

Not a hoax: There is a tick that causes red meat allergies

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By Rose Kennedy, For the AJC

Burger lovers, rib grillers, Taco Tuesday fans—listen up. The Center for Disease Control's May 2018 report that diseases transmitted by fleas, mosquitoes and ticks have tripled in recent years was bad enough, but this is even worse. One type of tick bite causes an allergy to red meat.

The actual ailment is galactose-alpha, or alpha-gal. It's transmitted by the Lone Star Tick, or *amblyomma americanum*, which the CDC says is widely distributed in the Southeastern and Eastern United States.

The news gets worse. The CDC calls the Lone Star "a very aggressive tick that bites humans." The adult female has a white dot or "lone star" on her back, and she and the nymph stage of the tick are the ones that most frequently chomp on humans and transmit disease.

And while Lone Star ticks have been cleared from any association with Lyme disease, according to an article published in the *Journal of Medical Entomology* earlier this year, the Lone Star tick has its own brand of destruction. It carries a sugar called alpha-gal that humans don't have. The same sugar is found in red meat, like beef, pork, venison, rabbit and some dairy products.

A bite from the tick can trigger a person's immune system to create antibodies to the sugar that, in turn, will make their body reject red meat, setting off a serious allergic reaction.

Besides being an allergy to mammalian meat like beef, pork and lamb, which is a heart-breaker for carnivore foodies, alpha-gal can trigger dangerous anaphylactic reactions.

According to Vanderbilt University Medical Center, the allergy can cause hives and swelling, as well as broader symptoms of anaphylaxis, including vomiting, diarrhea, trouble breathing and a drop in blood pressure.

"The weird thing about [this reaction] is it can occur within three to 10 or 12 hours, so patients have no idea what prompted their allergic reactions," Ronald Saff, an assistant clinical professor at Florida State University College of Medicine, told *Business Insider*. In 2017, Saff said he was already seeing a couple of patients per week who had developed alpha-gal from Lone Star ticks.

Diagnosis is made more difficult because unlike, say, most seafood allergies, these red meat allergies and anaphylactic reactions caused by the Lone Star tick often seem to appear out of the blue, even occurring in the night many hours after the victim eats a burger or steak.

"They're sleeping, and they have no idea what they could be allergic to because the symptoms occurred so many hours after going to bed," Saff said.

The only simple aspect of identifying and avoiding the Lone Star tick is that the tactics are about the same as those for avoiding ticks in general.

Here are six ways to avoid ticks, according to the CDC and outdoors experts:

- Use an EPA-registered insect repellent that contains DEET, picaridin, IR3535, Oil of Lemon Eucalyptus (OLE), para-menthane-diol (PMD), or 2-undecanone on exposed skin, always making sure to follow the manufacturer's directions. (And do not use insect repellent on babies who aren't 2 months old yet.)
- Wear long-sleeved shirts and long pants, avoid brushy areas and walk in the center of trails when you're out in the woods.
- Treat outdoor gear, such as boots, pants, socks, and tents, with products that contain .5 percent permethrin or use permethrin-treated clothing and gear. The protection should last through at least a couple of washings.
- When you come back indoors, conduct a full-body tick check using a handheld or full-length mirror to view all parts of your body upon return from tick-infested areas. Parents should check their children for ticks.
- Use products that will control ticks and fleas on your pets, making sure you never apply topical dog flea medicine like Frontline to cats.
- Take steps to control mosquitoes, ticks and fleas inside and outside your home, using screens on windows, for example, and turning on the air conditioning instead of opening windows when you can.

Just spraying closed shoes with permethrin can be effective, Dorothy Leland, director of communications for Lymedisease.org, told the New York Times. "There are studies that show that just protecting your feet can do an amazing job against ticks because they tend to be low to the ground, so their entry point is that they often climb up on your shoes and keep going and get to your skin," she said.