

Ticks 101

We look forward to spring for months and soak in its pleasures when it arrives. But in the process we tend to overlook some of its less pleasant realities. Like ticks, for example. Nobody longs for the tick season during the cold, dark days of February. But it comes nonetheless, getting underway with the arrival of consistently warm weather in April. By May it's in full swing. It's hard to live on Long Island and not be aware of ticks. Every year we hear stories about Lyme disease and the region's high tick population. They've become Public Enemy #1 and, unfortunately, a common reason for avoiding parks and natural areas and keeping children indoors. While the tick situation is certainly bad in places and Lyme disease is a serious concern, the risks have been overstated to some extent. With a basic understanding of ticks and how to protect yourself, there's no reason you can't continue to enjoy the region's wonderful natural resources.

Let's start with a quick roll call. While there are more than 800 species of ticks in the world and 80 in the United States, there are only three species to be concerned about here on Long Island: the black-legged tick (or deer tick), the American dog tick, and the lonestar tick (see image below). These are the ticks that are most commonly found on humans and all three can transmit disease-causing organisms. The one that deserves the most attention is the black-legged tick because it's the one that can carry the bacteria that causes Lyme Disease. With our burgeoning deer population it's also the most common tick on Long Island. (I often hear people mistakenly refer to deer ticks as those really little ones. As I'll explain below, while juvenile deer ticks are indeed small, there are also full-size adult deer ticks.)



A harmful trio (from left): black-legged tick (or deer tick), lone star tick and dog tick.

Ticks are not insects, but arthropods more closely related to spiders and mites. Like many of their relatives they go through a four-stage life-cycle: egg, larva, nymph and adult. Eggs are generally laid in May and hatch in late July and August. The emerging 6-legged larva, which is just about undetectable to the naked eye, is disease free (it has to acquire the disease

pathogen from feeding) and feeds almost exclusively on small mammals, such as mice or chipmunks. After obtaining a single blood meal, the larva falls to the ground to molt into an 8-legged nymph, which emerges the following May or June.

The nymph, which is about the size of the tip of a ballpoint pen, again feeds once before dropping to the ground and molting into an adult. It may feed on human hosts and can carry disease pathogens (depending on whether the bacteria was acquired from the first host during feeding). The adult, which is about the size of a watermelon seed, emerges in the fall and is active for several months before going dormant during the winter (they can, however, become active on warm winter days). It then emerges again in early to mid April to seek its final blood meal. After engorging to the size of a small grape, the females will fall to the ground and lay several thousand eggs to start the multi-year cycle over again before dying.

The key to avoiding getting a disease from a tick is detection and removal. Detecting ticks is easier if you understand how they get on you. They don't fly or jump, but rather hang onto your leg as you brush past (although if you sit in or near an infested location long enough, some ticks will actually seek you out). Generally speaking, you have to come in contact with them. Ticks usually reach their hosts by questing: they climb to the tip of a blade of grass or plant and wait. When a host comes by they hang on and then find a suitable place to feed.



Importantly, ticks require moist areas with leaf litter or other cover where they can maintain their water content. Even when questing, they can't stay out in the open air too long and must retreat to a damp place. For this reason, they're usually not found on dry, open lawns or on sandy or dirt trails. So it's important to avoid damp places with lots of high grass or shrubs. Stick to the middle of trails and open, sunny areas when possible.

When we do pick up ticks, it's usually on our shoes or lower legs. Then they crawl up and generally find a place with some compression (waistline, groin, armpits, back of the knee) or thin skin (earlobe, nape of neck). This is why when you go out in the woods you're encouraged to wear light colored clothing and to tuck your pants into your socks. The socks force the ticks to stay on the outside of your clothes. The light colored clothing makes the brown or reddish ticks easier to spot and brush off.

The most dangerous time of the year is June and July when the deer tick nymphs reach their peak. Despite the fact that only one in five nymphs carries the Lyme disease bacteria (compared with half of adult ticks), scientists report that almost all Lyme disease cases come from nymphs. And the reason is simple: they're much harder to see so they often go undetected. They're hard to see, but not impossible. If you're wearing white socks and khaki pants, for example, you'll be able to see them crawling on you. If there are a few, it'll look like somebody shook some pepper on your leg.

And even if you're being careful, don't expect to stop all of them before they get to your skin. You're inevitably going to miss some. But just get into the routine of checking your body and

your children at the end of the day. My children are accustomed to regular tick checks before their baths in the summer.

If a tick does get through your defenses, the important thing to understand is that you have plenty of time to remove it; even it's already embedded in your skin. A tick must be feeding for many hours before it transmits any dangerous pathogens into your body. Importantly, deer ticks will not transmit the Lyme disease agent into your body for at least 24 hours. So if you have a tick is on you, don't panic; you have a window of opportunity to get it off before you have to worry about an infectious disease.

Finally, while I don't use them myself (and don't have any Lyme disease in my family, knock on wood), you may also want to consider applying repellents. Those that contain DEET are said to be the most effective, but not foolproof. You can also treat your clothes and shoes with Pemethrin, which is a synthetic chemical that kills ticks on contact. The University of Rhode Island maintains an excellent website at tickencounter.org with useful information about these and other safety precautions.

So get out there! Be mindful of ticks and take precautions to protect yourself from disease, but don't let them keep you from enjoying nature at this wonderful time of year.

Additional information can be found at the following sites:

[New York Department of Health](#)

[Cornell Cooperative Extension](#)

[Stony Brook University](#)

- Enrico Nardone