

The Link between Ticks and Red Meat Allergies

By Caitlin Dow, Nutrition Action



“After being bitten by the lone star tick, some people’s immune cells become primed to react to a sugar called alpha-gal that is made by mammals like cows, pigs, and lambs,” explains Roxanne Oriel, a physician and assistant professor of pediatrics, allergy and immunology at the Icahn School of Medicine at Mount Sinai Hospital in New York.

“When those people eat red meat, they may have a delayed severe anaphylactic reaction.”

What might explain the link? Lone star ticks inject alpha-gal—which they may get from feeding on animals or from their own saliva—into the people they bite.

How common is alpha-gal allergy? “We’re confident the number is over 5,000 [cases]...in the U.S. alone,” University of North Carolina allergist Scott Commins told National Public Radio last June. And that’s just since 2009, when alpha-gal allergy was discovered.

Lone star ticks primarily live in the southeast and central United States, though their range is expanding up the eastern seaboard and into the Midwest. (Alpha-gal has been linked to other ticks in Europe, Asia, Australia, and Central America.)

When it comes to allergies, alpha-gal breaks the mold.

First, almost all allergies are triggered by proteins, but alpha-gal is a sugar. Second, symptoms don't appear until three to six hours after eating red meat.

Most food allergies occur within two hours of exposure, but alpha-gal allergy is one notable exception, Oriol points out. "Patients often wake up in the middle of the night with an anaphylactic reaction after eating red meat for dinner."

Curiously, if your blood type is B or AB, you may be less likely to get an alpha-gal allergy than if your blood type is A or O, suggests a recent study.

What's the connection? Your blood type depends on sugars on the surface of your red blood cells. And the sugar for blood type B looks like alpha-gal. So people with blood type B or AB may be less likely to react to alpha-gal because their bodies don't see it as being foreign.

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