September 2023

CANADA BEEF

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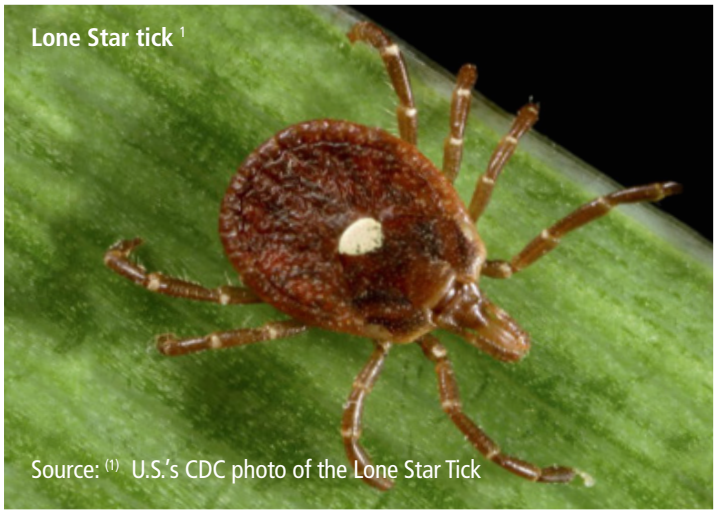
RED MEAT ALLERGY CAUSED BY TICKS

BEEF WATCH REPORT FOR SEPTEMBER 2023

THE HEALTH ISSUES OF THE ALPHA-GAL SYNDROME (AGS)

Alpha-gal (galactose-α-1, 3-galactose) is a sugar molecule found in meat (beef, pork, rabbit, lamb, venison) and other by-products from mammals (including gelatin, milk and dairy products).1 Related to this sugar, the alpha-gal syndrome (AGS) is a serious allergic condition that can last a lifetime for some patients. This syndrome is also known as "alpha-gal allergy," "red meat allergy" or "tick bite meat allergy" because it is associated with the bite of the Lone Star tick in the U.S. The issue starts when the tick bites an animal (cattle or other mammal) and absorbs the alpha-gal sugars found in the meat. Once that tick bites the human, it transfers the sugar; and this phenomenon could lead to a future allergic reaction if the person later consumes a product that contains alpha-gal.



Lone Star tick [1]

Source: [(1)] U.S.'s CDC photo of the Lone Star Tick

AGS symptoms occur between two and six hours after eating alpha-gal in meat or dairy products, or after exposure to products containing alpha-gal (gelatin-coated medications). These symptoms can include hives or itchy rash, nausea vomiting, heartburn, indigestion, diarrhea, cough, shortness of breath, drop in blood pressure, swelling of the lips, throat, tongue, or eyelids, dizziness faintness, or severe stomach pain.[2] It is unclear why certain people develop AGS while others may not have an allergic reaction after alpha-gal exposure.

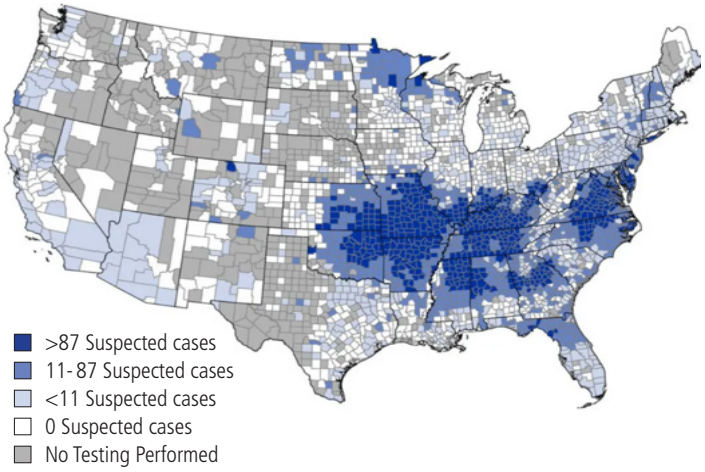
Adults living in the Southeast and Central states report the majority of the cases in the U.S. In 2019, the Lone Star tick made its way up to Wisconsin, Maine and Canada. Experts believe that a tick latched on a bird flying north or a wild deer carried the Lone Star tick to other areas in North America.[2, 3]

In different parts of the world, other types of ticks carry alpha-gal sugars. AGS has been reported in Europe, Australia, Asia, South Africa, and South and Central America.[2]

Future research will be helpful to understand how many people in the world are affected by this condition and what is the trend going forward. A crowd-sourced map (ZeeMaps) is keeping track of alpha-gal allergy cases worldwide.[4]

A report by the Centers for Disease Control and Prevention (CDC) estimates that between 2010 and 2022, more than 110,000 suspected cases of AGS were identified. However, the cases of AGS are not nationally notifiable to the CDC because the diagnosis requires a test and exam, and many are not tested. In 2018, the CDC reported that tick-borne diseases more than doubled from 2004 through 2016. However, due to the absence of a national surveillance program, the geographic distribution and total number of cases are largely unknown. The CDC thinks that the number of people who have developed AGS since 2010 is likely closer to 450,000.[5]

A July 2023 map from the CDC shows where in the U.S. alpha-gal syndrome is most diagnosed. The condition is spread through the bite of a Lone Star tick.



A report by the CBC on July 28, 2023 explains that AGS is rare in Canada. In an email to CBC News, the Public Health Agency of Canada (PHAC) explains that to its knowledge: "…even though the tick has been found in parts of the country; it is not established here." After any tick bite, Health Canada advises people to consult a healthcare provider if they develop symptoms.[6] According to the eTick website, which tracks ticks in Canada, 35 cases (12 on animals and 23 on humans) of Lone Star ticks were identified between January 1 and September 5, 2023.[7]

Additional Resources

1. CDC, what is Alpha-gal?, July 28, 2023
2. Mayo Clinic, Alpha Gal Syndrome, August 2023
3. Rare 'Lone Star Tick' comes to Wisconsin, July 1, 2019
4. Where in the world is Alpha Gal? map (zeemaps.com)
5. CDC, Emerging Tick-Bite Associated Meat Allergy Potentially Affect Thousands, July 27, 2023
6. La Grassa, J., A Red Meat Allergy caused by ticks is rising in the U.S., Canada's National Health Agency says it is rare here, CBC News, July 28, 2023.
7. E-tick website, https://www.etick.ca/etickapp/en/ticks/public/list