

TICKBORNE DISEASE OCCUPATIONAL TOOLKIT

Maryland Department of Health
Center for Zoonotic and Vector-borne Diseases



MARYLAND GET TICKED OFF!

TICKBORNE DISEASE OCCUPATIONAL HEALTH TOOLKIT

Introduction

Ticks are small, insect-like creatures that bite and feed on people and animals. When a tick bites, it can spread germs that can make people sick. Ticks are common in shaded, outdoor areas with grass, shrubs, rocks, logs, and fallen leaves. People who work outdoors in grassy, brushy areas or in wooded areas may be at risk for tick bites and the diseases ticks can carry.

This online toolkit contains health information for employers and outdoor workers whose job sites and work activities could put them at risk for tick bites. The information in this toolkit is designed to help users know:

- *Who is at risk for tick bites*
- *How to prevent tick bites while working outdoors*
- *How to remove an attached tick*

**Adapted with permission from the California Department of Public Health's Tick-Borne Diseases Occupational Toolkit*

TOOLS FOR EMPLOYERS

Employers should be aware of where and when ticks are common in Maryland:

Where - Common tick habitat includes grassy, brushy and wooded areas.

When - In Maryland, ticks can be found at any time of the year.

Employers can take proactive steps to help protect their employees and staff from tick bites:

- **Inform staff of the possibility of encountering ticks** in the workplace. Provide staff with copies of the Maryland Department of Health resources in this toolkit to provide prevention information. Information should be provided in the written language(s) of employees.
- The Tools for Employees provides information on how tickborne diseases spread, ways to prevent tick bites, and what to do if you are bitten by a tick. This document is available in Spanish, Arabic, Haitian Creole, Korean, Mixteco, and Zapotec. **Coming soon!**
- **Recommend the use of protective clothing:** long-sleeved shirts, long pants, and socks. If uniforms are required, provide light-colored, long-sleeved shirts and long pants as clothing options, so ticks can be easily spotted on clothing.
- **Instruct employees to regularly check for ticks** on their clothes and skin while they are working.
- **Schedule breaks for tick checks**, or encourage tick checks during other scheduled breaks (such as lunch breaks or water breaks). Employees can help one another check for ticks in areas that they can't easily see themselves (such as on their back or behind the ears).
- **Suggest that staff carry a pair of tweezers** with them so they can carefully remove a tick if they find one attached to their skin.
- **Provide EPA-registered insect repellent** (<https://www.epa.gov/insect-repellents/find-repellent-right-you>) for use on skin and clothing for protection against tick bites. Be sure repellent label instructions are provided in written language of employees to help ensure proper application.
 - * Repellent should be applied **before** going into areas with ticks.
 - * Permethrin, which kills ticks on contact, also can be provided for use on clothing and gear.
 - * Commercially available permethrin-treated work clothes may be an option for staff.
- **Remind staff of the importance of timely reporting of tick bites** and symptoms of tickborne disease (<https://www.cdc.gov/ticks/symptoms.html>).
 - * Incorporate reports of tick bites or symptoms of tick-borne disease into your current protocol for reporting workplace incidents and injuries.

TOOLS FOR EMPLOYERS (continued)

- If staff ask about tick testing in the event they are bitten, it's important to know that testing a tick for the presence of a disease-causing agent is not recommended for medical decision making. Instead, staff should monitor for symptoms of tickborne disease after a tick bite and speak to a healthcare professional. Tick testing is not recommended for the following reasons:
 - * Test results may not be accurate
 - * Testing may take too long for medical decision-making
 - * A positive test result does not necessarily mean transmission of a tickborne disease has occurred
 - * Even if the tick tests negative, the person could have been unknowingly bitten by another tick that was infected

Information regarding Maryland's Tick Identification Service is available at:

<https://health.maryland.gov/phpa/OIDEOR/CZVBD/Pages/Tick-Identification.aspx>

TOOLS FOR EMPLOYEES

The best way to protect yourself from tickborne diseases is to protect yourself from tick bites

If your job involves working outdoors in grassy, brushy, or wooded areas, you may be at risk for tick bites and the diseases ticks can carry. Ticks usually live in shaded areas with grass, shrubs, rocks, logs, and fallen leaves. When a person spends time in these areas, they are more likely to be bitten by a tick. When a tick bites, it can spread germs that can make people sick.

What ticks can be found in Maryland?

In Maryland, common ticks include the blacklegged tick, the Lone star tick, and the American dog tick. Diseases spread by ticks can make some people very sick. It is important that you and your coworkers know how to prevent tick bites while working outdoors and know what to do if you are bitten by a tick.



Tick habitat



BLACKLEGGED TICK *Ixodes scapularis*

WHERE FOUND Widely distributed across the eastern United States.

TRANSMITS *Borrelia burgdorferi* and *B. mayonii* (which cause Lyme disease), *Anaplasma phagocytophilum* (anaplasmosis), *B. miyamotoi* disease (a form of relapsing fever), *Ehrlichia muris eauclairensis* (ehrlichiosis), *Babesia microti* (babesiosis), and Powassan virus (Powassan virus disease).

COMMENTS The greatest risk of being bitten exists in the spring, summer, and fall in the Northeast, Upper Midwest and mid-Atlantic. However, adult ticks may be out searching for a host any time winter temperatures are above freezing. All life stages bite humans, but nymphs and adult females are most commonly found on people.

CDC



LONE STAR TICK *Amblyomma americanum*

WHERE FOUND Widely distributed in the eastern United States, but more common in the South.

TRANSMITS *Ehrlichia chaffeensis* and *E. ewingii* (which cause human ehrlichiosis), *Francisella tularensis* (tularemia), Heartland virus (Heartland virus disease), Bourbon virus (Bourbon virus disease), and Southern tick-associated rash illness (STARI).

COMMENTS The greatest risk of being bitten exists in early spring through late fall. A very aggressive tick that bites humans. The adult female is distinguished by a white dot or "lone star" on her back. The nymph and adult females most frequently bite humans. Growing evidence suggests that alpha-gal syndrome (AGS) may be triggered by the bite of lone star ticks; however, other tick species have not been ruled out.

CDC

TOOLS FOR EMPLOYEES (continued)



AMERICAN DOG TICK *Dermacentor variabilis, D. similis*

WHERE FOUND *D. variabilis* is widely distributed east of the Rocky Mountains. Newly described *D. similis* is found west of the Rocky Mountains. More research is needed to understand the role of these species in disease transmission.

TRANSMITS *Francisella tularensis* (tularemia) and *Rickettsia rickettsii* (Rocky Mountain spotted fever).

COMMENTS The greatest risk of being bitten occurs during spring and summer. Adult females are most likely to bite humans. CDC



GULF COAST TICK *Amblyomma maculatum*

WHERE FOUND Distributed primarily in the southeastern United States, with focal populations in the northeastern, midwestern, and southeastern United States.

TRANSMITS *R. parkeri* (*R. parkeri* rickettsiosis), a form of spotted fever.

COMMENTS Larvae and nymphs feed on birds and small rodents, while adult ticks feed on deer and other wildlife. Adult ticks have been associated with transmission of *R. parkeri* to humans. CDC

Who is at risk for being bitten by a tick?

People who work outdoors in grassy, brushy areas where ticks live are more likely to be bitten by a tick. This can include people who work in certain jobs including:

- Brush clearing
- Farming
- Forestry
- Military activities and training
- Park or wildlife management
- Utility line work
- Construction
- Field work research
- Land surveying
- Outdoor photography
- Trail construction/management
- Wildland firefighting

Worksites in forested areas or areas with high grass, dense brush, and leaf litter are likely to have ticks. Ticks can also be found on wood products in campgrounds and parks. You should be aware of ticks when sitting or resting on logs, picnic benches, and even rocks.

Is there a “tick season” in Maryland

If you work outdoors in Maryland, you may come across a tick at any time of the year.

Types of tickborne diseases

Ticks may carry bacteria, viruses, or parasites and pass them to humans and other animals when they bite. Lyme disease is the most commonly reported tickborne disease in Maryland. Other tickborne diseases in Maryland include: ehrlichiosis, anaplasmosis, babesiosis, Rocky Mountain spotted fever, and tularemia. For more information about tick-borne diseases in Maryland, visit the Maryland Department of Health (MDH) Tickborne Disease Website (https://health.maryland.gov/phpa/OIDEOR/CZVBD/Pages/tickborne_dz.aspx).

TOOLS FOR EMPLOYEES (continued)

Before you begin work outdoors in areas with ticks:

- **Dress for protection.** Wear a long-sleeved shirt and long pants, and tuck in your shirt. Since ticks are usually darker in color, wearing light-colored clothes can help you more easily spot ticks that may be crawling on your clothes.
- **Apply repellent.** Use an EPA-registered insect repellent (<https://www.epa.gov/insect-repellents/find-repellent-right-you>) on clothes and exposed skin, especially on your feet, ankles, and legs. Repellents keep ticks, mosquitoes, and other insects from biting you.
- **Treat clothing and gear with 0.5% permethrin**, which will kill or repel ticks. When using permethrin, be sure to follow the label instructions carefully. Apply permethrin to clothing and gear before putting them on. **Do not spray permethrin on your skin.**

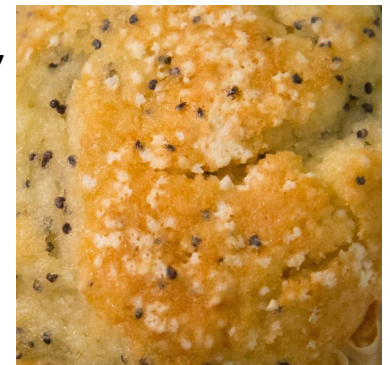


Ticks on a boot (CDC)

While you are working:

- **Check for ticks.** Check yourself and others for ticks regularly while you are working. If you find a tick crawling on your clothes or skin, brush it off.

Ticks have a flat, teardrop-shaped body and are usually brown, reddish, or black, and may have gray or white markings. **Ticks can be tiny** – they can range in size from slightly larger than a sesame seed to the size of a poppy seed.



Poppy Seed Muffin with ticks (CDC)

After you return from work:

- **Check for ticks again.** Check your whole body for ticks, including behind the knees, under the arms, and in the hairline and groin areas. Keep checking for ticks 3 days after being outside in areas with ticks to be sure you don't miss any ticks that may be hiding in hard-to-reach areas.
- **Shower.** Take a shower within two hours after you return indoors. Shower and scrub your head and body to wash away any ticks that you may have missed.
- **Dry your clothes.** Before washing work clothes, put them in a hot dryer for 10 minutes to kill any ticks that may be on your clothes.



Check for ticks (CDC)

What if I find a tick attached to my skin?

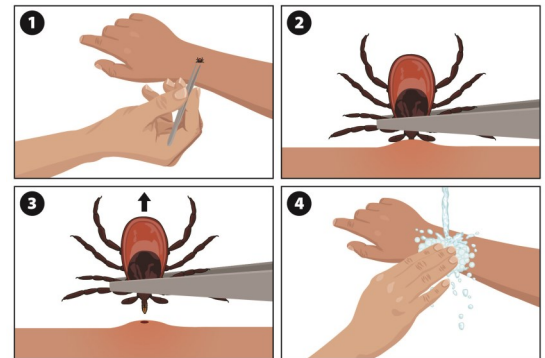
1. Remove the tick with tweezers as soon as possible (see steps below). Timing is very important! Remember that ticks can spread diseases to people when they bite. Depending on the type of disease, it can take hours to days for an infected tick to transmit a disease to a person when it bites. The sooner you remove a tick that is attached, the lower your risk of getting sick.
2. Tell your supervisor or safety officer that you were bitten by a tick. Note the date you were bitten and

TOOLS FOR EMPLOYEES (continued)

where you were working outside before you were bitten or found the tick.

The best way to remove a tick is to pull it out using tweezers:

- Use tweezers to grab the tick as close to your skin as possible.
- Slowly pull the tick firmly, straight out, and away from your skin. Do not twist or jerk the tick while pulling.
- Sometimes during removal, part of the tick may break off and stay in the skin. If this happens, remove any remaining parts with tweezers like you would a splinter. If you cannot completely remove the tick, clean the area, apply antibiotic ointment, and see a healthcare provider if the area becomes infected.
- Wash your hands and the bite area with soap and water, or apply an antiseptic to the bite area.
- Throw the tick away in the trash, flush it down the toilet, or save it for identification by a public health agency by placing it in rubbing alcohol or taping it to a piece of paper using clear tape.



Steps to remove a tick (CDC)

Tick removal techniques that don't work, such as applying nail polish, burning the tick with a match, or swabbing it with soap, should not be used because they delay removal and can also be dangerous. If you find a tick attached to your skin, it's important to carefully remove it as soon as possible.

Symptoms of a tickborne disease

If you were bitten by a tick, it's important to watch for symptoms that may appear up to 30 days after being bitten. The symptoms of a tickborne disease may include:

- Body/muscle aches
- Headache
- Joint pain
- Rash
- Fever
- Fatigue
- Stiff neck
- Facial paralysis

If you develop any of these symptoms within 30 days of a tick bite, tell your employer and seek medical care right away. If left untreated, some tickborne diseases can lead to heart, joint, nerve problems, and even death. Be sure to tell your healthcare provider that you work outdoors in an area where ticks may be present. Most tick-borne diseases can be successfully treated with certain antibiotics, especially if treatment is started early.

Where can I get more information?

Talk with your employer if you are concerned about ticks in your workplace. For more information about tickborne disease prevention, visit the MDH Tickborne Disease Prevention Website (https://health.maryland.gov/phpa/OIDEOR/CZVBD/Pages/tick%20dz_prevention.aspx).

RESOURCES

Important links that have been included throughout this document:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA)

- **EPA-registered insect repellent**
<https://www.epa.gov/insect-repellents/find-repellent-right-you>

CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)

- **Tickborne Disease Symptoms**
<https://www.cdc.gov/ticks/symptoms.html>

MARYLAND DEPARTMENT OF HEALTH (MDH)

- **Tickborne Disease Website**
https://health.maryland.gov/phpa/OIDEOR/CZVBD/Pages/tickborne_dz.aspx
- **Tickborne Disease Prevention Website**
https://health.maryland.gov/phpa/OIDEOR/CZVBD/Pages/tick%20dz_prevention.aspx
- **Tick Identification Services**
<https://health.maryland.gov/phpa/OIDEOR/CZVBD/Pages/Tick-Identification.aspx>

CONTACT INFORMATION

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