

FIGHT THE BITE AT CAMP

Tick and Mosquito Safety Information for Pennsylvania Camps



pennsylvania
DEPARTMENT OF HEALTH



7/2024

WHY IS THIS IMPORTANT?

Ticks and mosquitoes are common in Pennsylvania. Participating in outdoor activities increases a person's risk of being bitten by ticks and mosquitoes. Ticks and mosquitoes may carry bacteria, viruses or parasites that can cause diseases in humans.

However, there are a number of strategies that can be used to prevent tick and mosquito bites. The Pennsylvania Department of Health encourages camps to educate counselors and campers on how to best prevent tick and mosquito bites and what signs and symptoms of tick and mosquito borne diseases to watch out for and protect yourself.

TICKBORNE DISEASES

Several tickborne diseases are transmitted in Pennsylvania, the most common being **Lyme disease**. Tickborne diseases to be aware of in Pennsylvania include the following:

Lyme Disease

Caused by the bacteria *Borrelia burgdorferi*

Transmitted by infected deer ticks

Very common in PA. About 8,000-10,000 cases reported each year and estimates are that cases may be much higher

Anaplasmosis

Caused by the bacteria *Anaplasma phagocytophilum*

Transmitted by infected deer ticks, the same tick that transmits Lyme disease

Nearly 600 cases reported in PA in 2022 and expected to increase annually

Babesiosis

Caused by the parasite *Babesia microti*

Transmitted by infected deer ticks, the same tick that transmits Lyme disease

Nearly 100 cases reported in PA in 2022

Powassan virus

Caused by the Powassan virus

Transmitted by infected deer ticks, the same tick that transmits Lyme disease

Very rare, only about 1 case reported in PA each year

Ehrlichiosis

Caused by the bacteria *Ehrlichia chaffeensis*

Transmitted by infected lone star ticks

Over 50 cases reported in PA in 2022

Rocky Mountain Spotted Fever

Caused by the bacteria *Rickettsia rickettsii*

Transmitted by infected dog ticks

Several cases reported in PA each year

MOSQUITO-BORNE DISEASES

In 1999, **West Nile Virus (WNV)**, an arbovirus transmitted by *Culex* mosquito species, was detected in New York City resulting in the first ever domestically acquired human case of WNV disease in the Western Hemisphere, which rapidly spread to surrounding states. Since 2000, WNV has been and continues to be the most frequently reported arbovirus in Pennsylvania.

In recent years, other locally acquired arboviruses (e.g., **Jamestown Canyon, Powassan, Eastern equine encephalitis**, etc.) have also been identified in Pennsylvania.

Additionally, cases of imported arboviruses (e.g., **dengue, chikungunya, Zika**, etc.) are detected annually in Pennsylvania residents returning from travel to impacted regions.



PRECAUTIONS

REPELLENT & PERMETHRIN



Insect Repellent

Repels ticks and mosquitoes

Use EPA-approved insect repellent on clothing and exposed skin.

- Look for ingredients like DEET, picaridin, oil of lemon eucalyptus or IR3535.
- Apply insect repellent according to label directions on exposed skin. Avoid applying to areas around the eyes and mouth. Do not use under clothing.
- Do not use insect repellent on the hands of young children.
- Do not use insect repellent over cuts, wounds, or irritated skin. Wash treated skin with soap and water after returning indoors, and wash treated clothing.
- We encourage camps to have campers bring insect repellent to camp with them and to give campers time to apply insect repellent each day.

Scan for more information on EPA-approved repellents!

<https://www.epa.gov/insect-repellents>



Permethrin

Kills ticks and mosquitoes on contact

- Apply permethrin to clothes, shoes, sleeping bags, tents, etc.
- Permethrin is an insecticide that can be applied to a camper's clothing, shoes, and gear before coming to camp and protection will last up to six weeks.
- We strongly encourage camps to send instructions to campers' homes on applying permethrin to clothing, shoes, and gear before coming to camp.

Scan for more information on permethrin and a video on how to use it!

<https://www.cdc.gov/mosquitoes/mosquito-bites/how-to-use-permethrin.html>



PRECAUTIONS

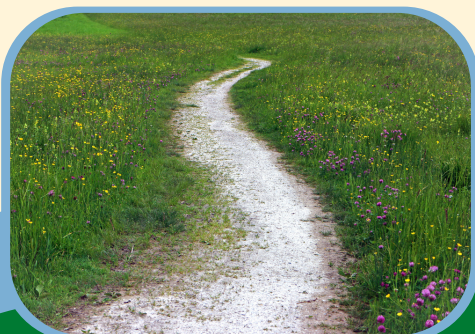
TICK HABITAT AVOIDANCE & CLOTHING

Tick Habitat Avoidance

- Avoid tick-infested areas
 - Overgrown shrubs, grasses and weeds
 - Leaf litter
 - Banks of streams, rivers, lakes and ponds
- Walk in the center of trails to avoid overhanging brush.
- We encourage camps to maintain grounds to decrease ticks in areas campers will be using.
- The Connecticut Agriculture Experiment Station's Tick Management Handbook provides information on managing tick populations in outdoor spaces.

- **Scan here to read it!**

<https://portal.ct.gov/-/media/caes/documents/publications/bulletins/b1010pdf>



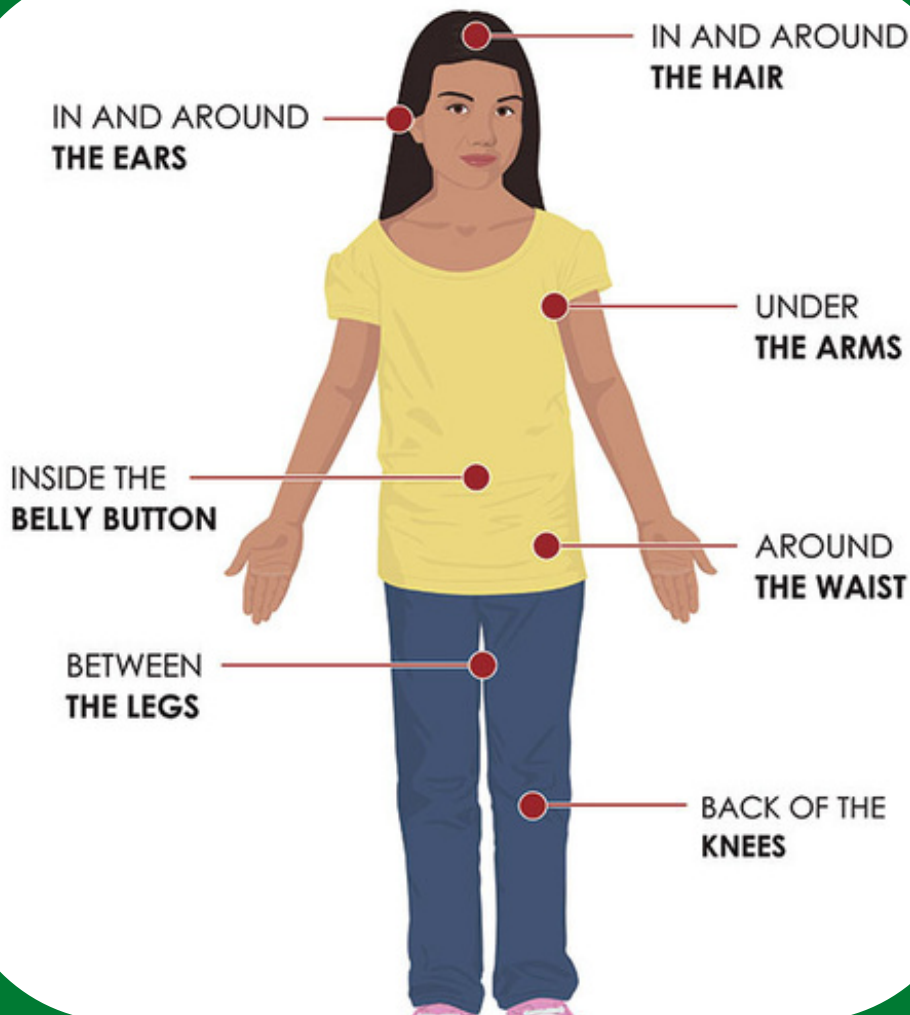
Clothing

- Wear light-colored clothing so ticks can be spotted more easily.
- Tuck pant legs into socks or boots, and shirts into pants.
- Tape the area where pants and socks meet.
- Wear a hat, long sleeved shirt, and long pants for added protection.

PRECAUTIONS

TICK CHECKS

- Instruct campers to conduct regular tick checks when participating in outdoor activities.
- Once campers come in, encourage and provide time for thorough tick checks. Allow campers to have tick check buddies if they need help with checking for ticks on backs or scalps.
- We also encourage time to allow campers to shower after participating in outdoor activities to remove ticks that have not yet bitten.

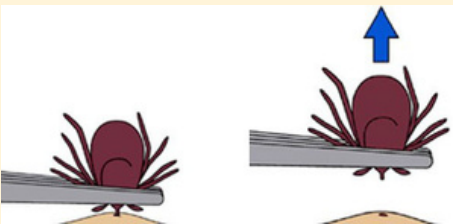


PRECAUTIONS

TICK REMOVAL

We encourage campers to come with tweezers or tick removal tools and for the camp to have these devices readily available.

- If you find a tick attached to your skin, there is no need to panic.
- There are several tick removal tools on the market, but a plain set of fine-tipped tweezers will remove a tick effectively.
- **Prompt and proper tick removal is important for preventing possible disease transmission.**



Scan for more
info on tick removal

[https://www.cdc.gov/ticks/
removing_a_tick.html](https://www.cdc.gov/ticks/removing_a_tick.html)

- Use fine-tipped tweezers and protect your fingers with a tissue, paper towel, or latex gloves.
- Avoid removing ticks with your bare hands.
- Grasp the tick as close to the skin surface as possible and pull upward with a steady, even pressure.
- Don't twist or jerk the tick; this can cause the mouth parts to break off and remain in the skin. If this happens, remove the mouth parts with tweezers. If you are unable to remove the mouth easily with clean tweezers, leave it alone and let the skin heal.
- After removing the tick, thoroughly disinfect the bite and your hands with rubbing alcohol, an iodine scrub, or soap and water.
- Avoid folklore remedies such as "painting" the tick with nail polish or petroleum jelly or using heat to make the tick detach from the skin. Your goal is to remove the tick as quickly as possible; do not wait for it to detach.

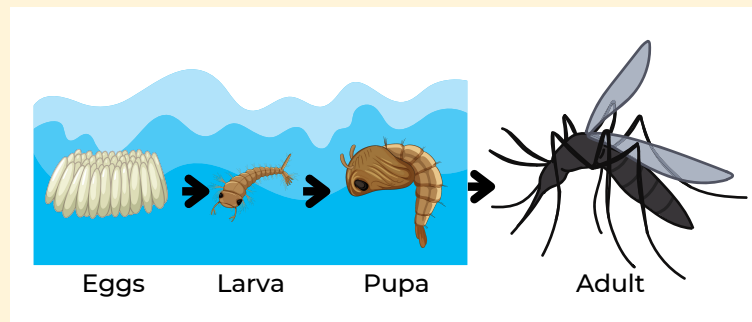
Provide parents/guardians with information on tick bites and symptom monitoring.

When a tick must be removed, camps are encouraged to complete and send home with the camper a *Tick Removal Report Form*.

PRECAUTIONS

MOSQUITO CONTROL

Mosquitoes spend most of their life cycle in water. Eliminate standing water at your camp site to prevent mosquitoes by:



01

Dumping or Draining

all containers that might be collecting rain water.

02

Treating

puddles and other water that can't be eliminated with *Bacillus thuringiensis israelensis* (Bti) dunks. The bacteria will infect and kill any mosquito larvae present, but the water will remain safe for people, pets, aquatic life, and plants.



Bti dunks are available at any lawn and garden store and are a safe and effective way to kill mosquito larvae.

08

PRECAUTIONS

WATCH FOR SYMPTOMS

**If you develop flu-like symptoms
in warm months see a healthcare provider.**

- Most tick and mosquito-borne diseases can initially feel like the flu with fevers, body aches, headaches and fatigue. Most of these diseases are transmitted in the summer, when the flu is not in season.
- **Don't delay getting treatment!**
Bacterial and parasitic vectorborne diseases can be treated with medications.
- Keep in mind that many people don't know they've been bitten by a tick since a tick bite is not painful. Even if a person does not recall being bitten by a tick, if they develop flu-like symptoms or a rash that is consistent with a tickborne illness, follow-up with a healthcare provider.



Examples of EM rashes

Many vectorborne diseases include a rash.

Lyme disease has a distinctive rash, called Erythema Migrans (EM), that can be the size of a dinner plate and may look like a bull's eye.

ADDITIONAL INFORMATION

Why educate children on ticks and Lyme disease?

Children under the age of 15 have an increased risk of being bitten by a tick:

- Children often spend more time playing outside and, due to their size, are closer to the ground.
- Outdoor activities, like lying on the grass, exploring in woods and tall grasses, playing in leaf piles, or even cuddling pets who may have ticks on their fur may be contributing actions.
- Underdeveloped hygiene skills and limited awareness increase the risk of ticks going unnoticed.
- Currently, we do not have a vaccine against Lyme disease, so the best protection against this tick disease is prevention.

If a camper finds a tick, is testing the tick recommended?

Patients may pursue tick testing for informational purposes, however, tick testing is not recommended by the PA DOH and CDC for clinical purposes for the following reasons:

Timeliness

Persons who submit ticks for testing may not get the results before they begin experiencing symptoms of a tickborne disease. Diagnosis and treatment should never be delayed while waiting for tick testing results.

Negative results

Negative tick testing results do not mean a pathogen has not been transmitted by another tick the person did not find. Studies have shown generally about 1 in 5 or 1 in 4 Lyme disease (LD) cases recalled being bitten by a tick.

Positive results

A positive test on a tick does not necessarily mean treatment is needed or that you will get sick. A positive test indicates that the tick was infected with a pathogen, but the tick may not have passed the pathogen to you. Any positive test results should be discussed with your health care provider who will work with you to determine the best course of action.

Some tick testing labs test for pathogens that cannot be transmitted by ticks or are not known human pathogens. Therefore, the tick may test positive for a pathogen, but there is no risk to of transmission to you.

Treatment

Persons who experience symptoms that may be related to tick bites or tickborne diseases should follow up with a healthcare provider.

Scan for PA DEP tick information
[https://www.dep.pa.gov/Business/
ProgramIntegration/Vector-Management/
Ticks/Pages/default.aspx](https://www.dep.pa.gov/Business/ProgramIntegration/Vector-Management/Ticks/Pages/default.aspx)



THANK YOU FOR HELPING US FIGHT THE BITE!

Link Glossary

EPA-approved repellents

<https://www.epa.gov/insect-repellents>

How to use permethrin

<https://www.cdc.gov/mosquitoes/mosquito-bites/how-to-use-permethrin.html>

Connecticut Agriculture Experiment Station's Tick Management Handbook

<https://portal.ct.gov/-/media/CAES/DOCUMENTS/Publications/Bulletins/b1010pdf.pdf>

Tick Removal

https://www.cdc.gov/ticks/removing_a_tick.html

Pennsylvania DEP Tick Testing Program

<https://www.dep.pa.gov/Business/ProgramIntegration/Vector-Management/Ticks/Pages/Default.aspx>

Looking for videos?

Topics include:

- What are ticks?
- Where can ticks be found?
- How can tick bites be prevented before going outside?
- How can your risk for tickborne diseases and tick bites be reduced after spending time outdoors?
- What are the signs and symptoms of Lyme disease?

[Tick Education Videos \(pa.gov\)](#)

For more information on vectorborne diseases in Pennsylvania?

Find educational materials and more, at the Pennsylvania Department of Health Vectorborne Disease website.

www.health.pa.gov/ticks

Or scan the QR code!



pennsylvania

DEPARTMENT OF HEALTH
BUREAU OF EPIDEMIOLOGY