

Lyme disease

Lyme disease is an illness caused by a type of bacteria (*Borrelia burgdorferi*) that's transmitted through certain ticks. Both animals (dogs, cats, and horses) and people can become infected with these bacteria. A small percentage (5% to 10%) of infected dogs go on to develop signs of illness—which can be quite severe. Little is known about whether infected cats become ill.

Lyme disease can be difficult to diagnose, so it's best to prevent it altogether by avoiding tick bites, promptly removing attached ticks, and, in high-risk areas, vaccinating dogs against the disease.

What are the signs of Lyme disease in dogs?

Most dogs infected with *Borellia* bacteria will appear healthy, with no signs at all. This is different from infected people, about 90% of whom will become ill.

In dogs that do become ill, signs of Lyme disease typically first show up 2-5 months after the dogs were first infected. By this time, the disease can be widespread throughout the body.

Illness in dogs can take many forms. These are the most common signs:

- Intermittent limping or lameness that shifts from leg to leg
- Fever
- Loss of appetite
- Decreased activity
- Swollen lymph nodes
- Painful, swollen joints

Some dogs with Lyme disease (about 1% to 5% of infected dogs) also may develop a type of kidney disease called Lyme nephritis, which can lead to edema, weight loss, vomiting, diarrhea, and sometimes death.

How is Lyme disease spread?

Animals and people can become infected when they're bitten by blacklegged ticks that harbor the disease-causing bacteria. These ticks can be found in forests and grassy, wooded, or marshy areas near bodies of water.

Immature blacklegged ticks (larva and nymph life stages) become infected with *Borrelia* bacteria when they feed on the blood of infected wildlife like rodents, and the ticks stay infected through their next life stages. Infected nymphs or adult female ticks can then spread the bacteria when they take their next blood meal, provided they feed on their animal or human "host" for at least 24-48 hours. This means there's a window of opportunity to remove ticks, before they can spread disease. However, depending on their life stage, ticks may not be easily seen on pets, for although adult ticks are about the size of sesame seed—and even bigger when full of blood, nymphs are smaller (about the size of a poppy seed).

People or animals may be bitten by blacklegged ticks during outdoor activities such as hiking or camping, or even while spending time in their own backyards. The ticks are most active from early spring through fall, meaning the chance of a tick bite is highest during this period.

Blacklegged ticks generally can be found in forested regions across the eastern U.S. and in Pacific Coast states, although areas considered at higher risk of Lyme disease are predicted to expand further southward and westward. The CDC maintains [a map](#) detailing where human cases of Lyme disease have been reported over the years. These areas can be presumed to be high-risk areas for dogs as well.

Lyme disease cannot be spread directly among dogs and people. However, because people often share the same environments with their dogs, they can have similar risks of tick exposure. If a person or dog in your household has been diagnosed with Lyme disease, it's a good idea to consult your veterinarian or physician as to whether other housemates should be checked for the disease, too.

How is Lyme disease diagnosed and treated?

Because other diseases—including other tick-borne diseases like anaplasmosis—can mimic Lyme disease, and because most dogs with *Borrelia* infections do not become ill, diagnosing Lyme disease can be a little tricky. Blood tests are available that quickly show whether a dog has been exposed to *Borrelia* bacteria by measuring antibodies against the bacteria. However, although a positive test result is necessary to rule Lyme disease in as a possible diagnosis, a positive result does not necessarily mean that it's Lyme disease that is making the dog sick.

If your dog is ill, your veterinarian will consider several factors in arriving at a final diagnosis:

- The animal's history of tick exposure and the signs they're showing
- Results of laboratory tests to support the Lyme disease diagnosis and rule out the presence of other diseases
- The dog's response to treatment

The standard treatment for dogs sick from Lyme disease is a 30-day course of antibiotics. A longer course may be necessary for some dogs, such as those with Lyme nephritis. Antibiotic therapy generally is not recommended for *Borrelia*-infected dogs without signs of illness, nor is it recommended to prevent Lyme disease in dogs with tick bites.

Dogs with Lyme nephritis require additional treatments to manage problems associated with kidney impairment.

How can I protect my dog against Lyme disease?

Thousands of cases of Lyme disease have been reported each year in humans and animals across the U.S. and around the world. By knowing about Lyme disease and how to prevent it, you can help keep everyone in your household safe.

The best way to protect dogs against Lyme disease is to take preventive measures to reduce the chance of tick bites, and of catching the disease if bitten.

- [Use reliable tick-preventive products](#) as recommended by your veterinarian. Your veterinarian can help you select the product that best suits your dog's needs.
- Ask your veterinarian whether your dog could benefit from vaccination against Lyme disease.
- When possible, avoid tick-prone spots like tall grasses, marshes, and wooded areas. If hiking on trails with your dog, stick to cleared trails and avoid brushing against overhanging branches or shrubs.

- [Examine your pet for ticks](#) immediately after returning home from any tick-prone spots (such as after camping, hiking, or hunting), and carefully remove any ticks found.
- Make your yard unfriendly to ticks by mowing grasses, trimming bushes, and removing brush.
- Perform daily “tick checks” of all pets and people in your home during high-risk seasons (spring through fall).
- If you do find ticks on your pet, remember to check yourself and your family for ticks, too!

The Lyme disease vaccine isn't right for every dog. Your veterinarian will consider several factors in making a recommendation, such as the risk of Lyme disease in your area, your pet's lifestyle and overall health, and any travel plans you have with your dog.

If your veterinarian does recommend that your dog be vaccinated against Lyme disease, the typical protocol involves an initial vaccination, followed by a booster 2-4 weeks later and annual boosters after that.