavelle on September 22, 2014

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Justine Donnelly's medical journey began the day that her mother's 30-year quest to solve her own health mystery ended.

The 26-year-old Pilates instructor in Charlottesville, Va., who had all her life suffered from poor memory and anxiety, received a text message from her mother, who had just been diagnosed with Lyme disease, suggesting that she be tested for the disease.

"That was definitely bizarre," Donnelly recalls. But it turned out to be wise advice.

She did, indeed, test positive for the tick-borne bacteria that causes the most prevalent vector-transmitted disease in the United States. But Donnelly's doctor believes she did not contract Lyme in the usual way, through a tick bite. Instead, he suspects the disease was passed to her in the womb from her mother, who lived with undiagnosed Lyme disease for three decades.

It's a controversial claim: While U.S. public health authorities recommend that pregnant women who have Lyme disease be treated with antibiotics, they do not

believe that science has demonstrated that the bacteria can be transmitted to a developing fetus. And yet a number of health practitioners who specialize in Lyme disease say that they've seen evidence that gestational transmission is occurring.

Donnelly said that for long as she can remember, her mother, now in her 60s, had a gamut of symptoms, including chronic fatigue, sore muscles and depression. Before Donnelly was born in 1988, her mother had become acutely ill with what doctors thought at the time was viral meningitis. She eventually resumed daily activities but was never completely well.

"She went on a crazy, long journey to find out what was causing her symptoms," Donnelly said. In 2012, Norton Fishman, a Maryland physician who focuses on tick-borne diseases, confirmed that Donnelly's mother had Lyme. After reconstructing the long history of her mother's health problems, he concluded her daughter should be tested, too.

Few recent studies have investigated the issue of gestational infection by Lyme disease – a crucial gap as this difficult-to-diagnose disease spreads and more families like Donnelly's learn that their lives have been transformed by a long-hidden disease.

Scientists have long suspected, however, that the spiral-shaped Lyme bacteria, *Borrelia burgoferi*, can be passed gestationally, since other "spirochetes" – most notably the syphilis bacteria – are known to be transmitted in the womb, causing a range of birth defects.

But the U.S. Centers for Disease Control (CDC), in its [guidance on pregnancy and Lyme](#), cites a [2006 review](#) of the scientific literature that concluded that no specific pattern of teratogenicity, or birth defects, has been shown in Lyme disease.

Transmission of the disease from mother to baby is a different issue. And the research noted that the placenta can become infected and cases of miscarriage have resulted from Lyme.

The CDC's advice is that anyone with a known Lyme disease infection, including pregnant women, should be treated with antibiotics. "While there's no evidence to

link Lyme disease in pregnant women to birth defects, there is evidence that untreated Lyme disease can lead to miscarriage," C. Ben Beard, chief of the bacterial diseases branch of the CDC's division of vector-borne diseases, said in an email.

Fishman argues the reason evidence of gestational transmission hasn't been found is that sufficient studies haven't been done.

"As clinicians, we deal one-on-one with patients, and when we take the stories, the evidence is there," he said. "For some patients, they couldn't have gotten it any other way, and it makes sense that it could be transferred over nine months of gestation.

"It is a bit of tragedy for a child to find that they've had Lyme in their infancy, and young childhood – in fact, that they've been carrying the disease from birth," Fishman said.

Ruth Kriz, a Washington, D.C.-based nurse practitioner who specializes in a painful bladder syndrome, interstitial cystitis, which can be caused by tick-borne infections, including Lyme, says that she, too, has seen cases of Lyme that have been passed mother-to-child. She also is not surprised that studies have been inconclusive. Kriz noted that when a woman is first infected with Lyme, her immune system may mount a robust response that protects the fetus if she becomes pregnant. But over time, as the disease takes its toll, her immune system weakens.

"I've seen women who were infected long before they were pregnant and I've checked their children – the first-born is in good shape, but the third-born is badly infected," Kriz said. "I've seen it in several families."

Donnelly said it will never be possible to prove with certainty that she contracted Lyme in utero. "I could have gotten it as a little girl running around on the family farm," she said. But for her, the important thing is that both she and her mother are feeling better after antibiotic treatment and other steps to improve their immune systems.

The experience, she says, was a "powerful" one.

"All of the sudden, all my little quirks – the things that made me, me – those were the disease," she said. "It wasn't typical Lyme symptoms, it was little things, like severe anxiety, irrational fears, a poor memory. I was bad with directions. I had a foggy brain. I thought everyone deals with these things."

She knows that Lyme changed the course of her life. "Certainly, having a foggy brain in middle school and high school does not do a lot for your self-confidence," she said. "It's hard to feel confident in yourself when you can't rely on your brain to do what you want it to do. It's hard to make the commitment to decide what kind of career you want, or anything else."

Today Donnelly, who is married, is exploring starting a family. She feels better able to handle it now. "I sleep through the night. I have a stable mood," said Donnelly. "I have my brain back."

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