



Protect Yourself from Tick-Borne Diseases

FACT SHEET 18-028-0318

Ticks can carry and transmit (vector) a wide variety of disease-causing organisms (pathogens). Different kinds (species) of ticks generally transmit different pathogens, that is, they are considered vectors for specific disease organisms. Some ticks can be vectors for more than one kind of pathogen.


Tick Species and Life Stages Most Likely to Bite Humans in the U.S. And the Diseases They May Cause


Tick Species	Disease	Pathogen
<p><i>Ixodes scapularis</i> (blacklegged tick, a.k.a. deer tick)</p>	Lyme disease (LD) Human granulocytic anaplasmosis (HGA) Babesiosis (BAB) <i>E. muris</i> -like ehrlichiosis (EML)	<i>Borrelia burgdorferi</i> <i>Anaplasma phagocytophilum</i> <i>Babesia microti</i> <i>Ehrlichia</i> sp. Wisconsin
<p><i>Amblyomma americanum</i> (lone star tick)</p>	Human monocytic ehrlichiosis (HME) Southern tick-associated rash illness (STARI) Ewingii ehrlichiosis (EE) in humans and Canine granulocytic ehrlichiosis in dogs	<i>Ehrlichia chaffeensis</i> ? <i>Ehrlichia ewingii</i>
<p><i>Dermacentor variabilis</i> (American dog tick)</p>	Rocky Mountain spotted fever (RMSF)	<i>Rickettsia rickettsii</i>

Not all ticks are infected, so a tick bite does not necessarily mean you will get a disease. Even if a tick is infected, it must be attached to your skin for at least several hours before it can transmit the pathogens to you. The sooner you remove attached ticks, the safer you will be. Ticks that are just crawling on your skin or clothing cannot make you sick.


Although most tick bites are caused by the three species of ticks shown in the table, there are other tick species that do occasionally bite humans in the U.S. They include: *Ixodes pacificus* (western blacklegged tick) which looks identical to *Ixodes scapularis* and transmits the same or closely related, but which is present only in the Pacific Coast states; *Dermacentor andersoni* (Rocky Mountain wood tick), which looks very similar to *D. variabilis*, and also transmits RMSF,


but only in the Rocky Mountain States; *Rhipicephalus sanguineus* (brown dog tick), which is widespread and although not a frequent human biter, can transmit RMSF to humans; and *Amblyomma maculatum* (Gulf Coast tick), which is found in the southern and south-central U.S., and transmits a newly emerging human pathogen, *Rickettsia parkeri*.


 Ticks go through several stages in their life cycle: egg, larva, nymph, and adult. For all tick species, the larva is very tiny (a mere speck that has 6 legs); the nymph is a little larger (but still very small, about the size of a poppy seed, and has 8 legs); and the adult is larger still, is easy to see, and also has 8 legs. Although larval ticks will bite humans, they rarely transmit pathogens, but both nymphs and adults may do so.

 A tick needs a blood meal from a host in order to molt and to reproduce as adults. This feeding process continues for several days to a week until the tick is fully engorged with blood. If the tick is infected with pathogens, it can transmit the infection to the host (this could be you!) during the feeding process.


TO BEST PROTECT YOURSELF FROM TICK BITES, DO THIS:

 The key to preventing diseases transmitted by ticks is the simultaneous use of all elements of the DoD Insect Repellent System: the combined use of repellents applied to skin and clothing, and properly worn uniforms.

 Treat civilian clothing with permethrin repellent. When ticks crawl onto the treated fabric, they absorb a tiny amount of permethrin, making them too sick to bite you. Follow application directions on the repellent label. One treatment remains effective through repeated launderings. All Soldiers are now being issued Army Combat Uniforms that have been factory-treated with permethrin (ACU-Permethrin). Treat all older uniforms using one of the following: The **IDA kit (NSN 6840- 01-345-0237)** is a permethrin impregnation kit that contains 40-percent permethrin. One kit treats one uniform, and the treatment lasts through approximately 50 washes (generally considered the combat life of the uniform). If the IDA kit is not available, use the **Aerosol Spray Can (NSN 6840-01-278-1336)**, 0.5-percent permethrin, one application of approximately ¾-can lasts through 5-6 washes. NOTE: factory treated uniforms cannot be retreated with permethrin.

 Apply a thin coat of a skin repellent to all areas of exposed skin (the products shown below are all effective), always follow the label directions. Products containing DEET and picaridin are available for use:

- **Ultrathon (NSN 6840-01-284-3982)**, 33% controlled-release DEET lotion, one application protects for up to 12 hours.
- **Ultra 30 Insect Repellent Lotion (NSN 6840-01-584-8393)**, contains 30% Lipo DEET, the formulation is not as greasy and one application protects for up to 12 hours.
- **Cutter pump spray (NSN 6840-01-584-8598)**, contains 23% DEET, one application protects for up to 8 hours.
- **Natrapel Insect Repellent pump spray (NSN 6840-01-619-4795)**, contains 20% picaridin, one application protects for up to 8 hours.

 Check yourself for ticks routinely:

- When you go indoors, remove your clothes and take a shower, checking your skin carefully.
- Placing your clothes in a hot dryer for 20-30 minutes will ensure that any ticks you failed to notice will be killed.
- Check children and pets carefully.

 Remove attached ticks immediately:

- Grasp the tick's mouthparts as close to the skin as possible with fine-tipped tweezers; pull back slowly and steadily with firm force until the barbed mouthparts can be eased out of the skin. Be patient.
- DO NOT apply any substance, including petroleum jelly, finger nail polish, finger nail polish remover, repellents, pesticides, or a lighted match to the tick, while it is attached. These materials or methods are either ineffective, or worse, might force more infective fluid into the bite site.
- After removal, wash the bite site and apply an antiseptic.
- Save the tick for identification. Preserve the tick by keeping it in the freezer.
- If you develop flu-like illness or rashes, seek medical attention immediately. Take the tick with you to the clinic. Prompt diagnosis and treatment will likely speed your recovery and prevent lingering symptoms.