

Although there are controversies in Lyme disease and differing viewpoints among this Working Group, I do believe that all sides would agree that early diagnosis and treatment of tick-borne disease is a good thing. Yet, many factors stand in the way of prompt diagnosis. Here are two of them.

## Single dose of Doxycycline Will Prevent Lyme Disease?



My first point concerns the dubious belief that a single dose of the antibiotic doxycycline given within 72 hours of a known tick bite will prevent Lyme disease. This is based on exactly *one* study by Nadelman, published in 2001. In it, fewer people developed an EM rash if given a single dose of doxycycline than if given a placebo. Anyone who didn't develop an EM was presumed not to have Lyme disease (though we know that many Lyme patients never see a rash). Furthermore, they didn't look for co-infections, and the observation period was a scant six weeks. So, nobody actually knows whether any of these people got sick later or not.

Despite the glaring weaknesses of that study, the one-dose doxy recommendation was enshrined in the IDSA's 2006 Lyme guidelines ... and further replicated in the *Journal of Emergency Medicine*, as recently as 2017. It's also repeated on the CDC website.

I have heard from many people who were treated with a single dose of doxy and then went on to develop symptoms of Lyme and coinfections. Clearly, this unfortunate recommendation delays appropriate treatment—to the detriment of patients. It should be abolished.

## No Evidence Of A Safe Tick Attachment Time



My second point concerns tick attachment times. Many patients report that they went to their doctor after a known tick bite and were denied treatment because they “couldn’t possibly have Lyme disease” because the tick hadn’t been attached at least 24, or 36, or 48, or 72 hours. (Take your pick. We’ve heard them all.)

There is no evidence of a “safe” attachment time. Although the CDC website maintains that it usually takes more than 36 hours for the tick to transmit Lyme, even its own recent

publications suggests otherwise.

The March 2018 edition of *Ticks and Tickborne Diseases* includes an article entitled “Pathogen Transmission in Relation to Duration of Attachment by Ixodes Scapularis Ticks,” by L. Eisen. In it, the author discusses specific circumstances (such as re-attachment of previously partially fed infected ticks) where Lyme might be transmitted in less than 24 hours.

The issue is so much larger than just Lyme, however. Powassan virus can be transmitted in as little as 15 minutes. For many other tick-borne diseases, required transmission time is still unknown.

When people with known tick bites are denied treatment because the tick supposedly was not attached long enough, they often end up desperately sick.

## References:

1. L. Eisen, “Pathogen Transmission in Relation to Duration of Attachment by Ixodes Scapularis Ticks,” *Ticks and Tick-Borne Diseases*, vol. 9, no. 3, 2018, pp. 535-542.
2. J. Piesman, G.O. Maupin, E.G. Campos, and C.M. Happ, “Duration of Adult Female Ixodes Dammini Attachment and Transmission of Borrelia

Burgdorferi, with Description of a Needle Aspiration Isolation Method," J Infect Dis., vol. 163, no. 4, 1991, pp. 895-897.

3. C.M. Shih and A. Spielman, "Accelerated Transmission of Lyme Disease Spirochetes by Partially Fed Vector Ticks," J Clin. Microbiol., vol. 31, no. 11, 1993, pp. 2878-2881.

Editor's note: Any medical information included is based on a personal experience. For questions or concerns regarding health, please consult a doctor or medical professional.