



Sheila Miller, RN

Sharon Health Department

TICK BORNE DISEASES

101

TICK BORNE DISEASES 101

- ✘ TICK FACTS AND LIFE CYCLE
- ✘ TICK BORNE DISEASES IN MASSACHUSETTS
- ✘ PREVENTION AND TREATMENT OF TICK BORNE DISEASES

DEER VS. DOG TICK

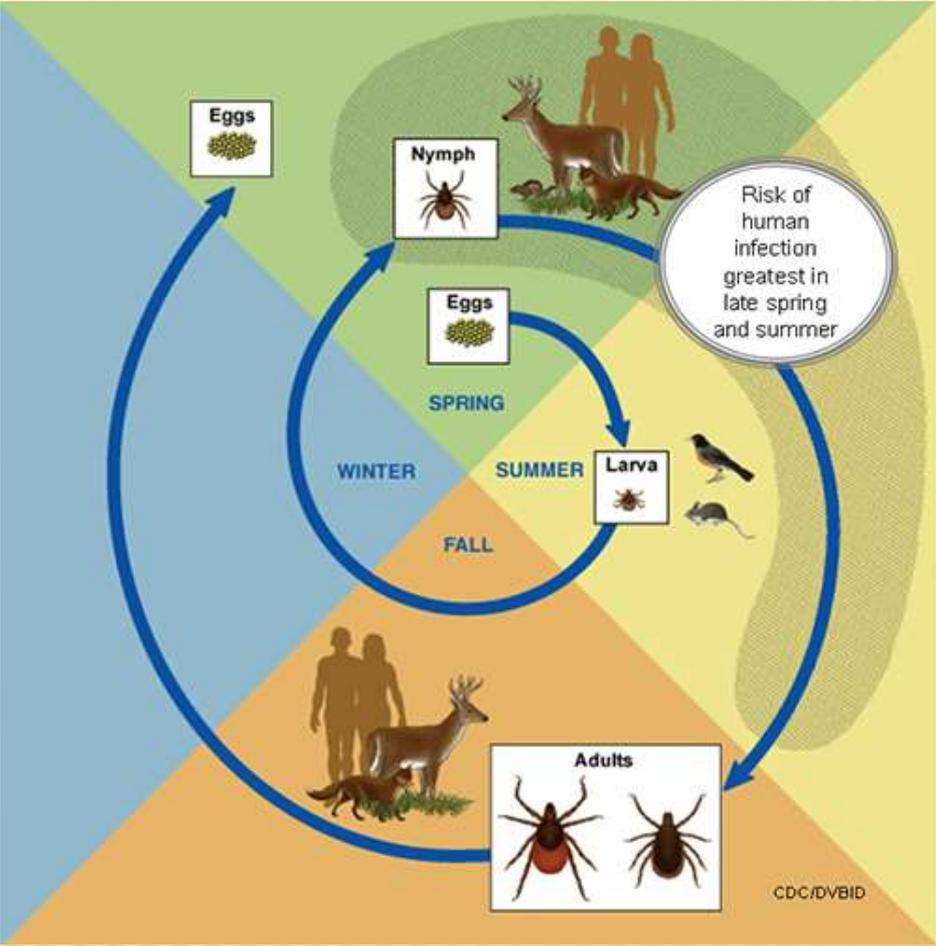
✘ Ixodes Scapularis



✘ Dermacentor Variabilis



LIFE CYCLE



TICK HABITAT

Wood piles attract rodents. Mice are the primary culprits for producing infected ticks. The separation between TickRisky zones and TickSafe zones on your property can be a single step.





TICK BORNE DISEASES IN MASSACHUSETTS

✘ DEER TICKS (*Ixodes Scapularis*)

- + Lyme disease

- + Babebiosis

- + Anaplasmosis

- + Powassan Virus

TICK BORNE DISEASES IN MASSACHUSETTS (CONT')

✘ DOG TICKS (*Dermacentor Variabilis*)

+ Tularemia

+ Rocky Mountain Spotted Fever

LYME DISEASE

- ✘ A bacterial disease that is transmitted to humans and animals by an infected deer tick



LYME DISEASE

✘ Early Signs and Symptoms (3-30 days after bite)

- ✘ Fever, chills, headache, fatigue, muscle and joint aches, and swollen lymph nodes
- ✘ Erythema Migrans (EM) rash
 - + Occurs in approximately 70-80% of infected persons
 - + Begins at site of a tick bite after a delay of 3-30 days (average 7 days)
 - + Expands gradually over a period of days
 - + Sometimes clears as it enlarges, resulting in target or “bull’s eye” rash

LYME DISEASE (CONTINUED)

- ✘ Later signs and symptoms (days to months after tick bite)
- ✘ Severe headaches and neck stiffness
- ✘ EM rash on other areas of the body
- ✘ Facial or Bell's palsy
- ✘ Heart palpitations or irregular heart beat
- ✘ Dizziness or shortness of breath
- ✘ Problems with short-term memories

LYME DISEASE (CONTINUED)



"Classic" erythema migrans rash



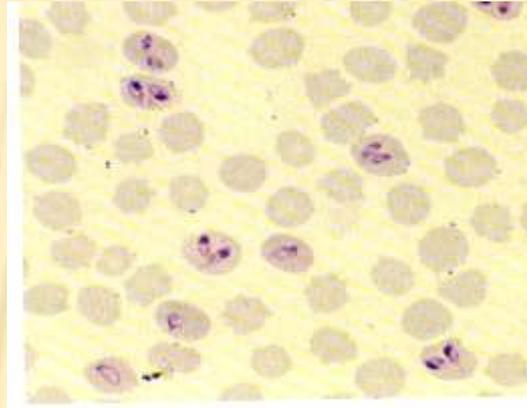
Facial palsy



Swollen knee

BABESIOSIS

- ✘ Caused by a parasite that affects red blood cells



- ✘ Cases occur on Cape Cod, Martha's Vineyard, and Nantucket

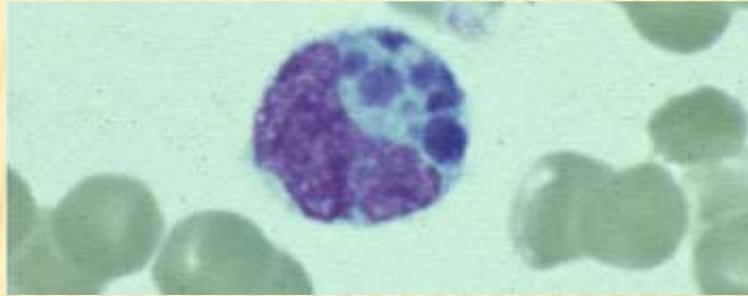
BABESIOSIS (CONTINUED)

SIGNS AND SYMPTOMS

- ✘ No symptoms or mild signs of illness.
- ✘ When symptoms do occur – gradual and begin 1-6 weeks after being bitten
 - + Fever, chills, fatigue, headache, nausea, abdominal pain and dark urine
 - + Complications can include: anemia, low and unstable blood pressure, and thrombocytopenia (low platelet count)

ANAPLASMOSIS

- ✘ Caused by a bacteria that affects the White Blood Cells



- ✘ Found in Cape Cod, Martha's Vineyard, Nantucket, and in Berkshire County

ANAPLASMOSIS (CONTINUED)

- ✘ Symptoms of fever, headache, muscle aches, chills, nausea, and vomiting can occur
- ✘ Elevated LFTs (Liver Function Tests)
- ✘ Anemia
- ✘ Leukopenia (low White Blood Cells)
- ✘ Thrombocytopenia (low Platelets)

DISEASES FROM DEER TICKS

- ✘ Tick borne illness caused by the **Borrelia Miyamotoi** Bacteria
 - + According to the CDC – “closely related to tick borne relapsing fever and distantly related to the bacteria that cause Lyme Disease”
 - + Uncommon to see Bull’s Eye rash

- ✘ **Powassan Virus**
 - + Tick borne viral illness found in NE and Great Lakes Region
 - + 60 cases over the past 10 years
 - + Virus can cause encephalitis or inflammation of the brain and treatment is supportive care

DISEASES FROM DOG TICKS

× ROCKY MOUNTAIN SPOTTED FEVER

- × Bacterial Disease
- × Rare in MA, but can be found in the SE, CC, & MV
- × Symptoms 3-5 days
- × Symptoms: high fever, severe headache, & fatigue
- × 3-5 days after fever onset: rash spreads to the palms of the hand and soles of the feet.

× TULAREMIA

- × Bacterial disease
- × Found on Cape Cod, Martha's Vineyard, and Nantucket
- × Symptoms 3-5 days but up to 3 weeks
- × Symptoms: slow-healing sore and swollen glands

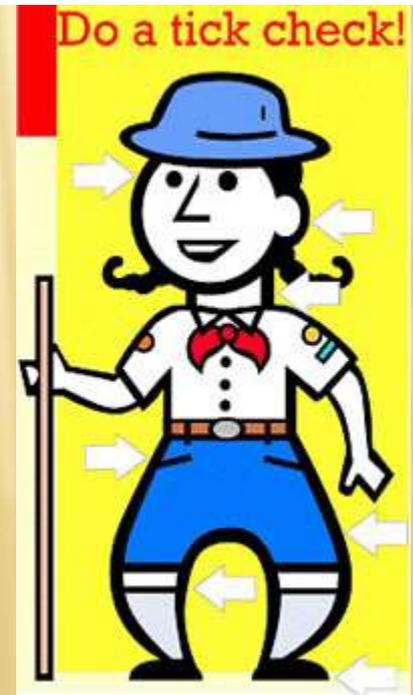
PREVENTION



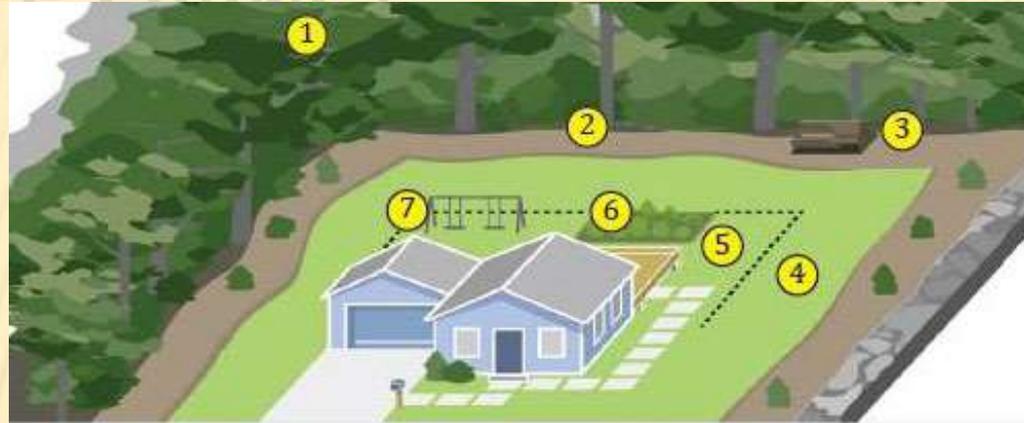
"Are you sure you don't want to use my bug spray?"



Image: Nantucketchamber.org



TICK FREE LIVING!

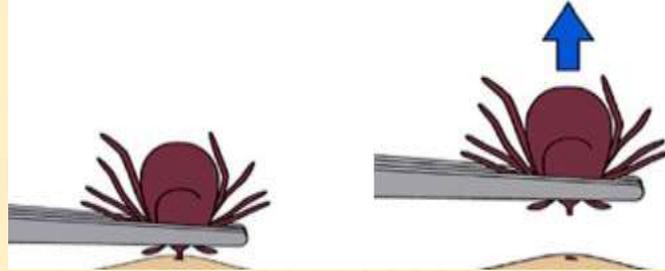


- 1 Tick zone** Avoid areas with forest and brush where deer, rodents, and ticks are common.
- 2 Wood chip barrier** Use a 3 ft. barrier of wood chips or rock to separate the "tick zone" and rock walls from the lawn.
- 3 Wood pile** Keep wood piles on the wood chip barrier, away from the home.
- 4 Tick migration zone** Maintain a 9 ft. barrier of lawn between the wood chips and areas such as patios, gardens, and play sets.
- 5 Tick safe zone** Enjoy daily living activities such as gardening and outdoor play inside this perimeter.
- 6 Gardens** Plant deer resistant crops. If desired, an 8-ft. fence can keep deer out of the yard.
- 7 Play sets** Keep play sets in the "tick safe zone" in sunny areas where ticks have difficulty surviving.

Based on a diagram by K. Stafford, Connecticut Agricultural Experiment Station

TREATMENT

- ✘ Remove tick



- ✘ Thoroughly clean the bite area and hands with rubbing alcohol, an iodine scrub, or soap and water.
- ✘ If you develop a rash or fever within several weeks of removing a tick, see your doctor. Be sure to tell the doctor about your recent tick bite, when the bite occurred, and where you most likely acquired the tick.

REFERENCES

- × www.niaid.nih.gov/topics/lymedisease
- × www.mass.gov/dph
- × www.cdc.gov
- × <http://www.cdc.gov/lyme/resources/TickborneDiseases.pdf>

