

Just the Facts...

Ticks are small arachnids, relatives of spiders and insects. In order to grow and reproduce ticks must feed on the blood of animals. Most ticks go through 3 stages (larva, then nymph, and finally adult) in their life cycle. The tick must feed (take a blood meal) once at each stage and this blood meal takes several days to complete. The main species of ticks which readily bite humans in the United States are *Ixodes scapularis* (black-legged tick, a.k.a. deer tick), *Ixodes pacificus* (western black-legged tick), *Amblyomma americanum* (lone star tick) and *Dermacentor variabilis* (American dog tick). In Europe *Ixodes ricinus* (sheep tick) is the predominant species and *Ixodes persulcatus* (taiga tick) is common in Asia. Ticks don't fly or jump. Rather, a tick climbs to the ends of blades of grass, shrubs or weeds and waits quietly with its front legs extended until it can grab onto a passing animal or human. This behavior is called questing. Ticks are most common in woods, brushy areas and un-mowed fields or any overgrown place. These are the areas where ticks are not only protected from the harsh drying effects of the sun and wind, but also where their animal hosts (such as mice and deer) live. Ticks may sometimes be found on well-mowed lawns or even inside your home. This is because they can drop off pets or other animals that cross over from tick habitat back into mowed areas or homes.



The three major tick species of concern in the United States. Top: Lone Star Tick, Bottom Right: Black-legged or Deer Tick, Bottom Left: American Dog Tick

Should I be concerned about ticks and their bites?

Ticks can spread diseases to people, pets and other animals. Pathogens that may be present in their saliva are transmitted as they feed on the person or animal. These pathogens include the bacteria and viruses that cause such serious diseases as Lyme disease, babesiosis, Rocky Mountain spotted fever and other rickettsioses, and human ehrlichiosis. Not all ticks are infected. You cannot tell if a tick is infected just by looking at it. Ticks need to be attached to a host before they are able to transmit any diseases that they may be carrying; therefore, it is important to remove any tick that is attached to your skin as soon as possible. **Ticks that are just crawling on you cannot transmit diseases.**



Left: Nymphal black-legged tick questing for animal host. Middle: Deer are major hosts for black-legged ticks (deer ticks). Deer populations can transport ticks to areas around the home. Right: Tall grass, woods and wood lines provide suitable habitat for ticks around homes

What personal protective measures should I follow to protect myself against ticks?

Use an insect repellent containing **DEET** (N,N, diethyl-m-toluamide) on your exposed skin (skin that is not covered with clothing). Use an insect repellent containing **permethrin** on your clothing. Always **FOLLOW LABEL DIRECTIONS** when applying repellents. Be sure to check your clothing and body for ticks when you've been outdoors. Shower after activities in tick habitat and be sure to check your clothing and body for ticks when you've been outdoors. Ticks can ride into the home on clothing and pets, then attach to a person later, so carefully examine pets, coats and day packs. Tumble clothes in a dryer on high heat for an hour to kill any remaining ticks.



Create 'tick-free' zones around the home by mowing grass to 3 inches or less.

What are the best ways to control ticks around the home?

Create 'tick-free' zones around your home by cutting back wooded areas and removing any high grass, weeds, leaf litter and undergrowth from around your home.

Keep your lawn well mowed, to a height of 3 inches or less. This lowers the humidity at ground level, making it difficult for ticks to survive. Also, mice and other small animal hosts avoid these neatly trimmed areas because they cannot easily hide or find food and nesting materials.

Move woodpiles as far from your house as possible. Mice and chipmunks can hide and nest in woodpiles.

Keep picnic tables, lawn furniture and children's play areas as far from any woods, shrubs and undergrowth as possible.

Are there chemical control options I can use around the home?

Widespread application of pesticides for tick control is less effective compared to habitat modification techniques mentioned above. On-post residents should consult with Preventive Medicine Activity personnel at your supporting clinic or Command to survey your area and determine if chemical control is needed. Applying pesticides should be considered only as a last resort. If living off-post, it is best to hire a professional pest control company.

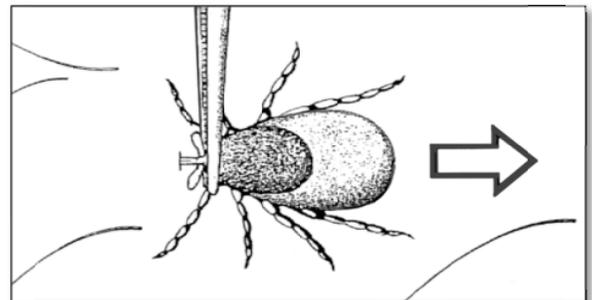
What do I do if there is a tick on me?

Remain calm, if the tick is only crawling on your skin or clothing grab and remove the tick. Ticks just crawling on you cannot transmit disease.

See figure 4 about how to safely remove an imbedded tick from your skin. You can also visit <http://www.tickencounter.org/> for more information and to see a video about tick removal. Ticks removed from military personnel, their dependents, or DOD civilians can be turned in for identification and disease testing through the Army Public Health Center's DOD Human Tick Test Kit Program.

For more information visit their website at:

<http://phc.amedd.army.mil/topics/envirohealth/epm/Pages/HumanTickTestKitProgram.aspx>



To safely remove a tick: Using pointy tweezers, grab the tick close to skin and use slow, steady motion to pull tick out. DO NOT twist, poke or burn the tick and DO NOT smother the tick with any substance.

What can I do to protect my pets from ticks?

Consult your veterinarian about products and treatments to protect your pets from ticks. Always check your pets for ticks after they have been in wooded or overgrown grassy areas.

What are the standard military insect repellent products available for use on exposed skin?

Approved military insect repellents for use on exposed skin come in a variety of formulations. Always refer to the label to determine frequency of repellent application based on activity. **Do not apply repellent to eyes, lips, or to sensitive or damaged skin.** Available military repellents are:

- **Ultrathon™** (NSN 6840-01-284-3982) 33% controlled-release DEET lotion; one application protects for 12 hours.
- **Ultra 30 Insect Repellent Lotion** (NSN 6840-01-584-8393) contains 30% Lipo DEET; 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.
- **Sunsect** combination sunscreen & repellent (6840-01-288-2188) contains 20% DEET and SPF 15 sun protection.
- **Natrapel® pump spray** (NSN 6840-01-619-4795) contains 20% picaridin; provides improved protection against Anopheles mosquitoes (carriers of malaria).



Standard military insect repellents for use on exposed skin come in a variety of formulations (left). All standard skin repellents contain the active ingredient DEET or picaridin and are registered by the USEPA. These products are safe to use and effective at repelling ticks that carry Lyme disease. Photo: VID, APHC

What can I use to treat my clothing with permethrin?

Aerosol products containing 0.05% permethrin and permethrin-impregnated garments are commercially available for civilian use.