Did you know that a single tick can make you sick and that ticks can transmit an illness called Lyme disease to you and to your pets? In this brief, online session, get ready to learn tons about ticks, the diseases that they carry, and how you can protect yourself and your pets from tick-borne illnesses. Ready? Let's go.
Navigating the Course

Let’s get started!

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Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Today’s topic

Over the next half-hour, we will review the following topic:

- Tick-er Tape Parade:
  What are ticks and what do they look like?

Other modules available in this series are:

- Module 1: What is Lyme disease?
- Module 3: Keeping ticks at bay when you go out to play
- Module 4: Testing and treatment for Lyme disease

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Topic 2

Tick-er Tape Parade:

What are ticks and what do they look like?
Tick-er Tape Parade

We’ve heard a lot about ticks in the previous module. Now let’s meet some of these culprits up close and personal.

The photos on the next several slides show ticks in comparison to real world objects. This will give you an idea of how small these spider-like creatures really are.

Take a look....

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Tick-er Tape Parade: Deer Tick

From left to right:
The female, male and nymph deer tick.

ETYMOLOGY ALERT
Nymph | The immature form of an insect that does not change greatly as it grows.

Originally from the Greek *numphē*, nymph or bride.

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Tick-er Tape Parade: Deer Tick

Here are some ticks compared to sesame seeds.

Notice how the adult female is about the same size as a sesame seed.

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Tick-er Tape Parade: Deer Tick

From left to right:
The female, male, and nymph.

Here are some ticks compared to poppy seeds (white).

Note that the nymph ticks at the bottom of the slide are about the same size as the poppy seeds.

Photo courtesy of Jama L. Coci, MA, MC

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Tick-er Tape Parade:
Western Black Legged Tick

Here is our West Coast friend, the Western black legged tick.

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Tick-er Tape Parade: American Dog Tick

Here’s the American dog tick.

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Tick-er Tape Parade: The Lone Star Tick

Here’s the lone star tick.

From left to right:
A nymph, male and female.

Photo courtesy of James L. Osci, MA, MS

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Tick-er Tape Parade:
American Dog Tick, Deer Tick and Lone Star Tick

Not all kinds of ticks look the same.

Notice the differences in the colors, size and markings of each kind of tick.

Top row from left:
A female American dog tick and a female deer tick.

Bottom row from left:
A nymph, male and female Lone star tick.

Photo courtesy of James L. Ceci, MA, MS

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Tick-er Tape Parade: 
American Dog Tick, Deer Tick and Lone Star Tick

Don’t let the differences fool you. 
Each of these ticks can carry dangerous diseases.

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
The Tick Life Cycle

We expect different species of ticks to look different. However, the same tick can look different at different stages in its life.

A deer tick nymph.  versus  An adult female deer tick.

REMEMBER:
Even though they look different, both of these ticks still can infect a human or animal with disease.

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Tick-er Tape Parade: Deer tick life cycle

Here are images of deer ticks at every stage in the tick life cycle.

Check it out....

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Tick-er Tape Parade: Deer tick life cycle

You start with an EGG—or in this case, thousands of them!

The eggs hatch into LARVAE, then molt to become NYMPHs, and finally grow to adulthood, like the ones shown here.

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Tick-er Tape Parade: Deer tick life cycle

1. Egg mass
2. Larva
3. Nymph
4. Male adult
5. Female adult
6. An engorged* female

* Engorged means that the tick is filled with blood after feeding on a host.

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Tick-er Tape Parade: Ticks laying eggs

Here’s a lone star tick laying eggs.

Photo courtesy of James L. Cozzi, MA, MS

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Tick-er Tape Parade: Fed and unfed ticks

From left to right:

A well-fed female deer tick, a straight pin, and an unfed female adult deer tick.

Photo courtesy of James L. Ucci, MA, MS

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Tick-er Tape Parade: Fed and unfed ticks

A fed lone star tick, far left, and various types of unfed ticks.

Photo courtesy of James L. Osto, MA, MS

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Tick-er Tape Parade: Fed and unfed ticks

Lone star ticks in various stages of feeding.

Photo courtesy of James L. Codd, MA, MD

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Deer tick life cycle

Typical Tick Life Cycle

Third Host
Adult tick
attaches and feeds on third host

Second Host
Nymph attaches and feeds on second host

Egg hatches to larva
Adult female dies
after feeding on tick

First Host
Larva feeds on the first host

Larva seeks new host
Fully fed larva
matures to nymph

Larva moults to nymph
Nymph moults to adult

Nymph feeds to adulthood

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Deer tick life cycle

We’ve talked about how ticks transmit Lyme disease to pets and humans.

But how does the tick contract the bacteria in the first place?

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
White-footed mouse

Meet the
WHITE-FOOTED MOUSE.

Larval and nymph ticks can get the Lyme bacteria and other bugs after dining on a mouse like this one.

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Deer provide a meal on the go

Deer are also part of the tick life cycle.

They provide meals — and transportation — for ticks.

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Deer provide a meal on the go

Here is a close-up of a deer's ear covered with ticks.

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Ticks and children

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html

Lyme disease is most common in children between the ages of 5 and 9 years old.*

*According to the Centers for Disease Control and Prevention.
Where do you find ticks?

- Wooded areas
- Where woods meet the lawn
- Tall brush and grass
- Under leaves
- Under ground cover plants in the yard
- In stone walls and woodpiles
- Seldom on cut and raked lawns
- Under plants and leaves (to prevent dehydration)

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Where do you find ticks?

Ticks like to hide in cool places and tend to avoid very sunny spots, to prevent dehydration.

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
How do ticks get on you?

Many ticks, such as the deer tick and the American dog tick, climb small plants. Then they attach themselves to passing animals and people who brush against the plant.

When a tick uses this method of finding a host, it is called QUESTING.

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
How do ticks get on you?

This American dog tick is questing on a blade of grass, like a tiny hitchhiker waiting at an off ramp for a ride.

Photo courtesy of James L. Coss, MA, MS

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
How do ticks get on you?

Here is a deer tick, questing on a plant.

Photo courtesy of James L. Oski, MA, MS

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
How does the tick eat?

The tick follows these steps to get a meal:

1. Spits a substance that numbs your skin
2. Cuts you open
3. Inserts its hollow straw-like hypostome to suck your blood

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
How does the tick eat?

The tick follows these steps to get a meal:

4. Spits a glue-like substance to cement itself to your body
5. Sucks your blood
6. During feeding, bacteria and other disease organisms in the tick flow into you

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
Up close and personal

The business end of the tick, a.k.a., the HYPOSTOME.

This is a magnified view of the straw-like structure (with barbs) that the tick uses to suck your blood.

Pronunciation Guide:

http://lymediseaseassociation.org/ledu/pron_guide.html
You have reached the end of Module 2:
Tick-er Tape Parade:
What are ticks and what do they look like?
If you have questions about any of the topics that we’ve discussed today, the LDA website, www.LymeDiseaseAssociation.org, offers lots of information so that you and your family can learn more!

In the meantime, be well and stay safe!
THANKS!

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