

# Of ticks and men (also women)



By Jo Seltzer, special to the Beacon

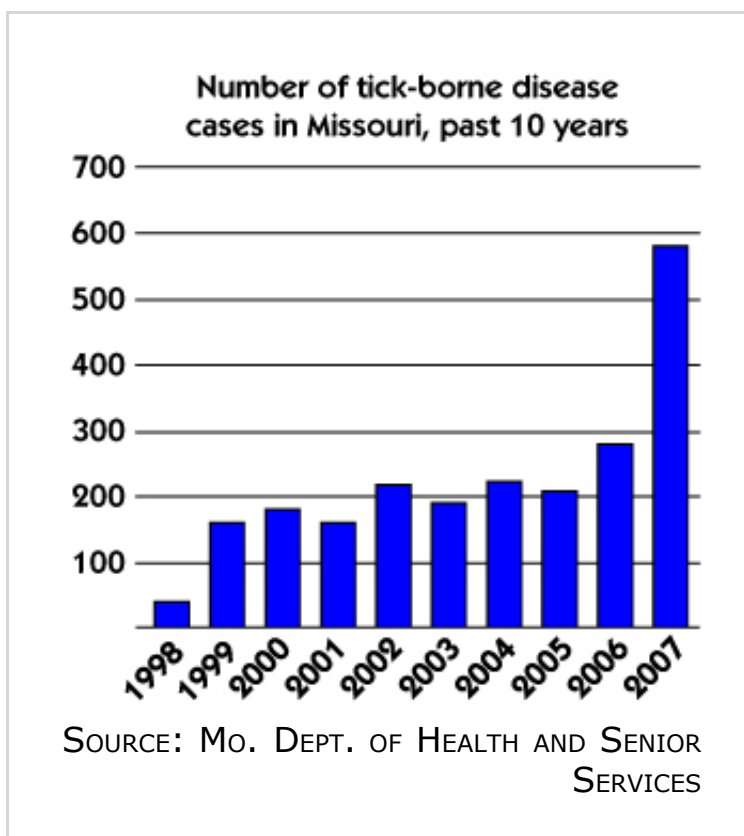
The 1002nd use for duct tape? Tape the bottom of your pants to the top of your hiking boots to keep ticks from crawling up your legs.

To many of us, summer outdoors in Missouri not only means lush forests and clear streams, but also ticks and chiggers. Both belong to the mite family of eight-legged creatures. But while chigger bites cause only intense itching, a tick bite can cause a serious disease.

Cases of the four major tick-borne diseases increased 222 percent over the five year median, according Missouri Department of Health and Senior Services.

The biggest increase was seen in cases of the bacterial infection ehrlichiosis, carried by the Lone Star Tick. This disease accounted for about 45 percent of all tick-borne diseases last year, and its incidence more than doubled from the previous year. Ehrlichiosis usually begins with fever and other flu-like symptoms. It can develop serious complications including seizures and renal failure if untreated, but fortunately can be easily treated with antibiotics.

Rocky Mountain spotted fever, primarily carried by the American dog tick, accounted for 54 percent of Missouri's tick-borne diseases last year. Lyme disease, transmitted by the Deer Tick, accounted for less than 2 percent, and Tularemia accounted for the remaining 6 percent. All of these diseases can also be treated with antibiotics. However, all are potentially life threatening if



untreated.

Because the Lone Star tick is the predominant species in the St. Louis area and in the eastern Ozarks, ehrlichiosis is the greatest threat locally. Most cases of Rocky Mountain spotted fever occur in southwest Missouri.

These are not equal opportunity infections, according to the statistics. Men are twice as likely as women to have a tick-borne disease, and the over-40 crowd gets three times as many as younger people.

## **MORE TICKS OR GREATER AWARENESS?**

Nobody really knows why tick-borne diseases are on the rise. It is possible that doctors and patients are more aware of the dangers from a tick bite; savvy patients suffering flu-like symptoms will report a recent tick bite to their physician.

More likely, the tick population has been growing. Brian Allan, a graduate student at Washington University, has been collecting ticks in the field for several years. He says that the tick census was higher in southern Missouri for 2007 when compared to 2006, and for 2005 compared to 2004.

So what would cause a tick population explosion? The most likely explanation is an increase in hosts -- small rodents, squirrels, rabbits and especially deer.

Edward Spevak, curator of invertebrates at the St. Louis Zoo believes that the loss of predators like wolves and great horned owls may allow the host population to grow unchecked. He speculates that the boom in backyard

**AREA TICK  
POPULATION**  
**Lone Star Tick:**  
**96%**

**American Dog  
Tick: 3%**

**Deer Tick: 1%**

DATA FROM LISA  
GOESSLING,  
WASHINGTON  
UNIVERSITY

## **HOW DO YOU PERFORM A TICK CENSUS?**

the number of ticks in a plot of land:

1. **He walks a measured distance dragging a white cloth on the ground behind him.** Questing ticks are alerted to his heat and carbon dioxide, and motivated by movement to attach to the cloth. On his championship day, he collected 15,000 seed ticks on a

gardening has created new environments, especially for deer.

Dr. Robert Thach of Washington University agrees. In the course of his research, which analyzes ticks for both the diseases carried and the source of their last blood meal, he collects from various sites in the St. Louis area. Forest Park has few ticks, but Tyson, Shaw Nature Reserve, and especially Lone Elk Park have large populations. The growing herd of huge, shaggy buffalo at Lone Elk is definitely a tick magnet.

one square yard cloth dragged about 1.2 kilometers.

2. **He performs carbon dioxide trapping.** He fills a cooler with dry ice, which evaporates as carbon dioxide. He covers the cooler with double sided tape, and comes back after 24 hours. One such trap in the St. Louis region collected 4,600 ticks, estimated to come from about 100 square meters.

## **SKIP THIS SECTION IF YOU ARE SQUEAMISH.**

Why would an increase in numbers of large mammals contribute to an increase in numbers of ticks? The answer lies in the tick life cycle.

All Missouri ticks go through three stages before they can reproduce, according to Mike Arduser, a natural history biologist at the Missouri Conservation Department. Only a good blood meal at each stage allows the tick to molt and progress to the next. Ticks will feed on whatever blood source they can find. Humans can be a source of food for ticks of any stage.

Tiny larval, or "seed" ticks tend to feed close to the ground, so they usually feast on small rodents. When they have taken in enough blood, they can grow to the nymph stage. Nymphs look like small ticks, and can move higher in the grass. They often feed on larger, rabbit-size animals. An adult tick, bigger and harder-shelled, can climb even higher in the grass. Adult ticks attach to even larger animals, such as deer. Or us.

The blood-filled female eventually drops off the host and lays thousands of eggs to begin the cycle again.

After the tick has fed for a while, bacteria already in its gut may transfer into

the host. So, a tick that has fed on a rabbit carrying ehrlichiosis can infect its next host with that bacterium.

*Important for reader anxiety: Diseases do not transfer to the host until the tick has been attached for many hours. Checking for ticks at the end of the day is one of the most reliable ways to avoid tick-borne diseases.*

## **TICKS FIND THEIR NEXT MEAL TICKET BY "QUESTING."**

Ticks hang out in grassy areas, or in brush. They are found less in mature forests than in transitional areas.

A hungry tick looks for a good meal that radiates heat and carbon dioxide. To get in good position, the tick climbs to the top of a blade of grass or piece of brush. It holds onto the grass by its hind legs, and waves the front legs to catch on to a passing heat source. This behavior is called "questing."

Larger ticks can climb to the tops of high grass and so are more likely to attach to larger animals.

## **I LOVE THE OUT OF DOORS. HOW CAN I PROTECT MYSELF FROM TICK BITES?**

The Missouri landscape is too beautiful to stay away from. Take a few simple precautions and enjoy yourself.

Use an insect repellent with DEET on skin and clothing. You can also pretreat clothing with permethrin, obtainable from outdoor equipment stores, but the clothing must be thoroughly dry before you wear it.

Permethrin lasts through several launderings.

Wear light-colored long pants, long sleeved shirts and socks. Ticks on light color clothing are easily visible.

Tuck your pants legs into your socks to form a tick barrier. Better yet, use the duct tape ploy.

At the end of the day, check yourself all over for ticks, and remove any you find. Don't be shy. Ticks like to hide in moist areas like under arms and between the legs. Forget match heads, Vaseline and nail polish remover. To remove a tick, use a tweezer to grasp the tick's mouth parts

as close as possible to the skin. Pull straight out.

Take a cooling alcohol rubdown. You can dilute commercial 70 percent isopropyl alcohol with equal parts of water or just use it straight. Bonus: According to Arduser, the rubbing alcohol also works against chiggers. Finally, if you do develop flu-like symptoms 3-10 days after a tick bite, be sure to tell your doctor. On the off-chance that you may have had a tick bite you didn't notice, inform your doctor about your outdoor adventure.

*Jo Seltzer is a St. Louis freelance writer. To reach her, contact Beacon health editor [Sally J. Altman](#).*

[Close Window](#)