**AGS background document: Virginia**

**Background**

Alpha-gal syndrome (AGS), is an IgE-mediated allergy to the sugar galactose-α-1,3-galactose (alpha-gal), which is found in all mammals except some primates. Its onset is associated with tick bites. In the U.S., lone star ticks are responsible for the majority of cases.

People with AGS react to products made from mammals. This includes foods such as beef, pork, lamb, venison, dairy products, and gelatin. It also includes drugs and medical products, such as monoclonal antibodies, heparin, bioprosthetic heart valves, some vaccines, antivenom, medication in gelatin capsules, and many other medical products. Over 75% of people with AGS report reacting to a medication, and about 50% report that they have experienced anaphylactic reactions to a health product.

Many people with AGS also react to personal care and household products with mammal-derived ingredients.

Alpha-gal reactions are often severe and can be fatal. Over 60% of people with AGS experience anaphylactic reactions. In areas of high prevalence, reactions to alpha-gal can be the number one cause of anaphylaxis in adults and adolescents, accounting for a third of all cases, more than all other food allergies combined.

Due to growing lone star tick populations, the number of cases of AGS is increasing at an alarming rate. In July, 2023, the CDC reported that between 2010 and 2022, more than 110,000 suspected cases of AGS were identified. The CDC estimates that up to 450,000 Americans may be affected, making AGS the 10th most common food allergy. Yet alarmingly, 78% of physicians know little to nothing about AGS, and only 5% feel very confident in diagnosing and managing it.

**Virginia: an alpha-gal syndrome hotspot**

Virginia is an alpha-gal syndrome hotspot. Residents in rural areas and in the lower-elevation Piedmont and Coastal Plain regions are most affected. This is coincident with the abundance of lone star ticks, which account for the vast majority of all human tick encounters within the state. Over 20% of residents in some areas of Virginia are sensitized to alpha-gal, and up to 9% of these individuals may have allergic reactions to alpha-gal. A recent study found that more than 2% of an unselected cohort from central Virginia had AGS. Other estimates suggest that up to 3% of people in the hardest hit areas may be affected. In addition, small studies suggest that AGS may be a frequent cause of both IBS-like symptoms and rheumatological issues, accounting for up to 25% of such cases in central Virginia. Concerningly, research
conducted at UVA and elsewhere found that people who are sensitized to alpha-gal, even if they do not develop allergic reactions, may be at increased risk of cardiovascular disease.\textsuperscript{22,28} 

**A call to action**

In a July 2023 report, the CDC recognized AGS as a growing clinical and public health concern.\textsuperscript{12} Due to the current lack of surveillance, they state, the true prevalence of AGS is largely unknown.\textsuperscript{12} The CDC identified a “critical need” for state and local health authorities to initiate surveillance and encourages them to do so.\textsuperscript{12,31}

The CDC recently laid the groundwork for states to make AGS reporting mandatory, publishing a National Notifiable Diseases Surveillance System case definition for alpha-gal syndrome (AGS)\textsuperscript{29} and creating an Alpha-gal Syndrome Case Report Form.\textsuperscript{30} In September, 2023 Arkansas became the first state to make AGS a mandatory, reportable health condition,\textsuperscript{32} and other states in high prevalence regions are expected to follow suit.

References:


13. Mysterious meat allergy passed by ticks may affect hundreds of thousands in US, CDC estimates. CNN. Updated 2:05 PM EDT, Sat July 29, 2023


