Tick Awareness & Safety

BE TICK SMART!

EDUCATE * PROTECT * CHECK * REMOVE

Marvelwood School is in a region of the country where ticks are very common. Because your child is going to school in a region where ticks are common; and because you may be visiting your child throughout the year; it is important to be educated about ticks and the possible diseases they might carry. While we will take precautions recommended by the Centers for Disease Control when engaging in activities where there may be greater exposure (i.e. outdoor adventures, community service, sports etc.); students and families also need to take responsibility to ensure their protection when going for walks in the woods, fishing, and/or when interacting with faculty pets.

Tick Range Maps

http://tickencounter.org/tick_identification/tickid_nonflash
What are Ticks and What Do They Look Like?
Ticks are not insects but are Arachnids. They are in a class called Arthropods, which also includes mites, spiders and scorpions.” The two most common ticks in Connecticut are the Blacklegged Tick (*Ixodes scapularis*) and the American Dog Tick (*Dermacentor variabilis*). The third tick, the Lone Star Tick (*Amblyomma americanum*), while not established all over Connecticut, it is common in Fairfield, County, CT, New York, New Jersey, Maine and Block Island.

Image sources: [https://www.cdc.gov/ticks/tickborne-diseases/](https://www.cdc.gov/ticks/tickborne-diseases/)

“Ticks are parasites that feed by latching on to an animal host, imbedding their mouthparts into the host’s skin and sucking its blood. This method of feeding makes ticks the perfect vectors (organisms that harbor and transmit disease) for a variety of pathogenic agents (http://www.aldf.com/deer-tick-ecology/).”
Ticks are responsible for several different diseases in New England, including:

- **Lyme disease** (transmitted via Blacklegged Tick (aka Deer Tick), *Ixodes scapularis*)
- **Babesiosis** (transmitted via Blacklegged Tick (aka Deer Tick), *Ixodes scapularis*)
- **Human granulocytic anaplasmosis/ehrlichiosis** (HGA/HGE) (transmitted via Black-legged Tick (aka Deer Tick), *Ixodes scapularis*)
- **Rocky Mountain Spotted Fever** (transmitted by American Dog Tick, *Dermacentor variabilis*)
- **Powassan virus** (rare in Connecticut) (transmitted via Blacklegged Tick (aka Deer Tick), *Ixodes scapularis*)
- **Tularemia** (rare in Connecticut) (transmitted by American Dog Tick, *Dermacentor variabilis*) and Lone Star Tick (*Amblyomma americanum*)

*=most common*

“Ticks normally live in New England's forests, fields and lawns. Anywhere there are trees, plants, grasses or leaf litter, there may be ticks. They cannot jump or fly, but they can climb onto your shoes, then crawl up your socks and pant legs looking for a place to suck your blood.”
(source: newenglandtravelplanner.com/details/safety/tickborneillness.html)

In their habitat, Nymph Stage Ticks stay close to the ground. Adult ticks may climb plants, rock walls, flowers and bushes up to a height of several feet (about a meter) especially in forested areas and along trail edges which wildlife use as corridors. Ticks may also climb onto other animals, especially outdoor pet cats and dogs. It is important to realize that wherever you find these mammals you will find ticks. When humans come in contact with these areas, habitats and/or domestic animals, ticks can climb onto you if you brush against the grass, forest vegetation, dog/cat and/or sit on a rock wall, grass, etc…
(source: newenglandtravelplanner.com/details/safety/tickborneillness.html)


“Ticks found in Connecticut carry a variety of disease causing agents including, rickettsia, bacteria, and protozoa. **People can become infected with more than one disease with one tick bite.** When multi-infection transmission occurs, diagnosis and treatment can be difficult. Symptoms and treatment for each condition may vary.

There are two primary tick species in Connecticut that transmit these diseases:

- *Ixodes scapularis* (Blacklegged Tick/deer tick); transmits babesiosis, HGA/HGE, and Lyme disease
- *Dermacentor variabilis* (American dog tick); transmits RMSF, Powassan and Tularemia although the latter two while more common in some of our neighboring states are rare in Connecticut.
Information on The Tick-Borne Diseases Currently in Connecticut are outlined below:

**Lyme Disease**

The Lyme disease bacterium, *Borrelia burgdorferi*, is spread through the bite of infected ticks. The blacklegged tick (or deer tick, *Ixodes scapularis*) spreads the disease in the northeastern, mid-Atlantic, and north-central United States.

Untreated Lyme disease can produce a wide range of symptoms, depending on the stage of infection. These include fever, rash, facial paralysis, and arthritis. Seek medical attention if you observe any of these symptoms and have had a tick bite, live in an area known for Lyme disease, or have recently traveled to an area where Lyme disease occurs.

**Early Signs and Symptoms (3 to 30 days after tick bite)**

- Fever, chills, headache, fatigue, muscle and joint aches, and swollen lymph nodes
- Erythema migrans (EM) rash:
  - Occurs in approximately 70 to 80 percent of infected persons
  - Begins at the site of a tick bite after a delay of 3 to 30 days (average is about 7 days)
  - Expands gradually over a period of days reaching up to 12 inches or more (30 cm) across
  - May feel warm to the touch but is rarely itchy or painful
  - Sometimes clears as it enlarges, resulting in a target or “bull’s-eye” appearance
  - May appear on any area of the body
  - See examples of EM rashes

**Later Signs and Symptoms (days to months after tick bite)**

- Severe headaches and neck stiffness
- Additional EM rashes on other areas of the body
- Arthritis with severe joint pain and swelling, particularly the knees and other large joints.
- Facial palsy (loss of muscle tone or droop on one or both sides of the face)
- Intermittent pain in tendons, muscles, joints, and bones
- Heart palpitations or an irregular heart beat (*Lyme carditis*)
- Episodes of dizziness or shortness of breath
- Inflammation of the brain and spinal cord
- Nerve pain
- Shooting pains, numbness, or tingling in the hands or feet
- Problems with short-term memory
**Babesiosis**

This infection is caused by a protozoan called *Babesia microti*. This parasite invades and lives within red blood cells. Symptoms are mostly nonspecific, and the illness can range from very mild to very severe; although most people will not have symptoms. People who become sick may get symptoms within 1-4 weeks after the tick bite. Symptoms may include:

- Fever
- Drenching sweats
- Muscle or joint aches or pains
- A blood test may find a breakdown of the red blood cells called hemolytic anemia

Less frequent symptoms may include:

- Nausea
- Vomiting
- Headache
- Shaking
- Chills
- Skin rash

As would be expected, people who spend time outdoors in tick infested areas are at an increased risk of getting babesiosis. **The disease is more severe in the elderly and in people who have weakened immune systems, especially those who have had their spleen removed.**

For those with symptoms, treatment with a combination of quinine and clindamycin or a combination of atovaquone and azithromycin may be used.

**Human granulocytic anaplasmosis/ehrlichiosis (HGA/HE)**

This infection is caused by a bacterium. This bacteria invades and lives within white blood cells called granulocytes. Much like babesiosis, symptoms are mostly nonspecific, and the illness can range from very mild to very severe; although most people will not have symptoms. People who become sick may get symptoms within 7-21 days after the tick bite. Most patients will experience the following symptoms:

- Rapid onset of fever
- Shaking
- Chills
- Muscle or joint pain
- Severe headache

Less frequent symptoms may include:

- Malaise
- Nausea
- Vomiting
- Acute weight loss
- Skin rash

Diagnosis can be made through blood tests. One test will be done when you first get sick, and the second in about 4-6 weeks. Again, people who spend time outdoors and expose themselves to ticks in infested areas are at an increased risk of becoming infected.

HGA/HGE can be effectively treated with antibiotics like doxycycline.
Rocky Mountain Spotted Fever (RMSF)

This infection is caused by *Rickettsia rickettsii* and is not very common in Connecticut. Most patients will experience symptoms within 2 weeks of a tick bite and include:

- Sudden onset of moderate to high fever (which can last for 2 or 3 weeks)
- Severe headache
- Fatigue
- Deep muscle pain
- Chills
- Rash, which begins on the legs or arms, may include the soles of the feet or palms of the hands and may spread rapidly to the trunk or rest of the body.

Diagnosis is confirmed by a blood test. Treatment includes antibiotics like tetracycline or chloramphenicol.

Tularemia

Tularemia is a disease of animals and humans caused by the bacterium *Francisella tularensis*. Rabbits, hares, and rodents are especially susceptible and often die in large numbers during outbreaks. Humans can become infected through several routes, including:

- Tick and deer fly bites
- Skin contact with infected animals
- Ingestion of contaminated water
- Inhalation of contaminated aerosols or agricultural dusts
- Laboratory exposure

In addition, humans could be exposed as a result of bioterrorism.

Symptoms vary depending on the route of infection. Ulceroglandular is the most common form of Tularemia and is acquired via tick and insect bites. Usually, the vector is a tick, but deer flies and sometimes mosquitoes can also transmit *F. tularensis*. A skin ulcer develops at the site of infection. Although tularemia can be life-threatening, most infections can be treated successfully with antibiotics. Some people can develop an allergic reaction to red meat if they have Tularemia.

- A skin ulcer that forms at the site of infection — usually an insect or animal bite.
- Swollen and painful lymph glands.
- Fever.
- Chills.
- Headache.
- Exhaustion.

(source: [www.mayoclinic.org/diseases-conditions/tularemia/basics/symptoms/con-20028009](https://www.mayoclinic.org/diseases-conditions/tularemia/basics/symptoms/con-20028009))

Steps to prevent tularemia include:

- Use of insect repellent
- Wearing gloves when handling sick or dead animals
- Avoiding mowing over dead animals

In the United States, naturally occurring infections have been reported from all states except Hawaii. (Source: [https://www.cdc.gov/tularemia/](https://www.cdc.gov/tularemia/))
Powassan Virus

“Powassan (POW) virus is transmitted to humans by infected ticks. Approximately 75 cases of POW virus disease were reported in the United States over the past 10 years. Most cases have occurred in the Northeast and Great Lakes region.” (source: [https://www.cdc.gov/powassan/index.html](https://www.cdc.gov/powassan/index.html))

Symptoms

- Many people who become infected with Powassan (POW) virus do not develop any symptoms.
- The incubation period (time from tick bite to onset of illness) ranges from about 1 week to 1 month.
- POW virus can infect the central nervous system and cause encephalitis (inflammation of the brain) and meningitis (inflammation of the membranes that surround the brain and spinal cord).
- Symptoms can include fever, headache, vomiting, weakness, confusion, loss of coordination, speech difficulties, and seizures.
- Approximately half of survivors have permanent neurological symptoms, such as recurrent headaches, muscle wasting and memory problems.
- Approximately 10% of POW virus encephalitis cases are fatal.

Treatment

- There are no vaccines or medications to treat or prevent POW virus infection.
- If you think you or a family member may have POW virus disease, see your health care provider for evaluation and diagnosis.
- Persons with severe POW illnesses often need to be hospitalized. Treatment may include respiratory support, intravenous fluids, and medications to reduce swelling in the brain.

Signs and symptoms of infection can include fever, headache, vomiting, weakness, confusion, seizures, and memory loss. Long-term neurologic problems may occur. There is no specific treatment, but people with severe POW virus illnesses often need to be hospitalized to receive respiratory support, intravenous fluids, or medications to reduce swelling in the brain.

You can reduce your risk of being infected with POW virus by using tick repellents, wearing long sleeves and pants, avoiding bushy and wooded areas, and doing thorough tick checks after spending time outdoors. If you think you or a family member may have POW virus disease, it is important to consult your healthcare provider.”

(Source: [https://www.cdc.gov/powassan/index.html](https://www.cdc.gov/powassan/index.html))
**Tick Prevention, Tick Checks, Tick Removal and Monitoring Tick Bites**

**3 Tips to Prevent Tick Bites**

1. Wear light-colored clothes to help spot ticks easier

2. Wear long-sleeve shirts, pants, and long socks which you can tuck your pant legs into

3. Use EPA-approved repellent

**Sources:**
Department of Public Health (DPH)
U.S. Environmental Protection Agency (EPA)

**Tick Hotspots**

- in and around ears
- in hair
- under arms
- inside of belly button
- around waist
- behind knees

**Source:** Centers for Disease Control and Prevention
www.cdc.gov/ticks
**Action Steps to Take if you Find a Tick Attached to Your Body:**

1. Remove the tick with tweezers or forceps (“Do not use petroleum jelly, hot matches, nail polish remover, or any other substance to remove a tick. By using these substances, you may actually increase your chance of infection (source: http://www.ct.gov/dph/cwp/view.asp?a=3136&q=528464).”)

2. Put the tick in a Ziplock bag so species can be confirmed and so tick can be sent for testing if needed.

3. Wash area and your hands with soap and water.
4. Swab the bite area with alcohol

5. Take a picture of bite area to monitor for changes over time.

6. Write on a calendar the date and time the tick was removed.

7. Report tick bite to your dorm faculty and/or nursing staff within 24 hours of bite.

8. Seek medical attention if you feel ill after a tick bite.

For more details with respect to preventing tick bites and/or illustrated guides to tick posters please refer to the dorm bulletin boards and the school’s website. Please also refer to the CDC’s website: https://www.cdc.gov/ticks/index.html