

Alpha-gal Syndrome For Healthcare Providers

What is alpha-gal?

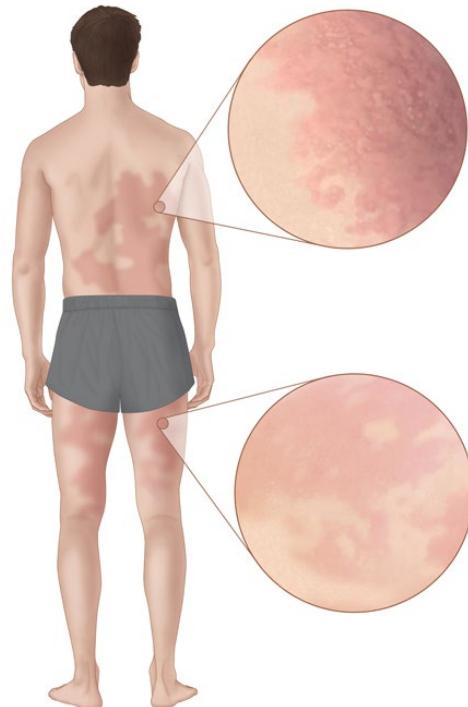
- Alpha-gal (galactose- α -1,3-galactose) is a disaccharide found in most mammals.
- Alpha-gal can be found in meat (e.g., pork, beef, rabbit, lamb, and venison) and products made from mammals (e.g., gelatin, cow's milk, milk products).
- Alpha-gal is not found in fish, reptiles, birds, or people.

What is alpha-gal syndrome?

Alpha-gal syndrome (AGS) (also called alpha-gal allergy or red meat allergy) is a serious, potentially life-threatening allergic reaction. Symptoms typically appear 2–6 hours after eating meat or dairy products, or after exposure to products containing alpha-gal (e.g., gelatin-coated medications). People with AGS may not have an allergic reaction after every alpha-gal exposure.

AGS reactions can include:

- Anaphylaxis
- Urticaria
- Nausea or vomiting
- Heartburn or indigestion
- Diarrhea
- Cough, shortness of breath, or difficulty breathing
- Swelling of the lips, throat, tongue, or eye lids
- Hypotension
- Severe stomach pain



How is AGS diagnosed?

AGS is diagnosed through a detailed patient history, physical examination, and a blood test that looks for immunoglobulin-E antibodies specific to alpha-gal (alpha-gal sIgE) in a patient's serum. Tests for alpha-gal sIgE antibodies are available at several large commercial laboratories and some academic institutions. Skin tests documenting reaction to certain alpha-gal-containing products (such as pork or beef) may also be used to support a diagnosis of AGS. Both clinical signs and testing are needed to make an AGS diagnosis.



**U.S. Department of
Health and Human Services**
Centers for Disease
Control and Prevention

Alpha-gal and ticks

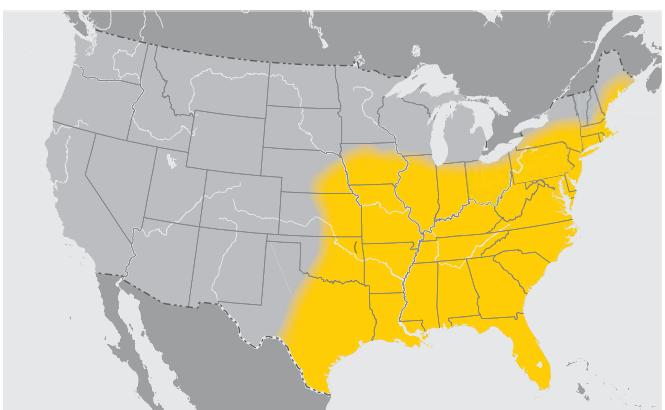
Growing evidence suggests that people may be sensitized to alpha-gal by tick bites. Lone star ticks have been implicated in the United States, but other tick species have not been ruled out. Lone star ticks are widely distributed in the southeastern and eastern United States.

Talk to your patients about recent tick exposures.

Preventing tick bites may reduce the chances of developing AGS. Advise patients to:

- Avoid grassy, brushy, and wooded areas, where ticks may be found.
- Use Environmental Protection Agency (EPA)-registered insect repellent on skin.
- Treat clothing and gear with 0.5% permethrin.
- Perform regular tick checks.
- Remove attached ticks immediately. For instructions visit https://www.cdc.gov/ticks/removing_a_tick.html.
- Take steps to prevent ticks on pets and in the yard.

Distribution of lone star ticks (*Amblyomma americanum*)



How is AGS managed?

AGS reactions are managed with antihistamines, corticosteroids, and other medications. Many foods and products contain alpha-gal; you will need to work with your patients to understand which products they need to avoid. Some evidence suggests that products may be safely reintroduced in patients after long periods of avoiding alpha-gal and tick bites.

- Most patients with AGS must stop eating mammalian meat (e.g., such as beef, pork, lamb, venison, rabbit). Organ meats and those with high mammalian fat typically contain high amounts of alpha-gal.
- Depending on the sensitivity and the severity of their allergic reaction, patients may need to avoid other products, such as cow's milk, milk products, and gelatin, which may contain alpha-gal.
- Although very rare, patients with severe AGS may react to ingredients in certain vaccines or medications. There is no comprehensive list of alpha-gal-containing medications, but providers can look for products containing ingredients such as gelatin, glycerin, magnesium stearate, and bovine extract.
- Patients with AGS should avoid tick bites. New tick bites may reactivate allergic reactions to alpha-gal.

Your state or local health department may be tracking cases of AGS. Talk to them about possible case reporting.

For more information: <https://www.cdc.gov/ticks/alpha-gal/index.html>