



Lyme Disease Prevention Program

Ridgefield Health Department

BLAST Program Goals

- To promote awareness of tick-borne disease prevention practices that individuals may adopt.
- To educate the public about early signs and symptoms of tick-borne diseases to encourage timely diagnosis and treatment.

What is BLAST?



BLAST is the easy to remember acronym which represents the 5 most effective prevention measures that YOU can take to avoid getting a tick-borne disease.

What are Tick-Borne Diseases?

- Several diseases can be acquired from the bite of an infected tick:
 - Lyme Disease
 - Babesiosis
 - Ehrlichiosis



Lyme Disease

- Lyme disease is a bacterial infection caused by the spirochete *Borrelia burgdorferi*.
- This organism attacks various organ systems in the body:
 - Nervous System (*Bell's palsy, meningitis, jabbing pain*)
 - Activity System (*arthritis, migratory, joint pain, swelling*)
 - Circulatory System (*heart block, rhythm abnormalities*)



Lyme Disease Symptoms

- Symptoms typically appear 2 – 30 days after the bite of an infected tick.
- Early symptoms:
 - Expanding "bull's-eye" rash
 - Flu-like Symptoms
 - Fever
 - Malaise
 - Fatigue
 - Headache
 - Muscle aches
 - Joint aches



Lyme Disease Symptoms (cont.)

Examples of the characteristic "bull's-eye" rash:



L. Zemel



S. Luger



J. Stratton



A. McDonald

Lyme Disease Symptoms (cont.)

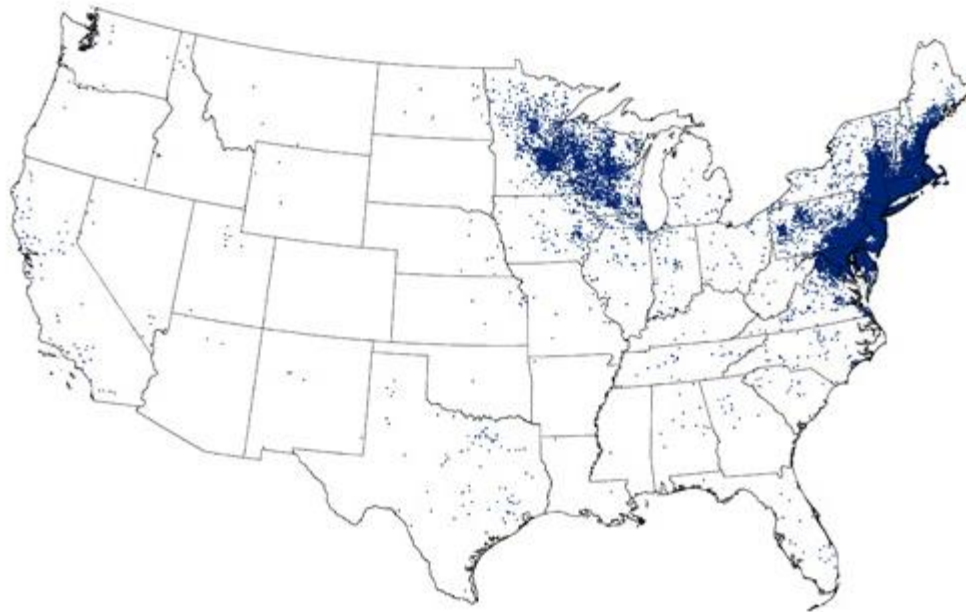
- Late symptoms of Lyme may include:
 - Nerve damage
 - Encephalopathy (brain disease)
 - Meningitis symptoms
 - Heart abnormalities
 - Severe joint pain or swelling



Swollen knee of a youth with Lyme arthritis.

Lyme Disease in the United States

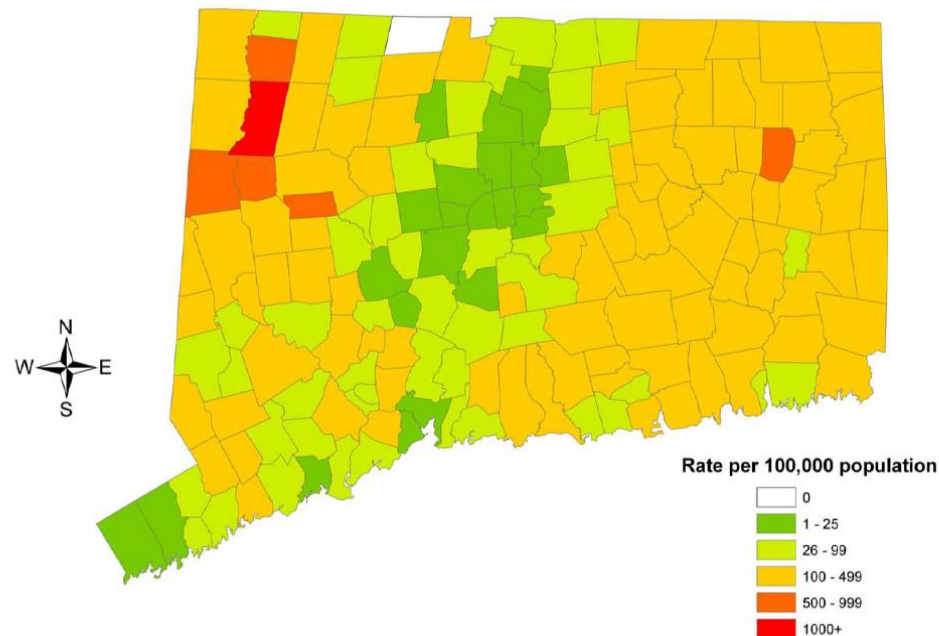
Reported Cases of Lyme Disease -- United States, 2007



1 dot placed randomly within county of residence for each reported case

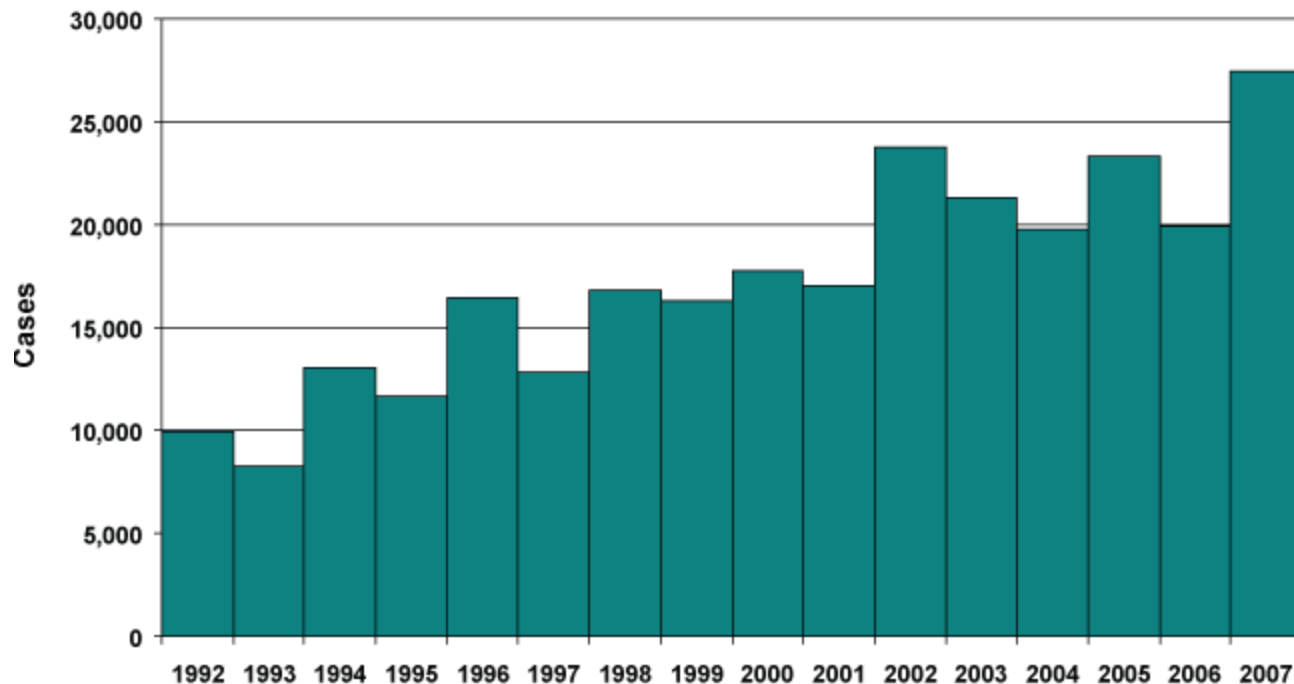
Lyme Disease in Connecticut

Lyme Disease Incidence by Towns - Connecticut, 2007



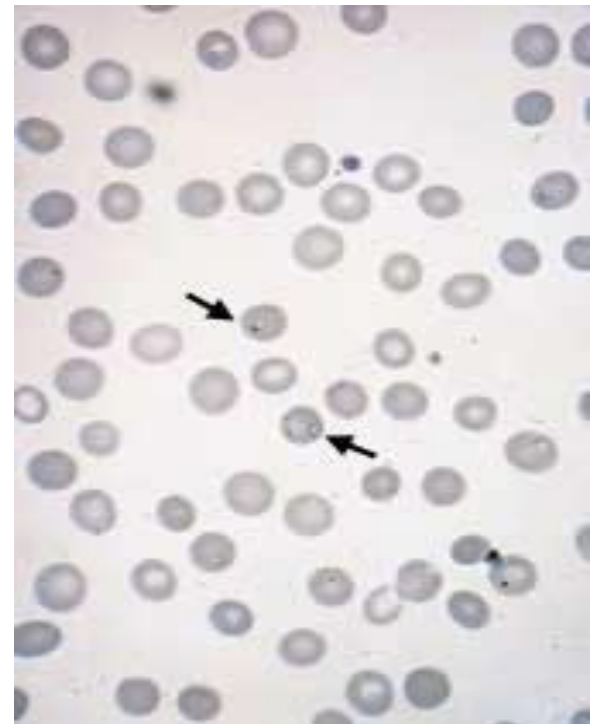
Lyme Disease is on the rise...

Reported Cases of Lyme Disease by Year, United States, 1992-2007



Babesiosis

A malaria-like illness caused by parasite of the genus *Babesia*, which attacks red blood cells



<http://www.aafp.org>

Arrows indicate infected RBCs

Babesiosis Symptoms

Early symptoms:

- Tiredness
- Loss of appetite
- General ill feeling

Late symptoms:

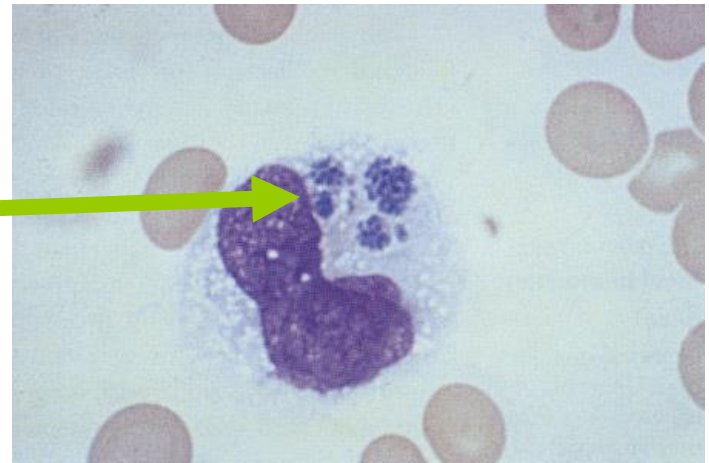
- Spiking fever
- Drenching Sweats
- Muscle Aches
- Headache

*Symptoms may take 1-6 weeks to appear after a tick bite
(Babesiosis is less common than Lyme disease)

Ehrlichiosis

- A disease caused by several bacterial species of the genus *Ehrlichia*, which attack specific white blood cells in the body.

Note the clumps of Ehrlichia in a white blood cell



<http://www.clevelandclinicmeded.com>

Ehrlichiosis (cont.)

There are 2 types of Ehrlichiosis described in the US:

1. Human Monocytic Ehrlichiosis (HME)
transmitted by the lone star tick
2. Human Granulocytic Ehrlichiosis (HGE*)
transmitted by the black-legged tick and the western black-legged tick

*HGE is now referred to as **Anaplasmosis**

Ehrlichiosis (Anaplasmosis) Symptoms



- Severe headaches
- Sudden high fever
- Fatigue
- Muscle aches
- Nausea
- Rash

*Symptoms usually appear 3-16 days after a tick bite
(Anaplasmosis is less common than Lyme disease)

Ehrlichiosis (Anaplasmosis) Symptoms (cont.)

- Severe cases of Anaplasmosis may result in:
 - Low white blood cell count
 - Low platelet count
 - Kidney failure
 - Death

Ehrlichiosis in the United States



Are there any vaccines?

- There was a vaccine for Lyme Disease several years ago, but it is no longer available.
- If you were previously vaccinated for Lyme Disease you are NO LONGER protected.
- There are NO vaccines available for any of the Tick-Borne Diseases, so PREVENTION is key!

What do Ticks Look Like?



Black-Legged Ticks

- Adult Female: Reddish body size comparable to a sesame seed
- Adult Male: Slightly smaller than female, completely dark brown
- Nymphs: Size comparable to that of a poppy seed
- Larva: Size smaller than that of a pin head



From left to right: Adult female, adult male, nymph, larva

Larva cannot transmit Lyme Disease!

American Dog Tick

- Reddish-brown coloring
- Silver-grey marking on its back
- Moves around vigorously
- May cause Rocky Mountain Spotted Fever, but does not carry the Lyme Disease bacteria



Male and female American dog tick
NC Dept. of Natural and Environmental Resources

Lone Star Tick

- Conspicuous white marking
- Reddish-brown color
- More circular in shape
- Elongated mouthparts
- May transmit Ehrlichiosis or STARI



Male and female Lone Star Tick

NC Dept. of Natural and Environmental Resources

The Tick Life Cycle

Year One

Year Two

Spring Summer Autumn Winter Spring Summer Autumn Winter

eggs

larvae

nymphs

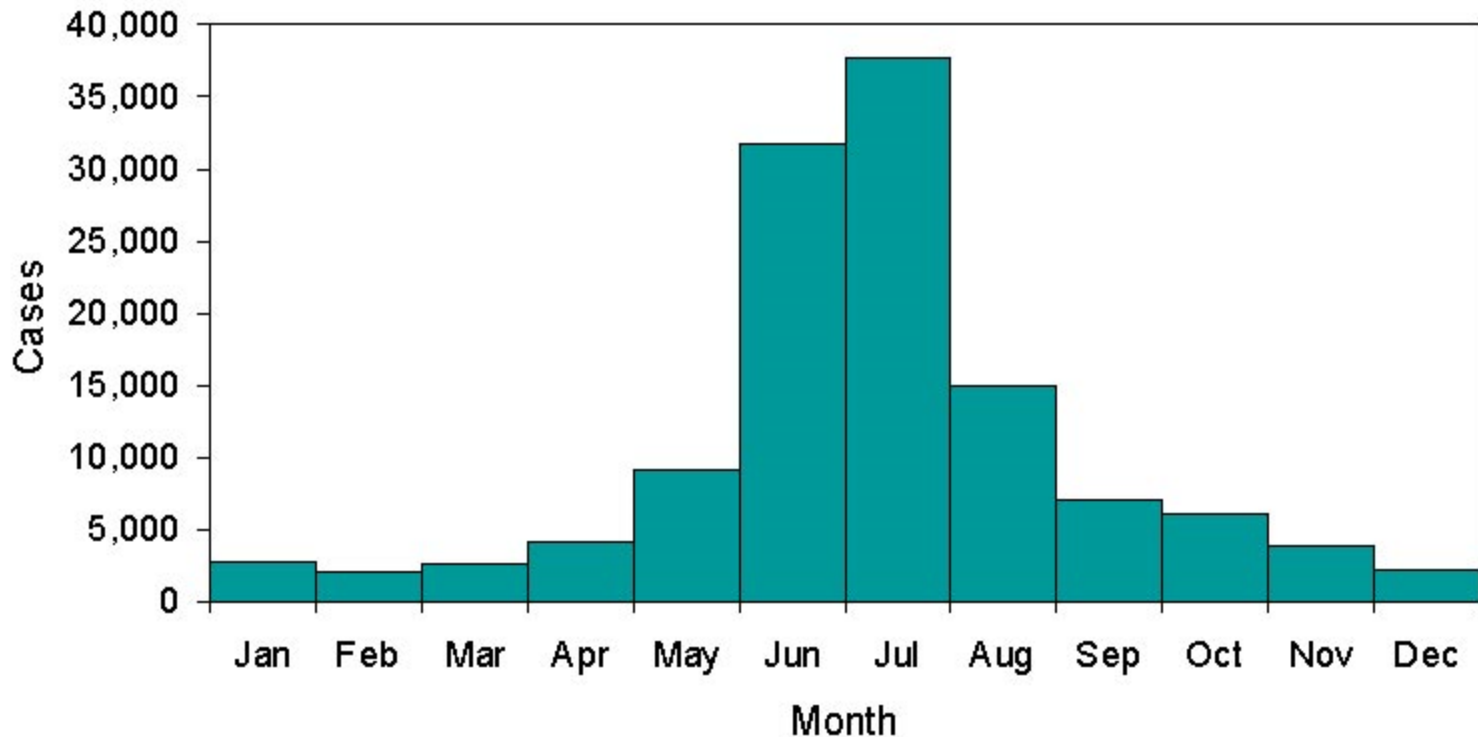
adults



Adults mate,
produce eggs & die

When am I most likely to get a Tick-Borne Disease?

Reported Cases of Lyme Disease by Month of Illness Onset United States, 1992-2004



Engorged Ticks



Where do ticks live?

Ticks thrive in shady, moist areas



Tick Removal

- Use fine tipped tweezers.
- Grasp the tick by the mouthparts close to the skin.
- Pull straight back with a slow, steady force.
- Avoid crushing the tick's body.
- Wash area and disinfect the bite site.
- Record the date and location of the bite.
- Watch for early symptoms!



Tick Removal DON'Ts

Don't squeeze or rupture the tick.

Don't pour kerosene or nail polish remover on the tick.

Don't rub Vaseline or Petroleum Jelly on the tick.

Don't use a smoldering match or cigarette but.

Don't do ANYTHING that might otherwise traumatize the tick.

How do you avoid getting a tick bite?





BLAST Program Foundation

- The BLAST acronym is based on the most effective prevention practices found in recent research performed by:

Neeta Pardanani Connally, MSPH, Ph.D., Yale University School of Medicine Department of Epidemiology & Public Health, Connecticut Emerging Infections Program

Kirby C. Stafford III, Ph.D., Vice Director, Chief Entomologist, Connecticut Agricultural Experiment Station, Department of Entomology

BLAST

Bathe or Shower soon after coming indoors



BLAST



Look for Ticks and Rashes

- Tick bites are usually painless, therefore most people are unaware when they have a tick attached to them.



- Do a tick check every night!
- Ticks are very small, and may feed anywhere on the body so check thoroughly.

BLAST

Apply Repellents

SKIN

If you choose to use a tick repellent on your skin, we recommend using a product that contains *DEET* at a concentration of at least 30% - 40%.



CLOTHING

A *permethrin* based product is recommended for clothing. It provides great protection against ticks!



BLAST

Spray the Edges of Your Yard



- A single *perimeter* spraying for tick control once in the Spring can reduce the number of ticks in your yard by up to 80% - 90%
- If you decide to spray your yard, it is best to hire a professional that is trained to do this job efficiently and safely.

BLAST

Treat Your Pets

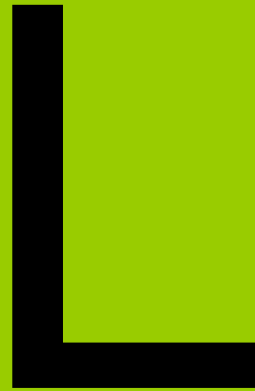
- Check your pets for ticks after coming indoors.
- Ask your vet what you can put on your pet to repel ticks.
- Don't sleep with your pet because ticks on your pet may crawl onto you.



Quiz Time!



B



A

S

T



Lyme Disease!

Be a LYME Fighter!

Together we can



Lyme Disease!

