

# Tick Identification and Tick-borne Diseases in Virginia

## TICK IDENTIFICATION CHART

**Blacklegged Tick (*Ixodes scapularis*)**  
 adult female (af) ☹️, adult male (am), nymph (n) ⚡☹️, larva (l)

**Lone Star Tick (*Amblyomma americanum*)**  
 adult female (af) ⚡☹️, adult male (am) ☹️, nymph (n) ⚡☹️, larva (l) ☹️

**American Dog Tick (*Dermacentor variabilis*)**  
 adult female (af) ⚡☹️, adult male (am) ☹️, nymph (n), larva (l)

☹️ = Tick stages known to feed on people.  
 ⚡ = Tick stage causing the most disease transmission

Scale: 1 inch, 1/2, 1/4, 1/8, 1/16

Original image by Litwak for CDC; modified by D.N. Gaines for VDH.

## TICK-BORNE DISEASES

**Anaplasmosis and Ehrlichiosis:** The symptoms of ehrlichiosis and anaplasmosis typically start 7 to 14 days after an infectious tick bite. Illness appears as a sudden onset of fever that may be accompanied by one or more of the following symptoms including: severe headache, muscle pain, nausea and vomiting, a rash, and confusion. Rashes are uncommon with anaplasmosis. Severe or fatal illnesses may occur, so treatment should begin as soon as possible. Severe illness can result in neurological symptoms, difficulty breathing, or a bleeding/blood clotting disorder. Asplenic and immune-compromised patients are more likely to suffer a severe or fatal illness. Ehrlichiosis is the second most confirmed tick borne disease in Virginia and is much more commonly confirmed than anaplasmosis.

**Babesiosis:** Symptoms of babesiosis may take 1-3 weeks to appear after the infectious tick bite. Symptoms may include fever, chills, muscle pains, fatigue and jaundice. Most infected people have no illness symptoms. Asplenic or immune-compromised patients may suffer a severe or fatal illness. To date, all of the confirmed cases of babesiosis in Virginia have occurred in persons who travelled to, or were exposed to ticks in babesiosis endemic states of the northeastern U.S.

**Lyme Disease (LD):** The first sign of LD is usually a circular or oval rash at least two inches in diameter called an erythema migrans (EM). The EM rash occurs at the tick bite site from 3 to 30 days after an infectious bite, can grow to 12 inches or more in diameter, and may have a uniform color or have a bull's-eye appearance. The EM rash generally does not itch or hurt, and may go un-noticed. The EM rash may be accompanied by a fever, headaches, joint or muscle aches, swollen glands and fatigue. When left untreated, LD may progress to affect the nervous system or heart, and in some people may cause long lasting arthritis in large joints, and/or nervous system symptoms. Lyme disease is the most common tick-borne disease seen in Virginia.



**Rocky Mountain Spotted Fever (RMSF):** RMSF is a serious illness characterized by a sudden onset of fever 2-14 days after an infectious tick bite. The fever may be accompanied by headache, muscle pain, nausea, vomiting, abdominal pain, and a red spotted rash. The rash typically appears 2 to 5 days after onset of illness, beginning at the wrists and ankles and spreading to the palms, soles of feet and the rest of the body. Treatment should begin as soon as RMSF is suspected. Untreated cases or delay of treatment may result in severe or fatal consequences. Severe illness often results in permanent damage to organs and limbs.

### Preventing Tick Bites

- Recognize when you are in potential tick habitats such as leaf litter and vegetation in forest environments.
- Walk in the center of forest trails, keep grass cut and rake leaves/clear brush in wooded/shady yards.
- Wear light-colored clothing so ticks are visible.
- Tuck pant legs into socks or boots, tuck shirts into pants and wear long sleeved shirts.
- Apply repellents to exposed skin containing up to 50% DEET for adults or less than 30% DEET for children. Repellents containing other active ingredients such as bioUID, oil of lemon eucalyptus, IR3535, picaridin, or 2-undecanone may also be effective.
- Apply repellent containing 0.5% permethrin to shoes, socks, and clothing. Follow directions carefully and do not apply this repellent to skin. Clothing repellents are very effective.
- **Conduct thorough tick checks after you have been in tick habitat; remove ticks promptly.**

### How to Remove a Tick

- Using tweezers, grasp tick near mouth parts as close to the skin as possible.
- Be careful not to squeeze or rupture the tick's swollen abdomen.
- Pull tick in a steady, upward motion until it releases from the skin. This may take a minute.
- **Other methods of tick removal are unsafe.**
- Disinfect hand and bite site with soap and water; apply antiseptic to the bite site.
- It is advisable to identify the tick, so save it in alcohol or a plastic bag. If you become ill, the tick identification might help your doctor diagnose the illness.



## TICK-BORNE DISEASE CHART

Disease	Vector Species	Stage that can Transmit Diseases to People	Minimum Feeding Time for Disease Transmission
Anaplasmosis	Blacklegged Tick	Nymph and Adult	24 hours
Babesiosis	Blacklegged Tick	Nymph and Adult	36 hours
Ehrlichiosis	Lone Star Tick	Nymph and Adult	24 hours
Lyme Disease	Blacklegged Tick	Nymph and Adult	36 hours
Rocky Mountain Spotted Fever	American Dog Tick	Adult Only	10-20 hours
Tularemia	Lone Star Tick American Dog Tick	Nymph and Adult Adult Only	Unknown

For more information visit [www.vdh.virginia.gov/TickBrochure](http://www.vdh.virginia.gov/TickBrochure)

**If you become ill and have been exposed to ticks, tell your doctor about your tick exposure.**

