

Tick Update: More Ticks, More Diseases

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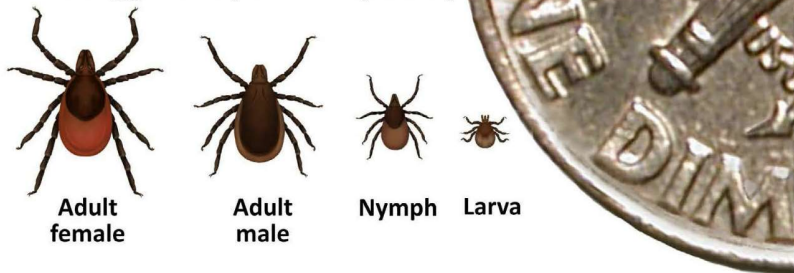
When I was a child, we encountered only the American Dog Tick (*Dermacentor variabilis*), which we called a Wood Tick. In Beverly Shores today we still find those, as well as two other kinds: the Blacklegged or Deer Tick and the Lone Star Tick. Each type of tick can carry different diseases and transmit them to humans and their pets through their bite. The connection between ticks and the white-tailed deer is that the deer are Ubers for the ticks, transporting them from the woods to our yards.

Ticks have four life stages: egg, six-legged larva, eight-legged nymph, and adult, which complete in about 2 years. They require a blood meal to develop to each next stage. It is while they are feeding that they transmit disease. In the U.S., tick-borne disease rose by 25% from 2011 to 2019.

The CDC illustration below shows the life stages and comparative sizes of all three ticks.

Ticks That Commonly Bite Humans

Blacklegged tick (*Ixodes scapularis*)



Lone Star Tick (*Amblyomma americanum*)



American Dog Tick (*Dermacentor variabilis*)



Blacklegged (Deer) Tick (*Ixodes scapularis*)

In Indiana, Blacklegged nymphs are most active during spring and summer and adults are most active during the fall and early spring. However, adult ticks may be active any time winter temperatures are above freezing. Both nymphs and adults can feed on humans and are capable of transmitting disease.

Lyme disease is the best known of these diseases. From 1999 to 2019, confirmed cases of Lyme disease in the U.S. rose by 44%. According to the Indiana Dept. of Health, cases in Indiana rose over 300% between 2012 and 2021. (See Figure 1) Although Lyme disease occurs in all areas of Indiana, most cases occur here, in the northwest part of the state.

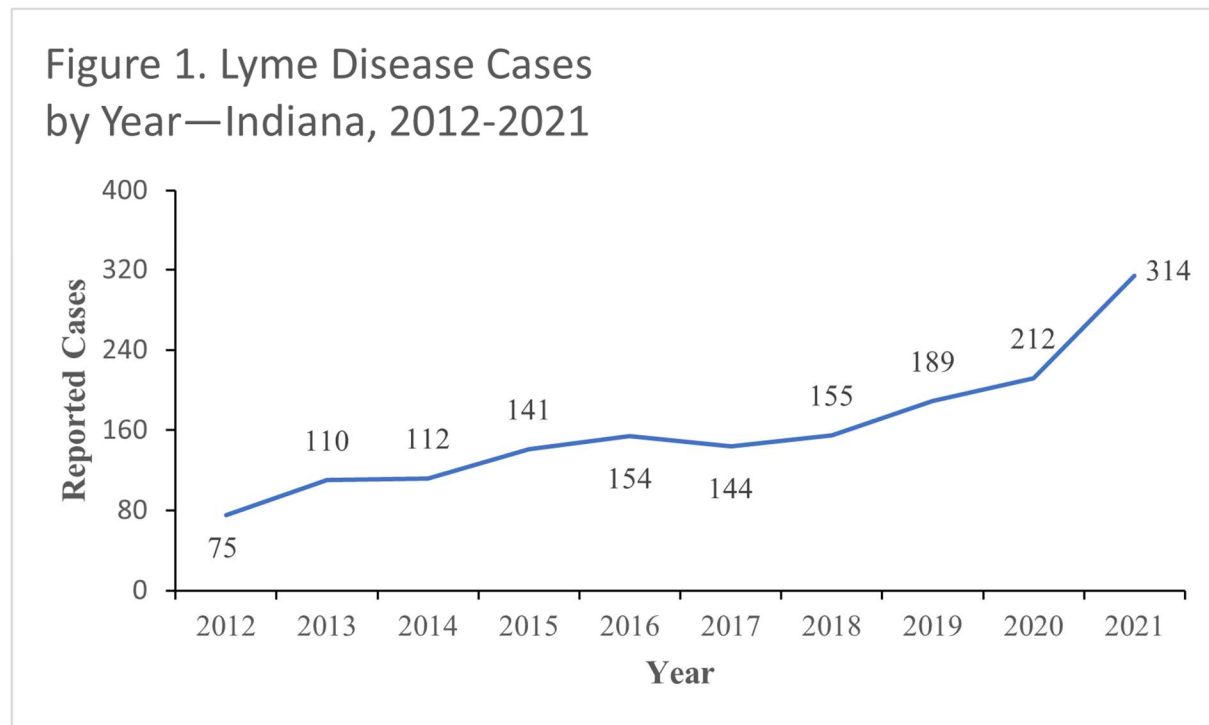


Image source: Indiana Dept. of Health

Lyme disease is the best-known but not the only Blacklegged Tick disease. CDC is sounding alarms about Babesiosis, a parasitic tickborne disease. Reports of this disease are rising rapidly in the northeast U.S. but have also been reported in Minnesota and Wisconsin. Babesiosis tends to be more severe than Lyme disease, and it can be fatal in the immune-compromised and those without a spleen. In addition, there is Powassan virus neuroinvasive disease (encephalitis and/or meningitis). There has been only 1 case diagnosed in Indiana, but it is particularly dangerous because there is no treatment.

Lone Star Tick (*Amblyomma americanum*)

The Lone Star Tick is a dangerous newcomer. smaller than the American Dog Tick and faster moving. These ticks are known to be aggressive feeders and will pursue many different species of animals for a blood meal. Most Lone Star tick activity occurs in spring and summer.

A Lone Star tick bite can cause Alpha-gal syndrome (AGS), which is a serious, potentially life-threatening allergic reaction. Symptoms occur after people who have been bitten eat red meat or are exposed to other products containing alpha-gal. A common symptom is hives or an itchy rash, but AGS reactions can be quite varied and differ from person to person. They can range from mild to life-threatening: Anaphylaxis, a severe reaction, may require emergency medical care. Even with milder symptoms, healthcare providers typically recommend patients not eat any mammalian meat: beef, pork, lamb, venison, etc. They may also suggest avoiding other foods and ingredients which contain alpha-gal, e.g.: cow's milk, milk-products, and gelatin.

American Dog Tick (*Dermacentor variabilis*)

The American Dog Tick is the most common tick in Indiana. Adult ticks most often feed on dogs and other large mammals, including humans. Larvae and nymphs usually feed on small mammals, such as rodents. Most American dog tick activity occurs in spring and summer. The only disease that may be acquired from this tick here is Rocky Mountain Spotted Fever (RMSF). There were only 16 cases of RMSF in Indiana in 2021.

Preventing Tick Bites

As they say, "An ounce of prevention..." Ticks don't fly or jump but may wait in a position known as "questing". While questing, ticks hold onto leaves and grass by their third and fourth pair of legs. They hold the first pair of legs outstretched, waiting to climb on to the host. This is what happens when a host brushes the spot where a tick is waiting. Ticks can live in grassy, brushy, or wooded areas and on animals. They prefer wooded and brushy areas with high grass and leaf litter.

- **Avoid encountering ticks:**
 - Hike in the center of trails
 - Avoid brushing up against vegetation
 - Avoid sitting on logs
 - Consult your veterinarian about tick protection for your pets
 - Take precautions in areas of your property where deer loiter
- **Dress appropriately** by wearing:
 - Light-colored clothing (so you can see them)
 - Long-sleeved shirts, tucked into pants
 - Socks and closed toe shoes
 - Long pants with legs tucked into socks
- **Treat clothing and gear** with products containing 0.5% permethrin. Permethrin can be used to treat boots, clothing and camping gear and remains protective through several washings. You can also buy permethrin-treated clothing and gear from companies such as L.L. Bean and REI.
- **Use insect repellents** containing DEET, picaridin, IR3535, Oil of Lemon Eucalyptus (OLE), para-menthane-diol (PMD), or 2-undecanone. The EPA has a search tool (<https://www.epa.gov/insect-repellents/find-repellent-right-you>) to help you select a repellent. Always follow the safety instructions when using these products.

- **Check for ticks often on:**
 - All joints: behind the knees, between fingers and toes, and on underarms
 - Other areas where ticks are commonly found: belly button, neck, hairline, top of the head, and in and behind the ears
 - Areas of pressure points, including anywhere that clothing presses tightly on the skin
 - Visually check entire body, and run fingers gently over skin
- **Check gear and pets** for ticks
- **Shower** after all outdoor activities are over for the day
- **Tumble dry clothes in a dryer on high heat** for 20-30 minutes to kill ticks on dry clothing

What should you do if you find a tick?

- Remove the tick using tweezers: grasp it close to the skin and then pull outward with steady and even pressure. Pull slowly and steadily without twisting until it lets go.
- Save the tick. Place it in a plastic container or bag so it can be tested for disease, if needed.
- Wash the bite area well with soap and water and put an antiseptic lotion or cream on the site.
- Call your healthcare provider to find out about follow-up care and testing of the tick for disease bacteria.
- You can also send the tick to be tested by a lab such TICKCHECK