



# Q&As with our guest experts

On March 1<sup>st</sup> and 2<sup>nd</sup>, 2016, the Canadian Veterinary Medical Association, in partnership with Merck Animal Health, produced two regionally focused webinars to help launch Canada's first-ever **National Tick Awareness Month**.

Below you'll find the "top 10" questions submitted as well as the answers graciously provided by our guest experts.

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## 1. HOW DOES AN AREA GET LABELED AS "ESTABLISHED" WITH BLACKLEGGED TICKS OR "ENDEMIC" FOR LYME DISEASE? WHO MAKES THIS DECISION?

For an area to be considered to have an established blacklegged tick population, all life stages of this parasite must be found for two consecutive years by active surveillance (i.e., going out into the woods and dragging for ticks). In addition, *Borrelia burgdorferi* must be found both in ticks (nymphs and adults) and circulating in the blood of small mammals (white-footed mice mostly) for an area to be considered endemic for Lyme disease.

The original criteria used to define an area as endemic were developed in 1991 by the federal government, in partnership with provincial public health authorities. Since there were relatively few blacklegged tick populations established in Canada at that time, a high standard was set to ensure that only areas with bona fide tick populations were included. However, this definition was a poor indicator of where ticks were emerging because it required a population to be present for at least two years before being considered established.

With the rapid expansion of blacklegged tick populations in Canada, a simpler and more cost-effective means of assessment was developed, based primarily on the outcomes of drag sampling.

Areas where blacklegged ticks can be detected by drag sampling are defined as Lyme disease "risk areas," and their geographic extent is defined by provincial public health authorities. In most cases, risk areas include the site(s) where ticks are collected, as well as an additional buffer zone (usually 20 to 25 km in radius) around the collection site(s).

Using these new criteria, it has been possible to document the expansion of ticks into new areas more rapidly than in the past.

## 2. OUR VETERINARY CLINIC IS LOCATED IN AN *IXODES SCAPULARIS* TICK ENDEMIC AREA. TEMPERATURES ARE FLUCTUATING AND HAVE AT TIMES REACHED +4°C. WHEN SHOULD WE START USING TICK PREVENTIVE PRODUCTS?

First, it is important to make pet owners aware that ticks are active when the thermometer reaches 4°C and over, and that they should check themselves and their dogs for ticks daily when temperatures are above the freezing mark.

When we have days during which temperatures are consistently above 4°C – as was the case, for example, this past December or late March, in most parts of Canada – it makes sense to start (or in the case of this past December, to continue) using preventive products. In Lyme disease risk areas, and in the case of clients who travel to these areas, vaccination should also be considered.



Ideally, when controlling ticks and reducing the risk of disease transmission, a three-pronged approach is recommended, in this order:

- 1) Vigilance/daily tick checks.
- 2) Preventive products, if the weather is appropriate for tick activity.
- 3) Vaccination, if there is a significant risk of exposure (i.e., a pet living in an established Lyme disease area, or travelling to or through a risk area).

Given that current winter temperatures can fluctuate widely and that it is not uncommon for them to rise above freezing, and even above 4°C, recommending year-round tick control is a logical conclusion in many locations in North America.

### **3. SHOULD WE REGULARLY BE SUBMITTING TICKS TO THE NATIONAL MICROBIOLOGY LABORATORY (OR A SIMILAR FACILITY) FOR IDENTIFICATION?**

It really depends on your location. If you are in an area where tick populations are in the process of being established, this would be of interest. If, however, you are in an area where *Ixodes* ticks are well established, submitting ticks for identification is of less interest.

Local public health units vary dramatically – some want all ticks to be submitted for identification and testing, while others do not want any. It really depends on where you are located. That is why it is recommended to check with your local public health unit to find out about their current policy and whether or not they encourage tick submissions from your area.

### **4. WHAT ABOUT AREAS WHERE WE DO NOT HAVE A WHITE-TAILED DEER POPULATION? HOW CONCERNED SHOULD WE BE ABOUT TICK PREVENTION FOR OUR PETS?**

Because white-tailed deer play an important role in the establishment of blacklegged tick populations in a given location, jurisdictions in which these deer are completely absent (for example, Prince Edward Island) are not likely to support these ticks.

The reason white-tailed deer populations are so important is that they are the source of the vast majority of blood meals for adult female ticks, which drives the explosion of tick populations in a given location. Though deer may not be an endemic species in all parts of Canada, there may still be a few areas with isolated deer populations, such as provincial parks or private farms.

Since migratory birds will undoubtedly still bring ticks to these areas, there is certainly a risk there, and any small mammals (white-footed mice, raccoons, groundhogs, etc.) can allow the life cycle to continue, and tick populations to become established – although not as explosively as in areas inhabited by white-tailed deer.

Migratory birds are now recognized as playing a very important role in the widespread dispersal of *Ixodes scapularis* across eastern Canada. It has been estimated that millions of Lyme disease-infected *I. scapularis* are distributed across Canada every spring. Even in areas where white-tailed deer are absent, and where it is unlikely that large populations will become established, there can still be a risk of exposure to ticks brought in by birds.

### **5. HOW EFFECTIVE IS A LYME DISEASE VACCINE? WHAT VACCINE STRATEGY DO YOU RECOMMEND?**

All of the currently available Lyme disease vaccines do a fairly good job at preventing Lyme disease and seroconversion. That being said, each vaccine has its own specific attributes.

At Thousand Islands Veterinary Services, we use a three-pronged approach, and have had excellent success in preventing seroconversion and clinical disease.



In this order, we:

- 1) Educate clients about what ticks look like, and about the importance of checking themselves and their dogs for ticks on a daily basis.
- 2) Use a tick preventive product when we know there is a potential risk of exposure – ideally BEFORE ticks are found on dogs. (*It is predicted that, by the year 2020, 80% of the population in eastern Canada will live in areas with established blacklegged tick populations. The time to start implementing effective tick prevention programs in your area is now!*)
- 3) Consider vaccination in areas where there are well-established *Ixodes scapularis* tick populations nearby or moving in, or in dogs that often go to areas with well-established tick populations.

Rather than focusing on individual vaccines, we focus on the entire program, and have had excellent success.

## 6. ARE THERE ANY AREAS IN CANADA WITH ESTABLISHED *AMBLIOMMA AMERICANUM* POPULATIONS?

Populations of this tick have been moving northward in the eastern United States. *Amblyomma americanum* ticks (also known as Lone Star ticks) have been found in Wisconsin, Michigan, New York State, Maine, etc., and distribution maps show them coming close to the Canadian border.

Although *Amblyomma americanum* ticks can sporadically be found in Canada, at this time their numbers remain low and there are no known established populations. This may change in the future, given the progressive northward expansion of this tick species and its close association with white-tailed deer populations.

The expansion of this tick's range is currently being monitored.

## 7. IS THERE A WAY TO TELL TICKS APART WITHOUT HAVING TO SEND THEM TO A DIAGNOSTIC LABORATORY?



*Dermacentor variabilis*

You can learn how to identify ticks in your clinic! Looking at the scutum (the hard protective area on the back of the tick), as well as examining the mouthparts are two simple ways to determine if a tick is from the *Dermacentor* or *Ixodes* species.

*Dermacentor andersoni* and *D. variabilis* ticks have a brown and white, or ornate, scutum and short mouthparts. *Ixodes pacificus* and *I. scapularis* ticks, on the other hand, have a solid dark brown scutum and long mouthparts.



*Ixodes scapularis*

When female ticks take a blood meal, the appearance of their body can range from beige, to grey, to a deep purple/black at full engorgement, regardless of species. However, their scutum and mouthparts remain the same, which is why identification should be based on these parts rather than on the colour of their body.

There are several excellent resources available online to assist in the identification of ticks, including [www.tickcounter.org](http://www.tickcounter.org).

## 8. CAN CATS GET TICKS TOO? DO THEY GET LYME DISEASE?

Yes, cats can get ticks too. *Ixodes scapularis* will readily feed on cats. Although cats can seroconvert following exposure to *Borrelia burgdorferi*, at present it does not appear that they develop clinical disease.

That being said, large numbers of nymphal *Ixodes scapularis* have been found parasitizing cats, especially around the ear margins and eyelids. Infestations of this type can be quite debilitating to cats.



## 9. DO TICKS DIE IN THE WINTER?

Blacklegged ticks can survive exposure to air temperatures as low as -10°C. They weather the elements by hiding under leaf litter, other ground cover or snow cover, to protect themselves from extreme temperatures.

Even in parts of Canada where winters can be very cold, if snow cover is sufficient, ticks will remain dormant and become active again when temperatures are appropriate for them.

Typically, extremely cold and dry winters will result in considerable winterkill of ticks, whereas milder, snowier winters will increase their chances of survival. While there is always some degree of winterkill, the percentage of tick populations that die off can vary greatly from year to year.

## 10. I'M USED TO SEEING TICKS IN THE SPRING, MAINLY THE AMERICAN DOG TICK, AND HAVE FOCUSED PREVENTION EFFORTS ON THAT TIME OF YEAR. IF THERE IS *IXODES SCAPULARIS* IN MY AREA, SHOULD I CHANGE MY PARASITE-PREVENTION STRATEGY?

American dog ticks, or *Dermacentor variabilis*, tend to quest in the spring and summer only, starting in March-April and peaking in May-June. They are usually no longer questing by September. All stages (larvae, nymphs and adults) quest at roughly the same time.

*Ixodes scapularis*, on the other hand, can be active in colder weather. Adult *Ixodes scapularis* ticks can be active from early fall through to the spring, as long as temperatures are appropriate for questing.

Adult *Ixodes scapularis* ticks are active when temperatures are above 4°C – and even lower than this, according to some studies. Nymphs of this tick species quest in the spring and early summer, whereas larvae are more active in the summer months. In other words, there is rarely a month of the year during which you will be unable to find an *Ixodes scapularis* tick.

In areas where *Ixodes scapularis* can be found, an important first step in tick prevention is making pet owners aware of the fact that ticks can be active at 4°C and above, and that they should perform daily tick checks on themselves and on their dogs when temperatures are above the freezing mark. When we have days during which temperatures are consistently above 4°C – as was the case, for example, this past December or late March, in most parts of Canada – it makes sense to use preventive products.

In most parts of Canada, treatment from March to December should provide the protection dogs need for most of the tick risk period.

## THE VETERINARY COMMUNITY IS IN A UNIQUE POSITION TO TAKE A LEADERSHIP ROLE IN THE FIGHT AGAINST TICKS.

We invite you and your veterinary team to watch the **National Tick Awareness Month launch webinars**, that are available for online streaming on demand.

To view the presentation recordings, please go to

**[www.canadianveterinarians.net](http://www.canadianveterinarians.net)**

([www.canadianveterinarians.net/news-events/news/march-is-national-tick-awareness-month-join-our-free-webinars](http://www.canadianveterinarians.net/news-events/news/march-is-national-tick-awareness-month-join-our-free-webinars))



NATIONAL TICK AWARENESS MONTH is an initiative of the Canadian Veterinary Medical Association, in partnership with Merck Animal Health.