



# Alpha-gal Syndrome (AGS): Clinical FAQ for Health Care Professionals

## What Is Alpha-gal Syndrome (AGS)?

Alpha-gal syndrome is a delayed allergic reaction to the carbohydrate galactose- $\alpha$ -1,3-galactose (alpha-gal), found in mammalian meat (e.g., beef, pork, lamb) and derived products, such as gelatin, some medications and biologics.

It is triggered by tick bites, primarily from the lone star tick (*Amblyomma americanum*) in the United States.

## Who Should Be Evaluated for AGS?

Consider testing when patients report:

- Delayed (3-8 hours) allergic reactions after eating red meat or exposure to mammalian-derived products.
- Recurrent, unexplained anaphylaxis, especially at night.
- Gastrointestinal symptoms (abdominal pain, diarrhea, nausea) occurring hours after mammalian meat ingestion.
- History of tick bites followed by new-onset food reactions.

## When NOT to Order Testing

Avoid unnecessary testing when:

- Symptoms occur immediately after eating and are more consistent with typical IgE-mediated food allergy.
- There is no clear exposure to mammalian products or compatible symptom pattern.
- Testing is requested solely based on geographic risk (tick exposure alone does not indicate disease).

## What Test Should Be Ordered?

Order "IgE to galactose- $\alpha$ -1,3-galactose (alpha-gal)," which is a specific blood test available from major reference laboratories.

Optional adjuncts (if available):

- IgE to beef, pork, lamb may support diagnosis but are less specific.
- Total IgE helps interpret results when alpha-gal IgE levels are low.

Skin testing with meat extracts is not reliable and should not be used for diagnosis.

## How to Interpret Results

- Positive alpha-gal IgE (>0.1 kU/L) in a patient with compatible history of delayed onset reactions/anaphylaxis after eating mammalian meat confirms sensitization.
- Diagnosis requires both:
  1. Compatible clinical history (delayed allergic symptoms after mammalian exposure)
  2. Positive alpha-gal IgE test
- Many more patients will be sensitized (detectable alpha-gal IgE) than will have the condition. Do not diagnose based upon testing alone and do not test unless the clinical history suggests allergic reactions.

## Management

- Patients will need to maintain strict avoidance of mammalian meats and products (including gelatin, some medications and biologicals).
- Prescribe epinephrine auto-injector for all patients with systemic reactions.
- Offer patient education on hidden sources and tick-bite prevention to prevent re-sensitization.

## Key Takeaways

- Alpha-gal allergy is delayed, tick bite-associated and carbohydrate-based.
- Testing should be guided by history, not geography.
- Order only “alpha-gal IgE” to confirm diagnosis — avoid unnecessary panels.
- Proper diagnosis requires a clinical history and elevated testing.

**For more information:**

**Centers for Disease Control and Prevention (CDC): [cdc.gov/alpha-gal-syndrome/](https://cdc.gov/alpha-gal-syndrome/)**

