Massachusetts Department of Public Health

DPH

Introduction to Alpha-gal Syndrome Case Investigations

April 14, 2026

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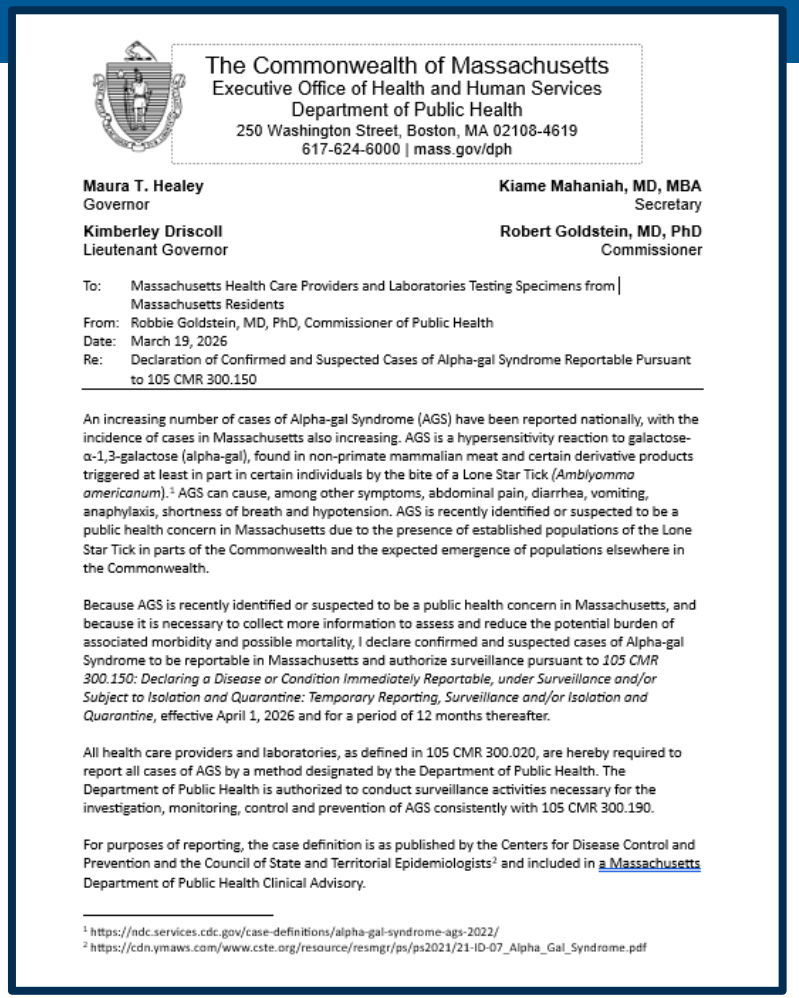
Confirmed and Suspected Cases of Alpha-gal Syndrome Reportable in MA

- Alpha-gal Syndrome (AGS) is an emerging tick-bite associated public health concern in Massachusetts.
- Per Commissioner declaration, new diagnoses of AGS are now reportable by all healthcare providers and laboratories, effective April 1, 2026 (joining 14 other states).
- DPH (and LBOH) authorized to conduct surveillance activities necessary for the investigation, monitoring, control and prevention of AGS.
  - AGS is reportable for the period of one year.



The Commonwealth of Massachusetts
Executive Office of Health and Human Services
Department of Public Health
250 Washington Street, Boston, MA 02108-4619
617-624-6000 | mass.gov/dph

Maura T. Healey, Governor
Kimberley Driscoll, Lieutenant Governor
Kiame Mahaniah, MD, MBA, Secretary
Robert Goldstein, MD, PhD, Commissioner

To: Massachusetts Health Care Providers and Laboratories Testing Specimens from Massachusetts Residents
From: Robbie Goldstein, MD, PhD, Commissioner of Public Health
Date: March 19, 2026
Re: Declaration of Confirmed and Suspected Cases of Alpha-gal Syndrome Reportable Pursuant to 105 CMR 300.150

An increasing number of cases of Alpha-gal Syndrome (AGS) have been reported nationally, with the incidence of cases in Massachusetts also increasing. AGS is a hypersensitivity reaction to galactose-α-1,3-galactose (alpha-gal), found in non-primate mammalian meat and certain derivative products triggered at least in part in certain individuals by the bite of a Lone Star Tick (*Amblyomma americanum*).[1] AGS can cause, among other symptoms, abdominal pain, diarrhea, vomiting, anaphylaxis, shortness of breath and hypotension. AGS is recently identified or suspected to be a public health concern in Massachusetts due to the presence of established populations of the Lone Star Tick in parts of the Commonwealth and the expected emergence of populations elsewhere in the Commonwealth.

Because AGS is recently identified or suspected to be a public health concern in Massachusetts, and because it is necessary to collect more information to assess and reduce the potential burden of associated morbidity and possible mortality, I declare confirmed and suspected cases of Alpha-gal Syndrome to be reportable in Massachusetts and authorize surveillance pursuant to *105 CMR 300.150: Declaring a Disease or Condition Immediately Reportable, under Surveillance and/or Subject to Isolation and Quarantine: Temporary Reporting, Surveillance and/or Isolation and Quarantine*, effective April 1, 2026 and for a period of 12 months thereafter.

All health care providers and laboratories, as defined in 105 CMR 300.020, are hereby required to report all cases of AGS by a method designated by the Department of Public Health. The Department of Public Health is authorized to conduct surveillance activities necessary for the investigation, monitoring, control and prevention of AGS consistently with 105 CMR 300.190.

For purposes of reporting, the case definition is as published by the Centers for Disease Control and Prevention and the Council of State and Territorial Epidemiologists[2] and included in a Massachusetts Department of Public Health Clinical Advisory.

[1] https://ndc.services.cdc.gov/case-definitions/alpha-gal-syndrome-ags-2022/
[2] https://cdn.ymaws.com/www.cste.org/resource/resmgr/ps/ps2021/21-ID-07_Alpha_Gal_Syndrome.pdf

[DPH: Alpha-Gal Declaration, March 16, 2026]

Why Collect AGS Data Through Surveillance?

- DPH is responding to evidence of an emerging risk that is not yet fully understood. Through surveillance we hope to better:
  - Define the geographic area of risk in MA
  - Understand patient risk factors and clinical presentation
  - Use data to raise awareness among the public and providers about the emergence of Alpha-gal Syndrome as a public health concern, and prevention methods.

Agenda Today

- **Background on Alpha-gal Syndrome (AGS) as an emerging public health concern.**
  - The Known and the Unknown
- **Alpha-gal Syndrome (AGS) Clinical Presentation**
  - Symptoms & Allergic Response
  - Lab Testing
  - Syndrome Management
- **Steps for conducting AGS case investigations.**
  - Case Reporting Mechanisms
  - MAVEN AGS risk and clinical questions
- **Tick Bite Prevention Resources**
- **Other Tickborne Disease Reminders & Resources**

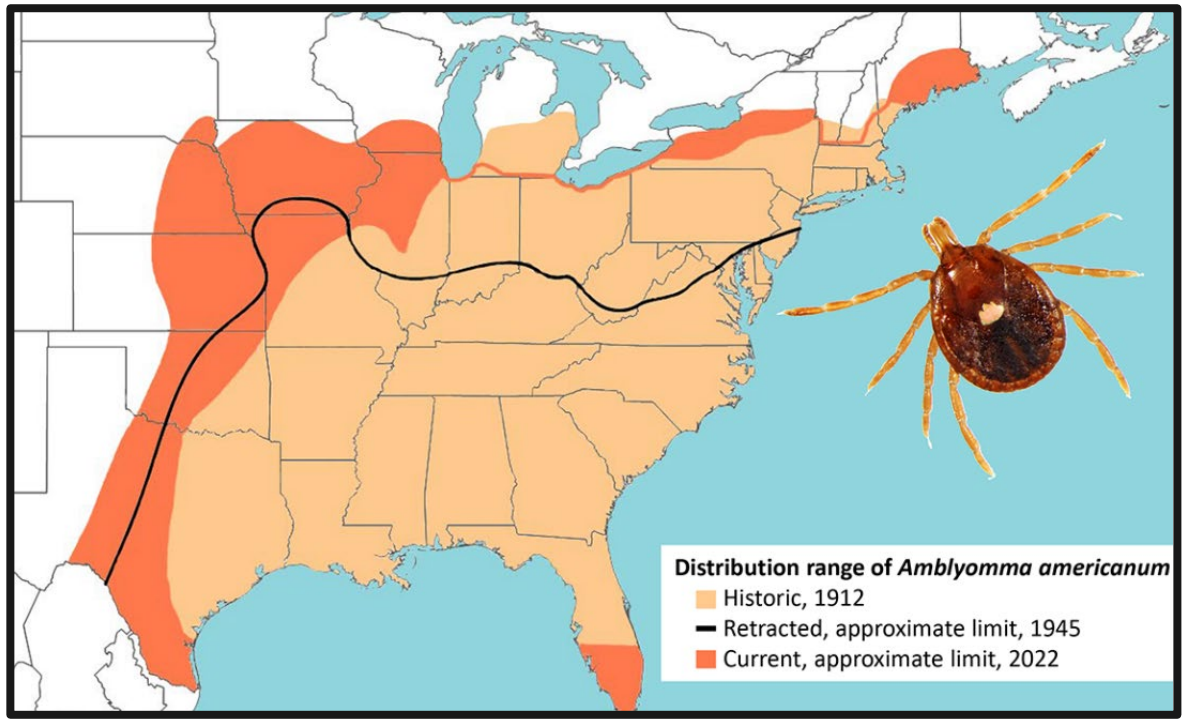
Alpha-gal Syndrome (AGS)

- Alpha-gal is a molecule (galactose-α-1,3-galactose) that is naturally produced in the bodies of most mammals but not in people.
- It is also found in the saliva of some ticks (lone star tick).
- **Alpha-gal Syndrome (AGS)** is a serious, potentially life-threatening allergy to the alpha-gal molecule.

AGS is also known as mammalian meat allergy, alpha-gal allergy, red meat allergy and tick bite meat allergy.

Alpha-gal Syndrome Epidemiology

- Because not every state conducts surveillance, **the actual number of AGS cases in the United States is not known**; CDC estimates as many as 450,000 people may be affected.
- AGS most commonly occurs in areas with **high populations of the lone star tick.** The lone star tick range is expanding northward.
  - In Massachusetts, AGS is most common in places where populations of lone star ticks have become established: Cape Cod, Martha's Vineyard, Nantucket and Berkshire County.



McClung KL and Little SE, 2023

How Alpha-gal Syndrome Spreads

- **AGS is primarily associated with the bite of a lone star tick.**
  - Exposure to the alpha-gal molecule in tick saliva while tick is attached can cause some people to become sensitized to it.
  - This sensitization can take weeks to months after the tick bite.
  - Afterward, exposure to the same molecule in food or medicine can trigger an allergic reaction.
  - Allergic reactions can vary widely in type and severity.

Lone Star Tick vs. Black-legged Tick Behavior

- Some important behavior differences between lone star ticks that can cause AGS and the black-legged tick that spreads multiple infectious diseases in Massachusetts are:
  - Adult lone star ticks can move quickly and may move toward a person as opposed to black-legged ticks which sit at the ends of vegetation and climb onto a person as they brush by.
  - Juvenile lone star ticks (the nymphal stage) are usually found in very large numbers at a single location. If multiple small ticks are found crawling on you, they are more likely to be lone star ticks than black-legged ticks.

Black-legged Tick

Lone Star Tick

- In these cases, using masking tape to remove the unattached ticks may be more efficient than addressing them individually.

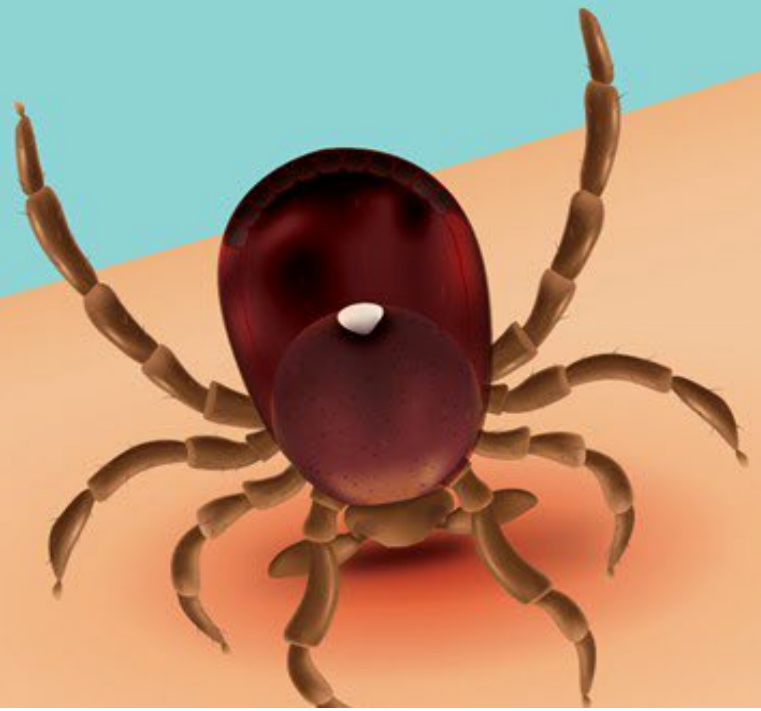
Alpha-gal: The Unknown

- **AGS case incidence and prevalence** in MA is not yet known.
- The exact **mechanism and risk factors** associated with the development of AGS are still not wholly known.
- **Sensitization** (development of IgE antibodies) following a tick bite or bites is considered a key trigger, but not everyone who is bitten and develops antibodies develops clinically compatible symptoms.
- **Patient characteristics** or **repeated tick bites** (as opposed to a single tick bite) may be related to the risk of developing AGS.
- The **lone star tick bite** is thought to be the most likely trigger, yet links to **other species** of ticks have not been ruled out.

The Syndrome

When a tick bite causes red meat allergy

Alpha-Gal Syndrome (AGS)



Alpha-gal Syndrome Symptoms

The symptoms and severity of AGS differs from person-to-person and can change over time. Symptoms are divided into two categories:

Allergic Symptoms:

- Hives (urticaria)
- Itching
- Anaphylaxisis
- Swelling
- Shortness of breath
- Cough
- Wheezing
- Acute hypotension (low blood pressure)

Gastrointestinal (GI) Symptoms:

- Abdominal pain
- Nausea
- Diarrhea
- Vomiting
- Heartburn/indigestion

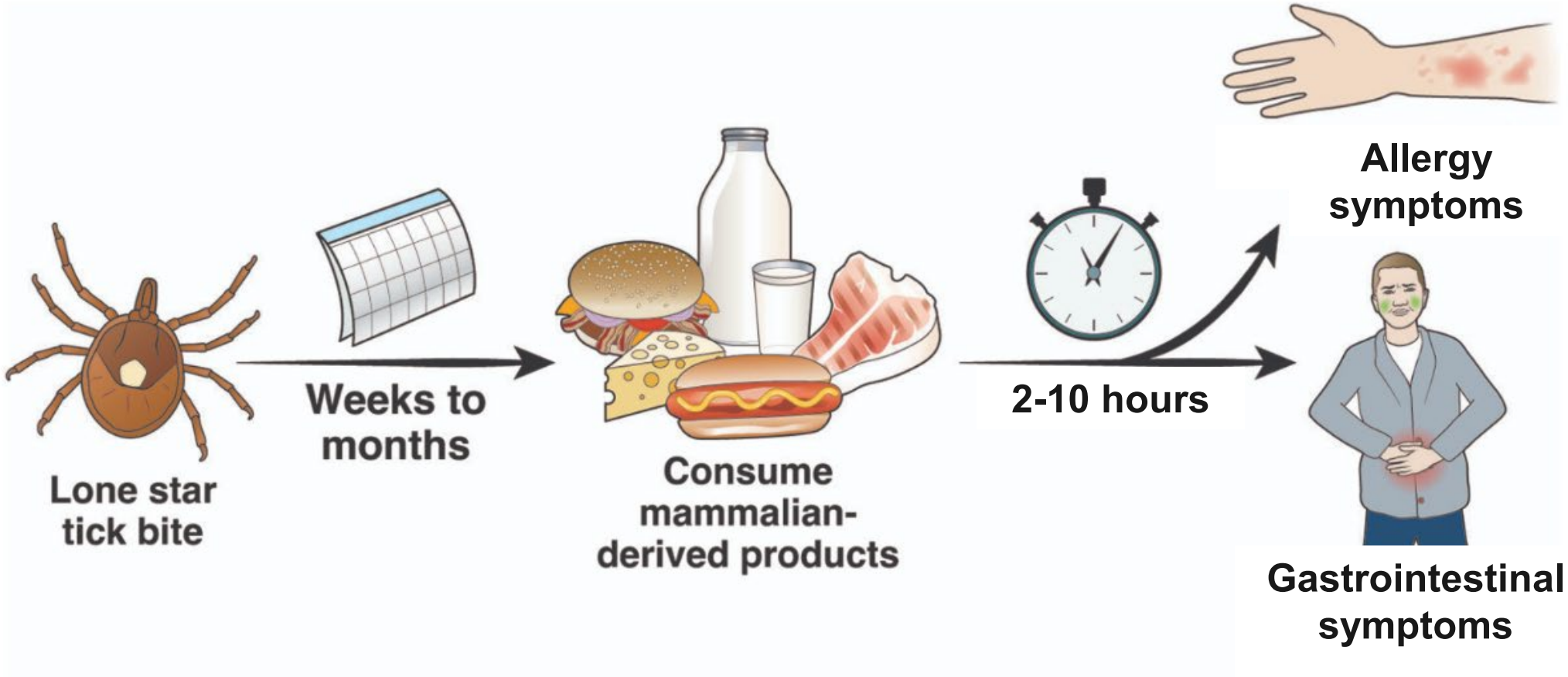
Alpha-gal Syndrome – Not Your Typical Allergy

- **Time From Exposure:** It can take weeks to months after being bitten by a tick for a person's immune system to produce antibodies to alpha-gal and cause AGS.

- **Atypical Food Allergy:** Unlike typical food allergies (where symptoms develop rapidly within minutes to two hours), with AGS, symptoms are often delayed by several hours after exposure (2-10 hours) and can arise following years of safe meat consumption.

- Allergic reactions to injected medications containing alpha-gal can occur immediately.

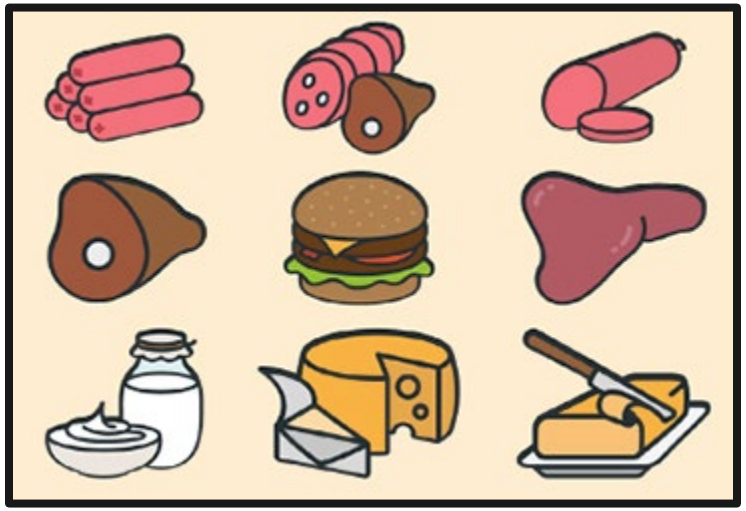
Alpha-gal Syndrome Symptom Onset



Adapted from: American Gastroenterological Association

Potential AGS Allergy Triggers

- Common Triggers:
  - **Mammalian meats (not poultry or fish)**
- Less Common Triggers:
  - Dairy products
  - Vaccine and medical components
    - gelatin, glycerin, magnesium stearate and bovine extract
  - Certain medical products
    - some monoclonal antibodies, heparin, antivenoms, pig or cow heart valves.



Lab Tests for AGS

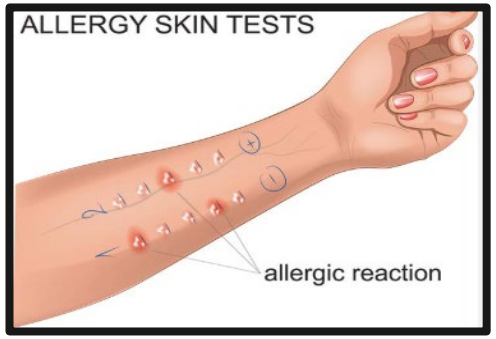
AGS is diagnosed by a healthcare provider based on patient history and laboratory testing.
There are two primary testing types:

Serology Testing (primary test):

- Alpha-gal Specific IgE test: a blood test to look for the presence of **specific immunoglobulin E (sIgE)** targeted against the designated allergen (in this case, the alpha-gal molecule)
  - sIgE tests are available through several large commercial laboratories and some academic institutions.

Allergy Skin Prick Test:

- Skin prick test: a doctor will add a liquid containing a small amount of the suspected allergen to a patient's forearm and then will prick the skin using a sterile lancet. If the area begins to swell or itch, that is considered a positive reaction.
  - Allergy skin tests are available through allergists.



The MA State Public Health Laboratory does <u>not</u> perform AGS testing.

Lab Tests for AGS: Serology Testing

Serology Testing: Alpha-gal Specific IgE test

- Currently, blood test levels of **alpha-gal IgE of ≥ 0.1 kU/L are considered positive**, but levels of IgE do not correlate directly with symptoms or disease severity.
  - Some may have high levels of IgE with no symptoms. Some may have low levels of IgE with severe symptoms.
- **sIgE testing alone is not enough for diagnosis.**
  - Asymptomatic sensitization (increased IgE) is known to occur so not all patients who test positive on a laboratory test will have AGS.
  - False positive IgE test results may occur in individuals where alpha-gal sensitization may be related to bee and wasp stings, parasitism, atopy, or cat ownership.
    - In these patients, the presence of antibodies does not match the clinical history of AGS.

Lab Tests for AGS: Skin Test

Skin Tests

- Allergy skin tests to one or more mammalian meats (e.g., pork, beef, lamb) or other mammalian-derived products may also be interpreted by the healthcare provider as consistent with alpha-gal allergy based on sensitivity.

- Allergy skin tests are reported via the provider case reporting form (not electronic lab reporting).

Strengths and Limitations of Allergy Testing

- **Strengths:**
  - Allergy testing (skin prick, blood/sIgE) identifies IgE-mediated sensitivities quickly with high degrees of certainty which can help rule out other allergies.
- **Limitations:**
  - False positives: blood and allergy tests show what the body is sensitized to, not necessarily what causes symptoms – this can lead to overdiagnosis.
  - Tests indicate the likelihood of an allergy; not how severe a reaction may be.

Sensitization vs. Allergic Reaction

- Allergists make a clear distinction between sensitivity, or what is usually called “sensitization,” and allergy.

- They consider someone “sensitized” to a substance if they have IgE antibodies against the food.
  - If only sensitized (not allergic), they **do not have an immune-related reaction** when they are exposed to it.

- **Remember:** sensitization only becomes an allergy when, besides having the presence of IgE antibodies, you also have an abnormal immune-related physical response to the food allergen.

Alpha-gal Syndrome Diagnosis

- Public health surveillance is based on the presence of a positive IgE test or allergy skin test AND symptoms that occur multiple hours after exposure to a mammalian product.
  - Testing is not recommended for individuals who have not experienced symptoms.

Alpha-gal Syndrome Management

- **Dietary avoidance of mammalian products.** Read food and medicine product labels carefully.
- Antihistamines for mild symptoms.
- Epinephrine (EpiPen) for severe, anaphylactic reactions.
- Repeat testing recommended every 6–12 months to monitor declining IgE antibody levels and inform reintroduction of mammalian products.
  - Additional labs on the same case will append to the matching initial event in MAVEN.
- **Avoiding future tick bites is imperative to prevent becoming resensitized.**

Alpha-gal Syndrome & Medical Products

- Although rare, some people with severe AGS may react to ingredients in certain vaccine types/brands and medications/ products that contain gelatin, glycerin, magnesium stearate, and bovine extract.
- Other medical products such as heart valves from pigs or cows, certain monoclonal antibodies, heparin, and certain antivenoms are animal-derived and may also contain alpha-gal.
- Patients should work with their healthcare provider to make decisions about the individual risks and benefits of these specific medications, vaccines or medical products.

Alpha-gal Syndrome Longterm

- Over time, and in the absence of repeated tick bite exposures, some AGS patients may be able to resume consumption of food and other products with alpha-gal without having an allergic reaction.
- Currently it is not possible to predict how long patients need to avoid exposure to alpha-gal or which patients will eventually experience resolution of the allergy.

Alpha-gal Syndrome
Case Investigation in MAVEN

Alpha-gal Syndrome Information Gaps

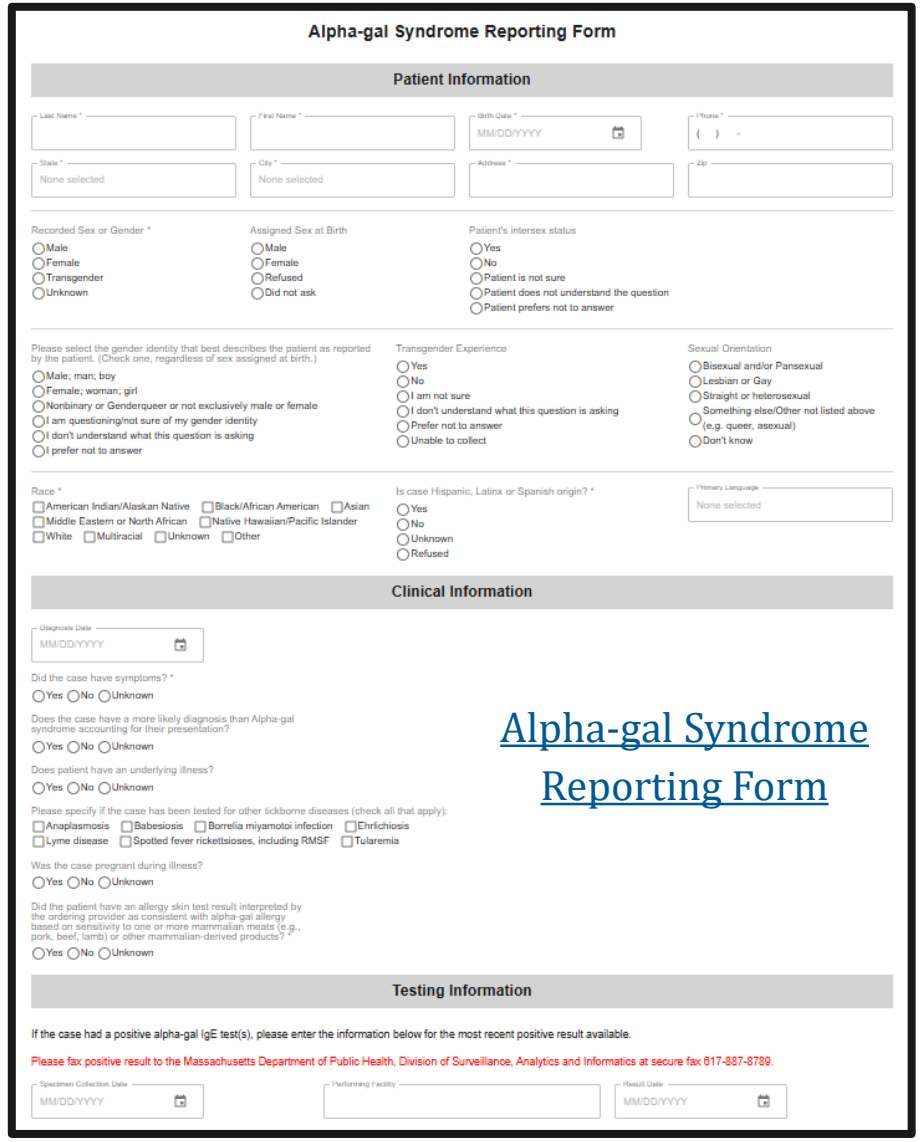
1. Incidence and prevalence of AGS in MA.
2. Geographic distribution of cases in MA.
3. Mechanism and risk factors associated with the development of AGS.
4. Predictive value: unclear if higher IgE levels correlate with a higher probability of severe clinical reactions.
5. Recovery timeline/remission period (role of repeat tick bites).

Goal of AGS Case Investigation

- **To measure AGS burden across Massachusetts.**
  - To accomplish this, we ask LBOHs to collect relevant MAVEN data for new AGS events, with a focus on detailed clinical and risk history.
- **AGS events will typically appear in MAVEN following:**
  - Electronic laboratory reporting (ELR) with confirmatory laboratory evidence (serology Alpha-gal IgE results) and/or
  - Provider reporting form
- New cases will appear in the **"LBOH Notification for Routine Disease"** workflow.

Alpha-gal Syndrome Reporting Form

- **AGS provider reporting form is available on the DPH website as of April 1, 2026.**
  - Submitting provider contact info will be noted in ADMIN QP Step 3.
- This form covers most demographic and clinical information, but additional risk information (such as tick bite history & travel) will still be needed through patient interview.



Alpha-gal Syndrome Reporting Form

Patient Information

Last Name * | First Name * | Birth Date * MM/DD/YYYY | Phone * ( ) -

State * None selected | City * None selected | Address * | Zip

Recorded Sex or Gender *
Male
Female
Transgender
Unknown

Assigned Sex at Birth
Male
Female
Refused
Did not ask

Patient's intersex status
Yes
No
Patient is not sure
Patient does not understand the question
Patient prefers not to answer

Please select the gender identity that best describes the patient as reported by the patient. (Check one, regardless of sex assigned at birth.)
Male; man; boy
Female; woman; girl
Nonbinary or Genderqueer or not exclusively male or female
I am questioning/not sure of my gender identity
I don't understand what this question is asking
I prefer not to answer

Transgender Experience
Yes
No
I am not sure
I don't understand what this question is asking
Prefer not to answer
Unable to collect

Sexual Orientation
Bisexual and/or Pansexual
Lesbian or Gay
Straight or heterosexual
Something else/Other not listed above (e.g. queer, asexual)
Don't know

Race *
American Indian/Alaskan Native | Black/African American | Asian
Middle Eastern or North African | Native Hawaiian/Pacific Islander
White | Multiracial | Unknown | Other

Is case Hispanic, Latinx or Spanish origin? *
Yes
No
Unknown
Refused

Primary Language None selected

Clinical Information

Diagnosis Date MM/DD/YYYY

Did the case have symptoms? * Yes No Unknown

Does the case have a more likely diagnosis than Alpha-gal syndrome accounting for their presentation? Yes No Unknown

Does patient have an underlying illness? Yes No Unknown

Please specify if the case has been tested for other tickborne diseases (check all that apply):
Anaplasmosis | Babesiosis | Borrelia miyamotoi infection | Ehrlichiosis
Lyme disease | Spotted fever rickettsioses, including RMSF | Tularemia

Was the case pregnant during illness? Yes No Unknown

Did the patient have an allergy skin test result interpreted by the ordering provider as consistent with alpha-gal allergy based on sensitivity to one or more mammalian meats (e.g., pork, beef, lamb) or other mammalian-derived products? * Yes No Unknown

Testing Information

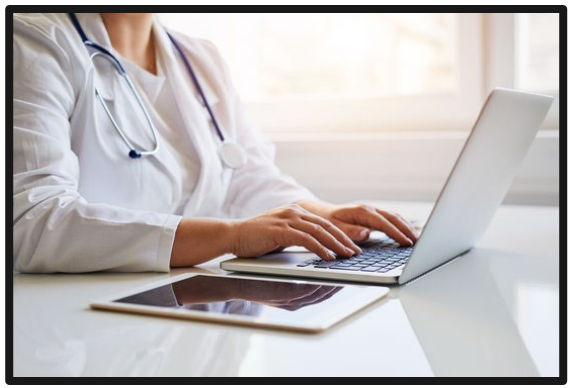
If the case had a positive alpha-gal IgE test(s), please enter the information below for the most recent positive result available.

Please fax positive result to the Massachusetts Department of Public Health, Division of Surveillance, Analytics and Informatics at secure fax 617-887-8789.

Specimen Collection Date MM/DD/YYYY | Performing Facility | Result Date MM/DD/YYYY

Data Completion for AGS MAVEN Events

- **If a provider report was submitted online**, the data will directly fill into many of the MAVEN Event variables. This should cover most of the clinical information and likely negates the need to call the provider.



  - Review the clinical information provided and, if adequate, proceed with contacting the patient to collect remaining symptom and risk history information.

Data Completion for AGS MAVEN Events

- **If an electronically reported lab test generated the AGS MAVEN Event**, most clinical information will not yet be complete, and a call to the provider is the recommended first step.

  - When you call the provider, you can collect this information over the phone. For future reference, advise the provider about the reporting form, but for this case they do not have to complete it due to your phone discussion.

Critical Information to Note

- Some lab tests may <u>not</u> be indicative of a **<u>NEW</u>** AGS diagnosis.
  - False positives
  - Repeat labs from a diagnosis long ago
  - Alternative diagnoses
  - Etc.

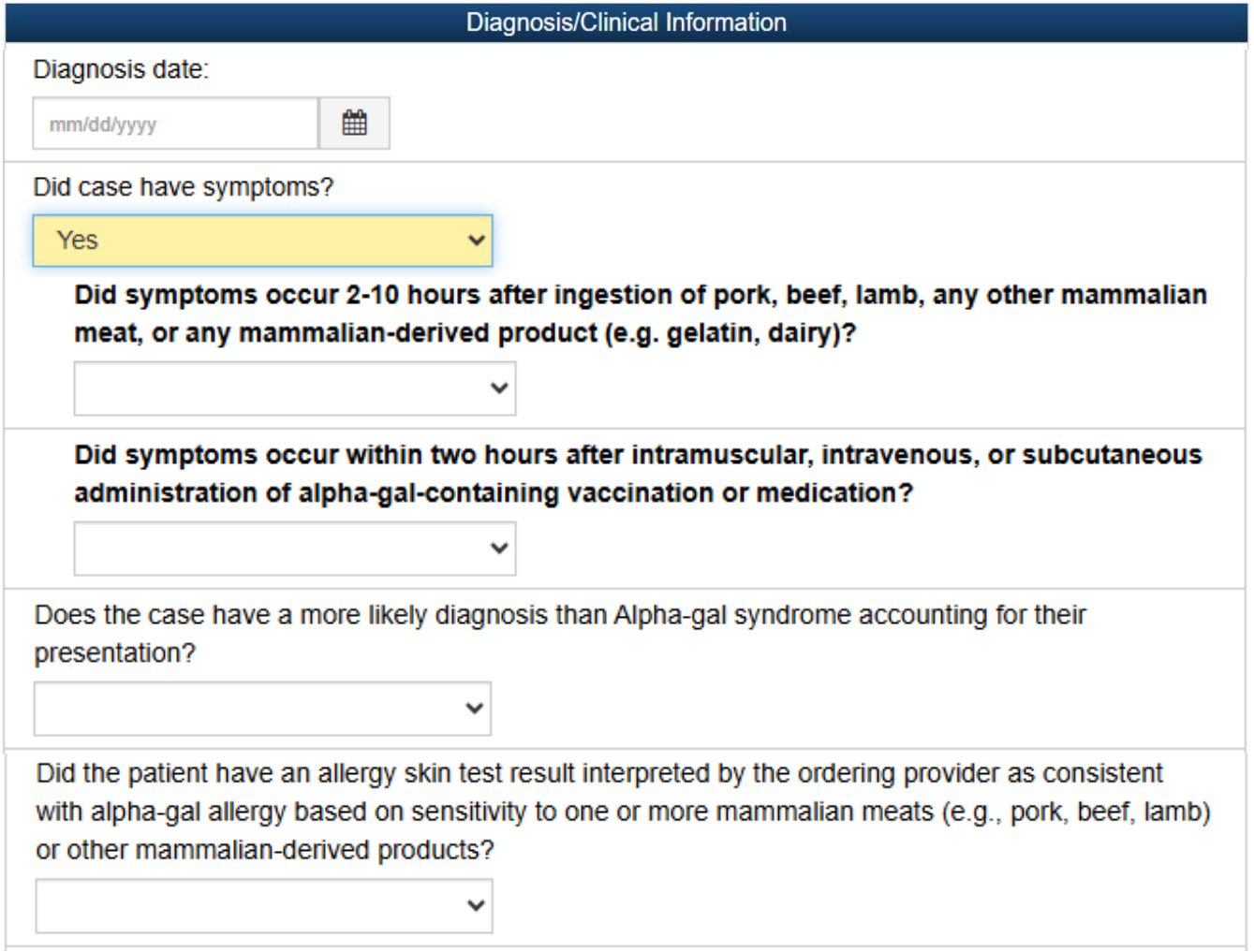
- **VERY IMPORTANT:** Be sure to note these findings in the question packages and in the notes field so DPH can appropriately classify the AGS Event.

Older Cases and Duplicates

- **AGS is a "lifetime" MAVEN Event.**
  - Because clinical management may include repeat lab testing over time, new labs SHOULD append to the initial MAVEN Event.
  - If a new lab doesn't match correctly, it may generate a NEW MAVEN Event (duplicate). If you notice a duplicate, please email MAVEN IDs to mavenhelp@mass.gov and ask to "deduplicate."

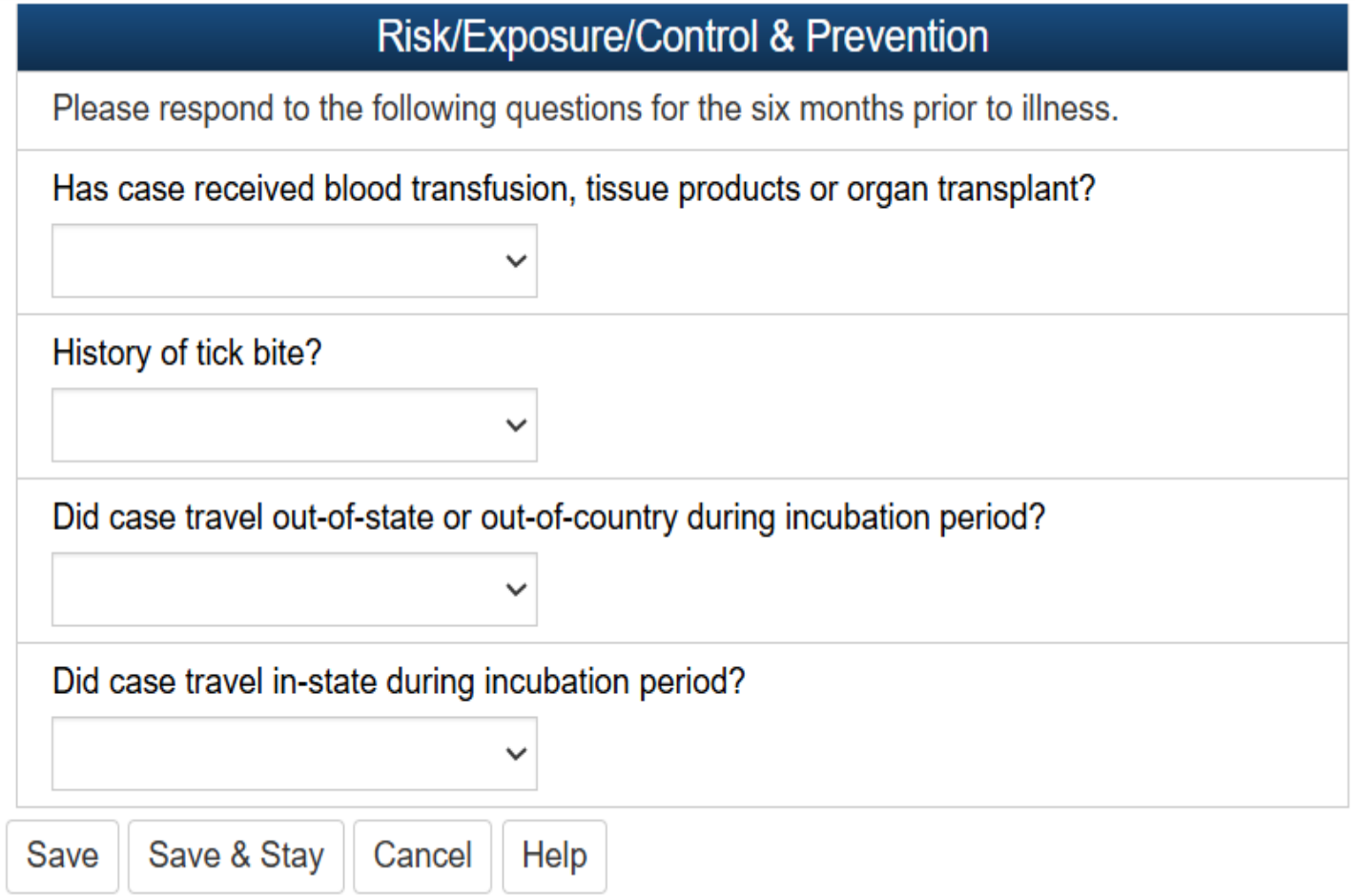
MAVEN Clinical Question Package

- AGS symptom drop down and onset:
  - Did symptoms occur 2-10 hours after ingesting mammalian meat product? If "yes" describe.
    - *Different* than a complete food history. Short window.
  - Did symptoms occur within 2 hours of receiving a pharmaceutical or medical products?



MAVEN Risk Question Package

- "**Yes**" to these questions creates a drop down to collect additional details:
  - **Tick bite** within the previous 6 months.
  - **Travel** within or outside of MA in the previous 6 months.
  - **Recipient** of blood transfusion or tissue/organ transplant.



AGS Investigation vs Other TBD Investigations

- **Similar:**
  - Key components of the case investigation include:
    - Gathering symptom information from the provider
    - Talking to the case for risk information on tick bites and travel
- **Different:**
  - Provider Case Report Form will fill in most clinical questions
  - Timing: Asking about tick bites and travel 6 months prior to symptom onset (instead of weeks for other tickborne diseases)
  - Allergy-specific clinical questions
  - Ordering provider may be an allergist

Case Education

- AGS is an emerging condition, it is not our role as public health to advise on treatment.
  - If questions about treatment arise, the case should be referred to their doctor for treatment questions or concerns.
- **Education for prevention of AGS should focus on avoiding tick bites.**

Tip sheet on MAVEN Help!

TIP SHEET For Local Boards of Health

Alpha-gal Syndrome Case Investigations

Disease: Unlike other tickborne diseases such as Lyme disease, Anaplasmosis, and Babesiosis, Alpha-gal syndrome (AGS) is a serious, potentially life-threatening allergy to alpha-gal which can develop after a tick bite. Alpha-gal is a molecule (galactose-α-1,3-galactose) that is naturally produced in the bodies of most mammals, like cows and pigs, but not people. AGS reactions can be different from person to person and symptoms can range from mild to severe. Symptoms can include hives or itchy rash, nausea, vomiting, diarrhea, stomach pain, angioedema (swelling) or life-threatening anaphylaxis. Symptoms generally appear 2-10 hours after exposure to foods or other products containing alpha-gal.

Transmission & Incubation Period: AGS in the United States is most commonly associated with the bite of the lone star tick, *Amblyomma americanum*. When a tick bites, it can transfer alpha-gal from its saliva into a person's blood. The body's immune system can identify alpha-gal as a threat and trigger an allergic reaction. The incubation period is weeks to months after being bitten by a tick.

Alpha-gal Syndrome (AGS)	
Initial Steps for LBOH	**LBOHs** are responsible for completing the Administrative, Demographic, Clinical, and Risk/Exposure Question Packages as part of the AGS investigation. • LBOH should monitor the "LBOH Notification for Routine Disease" workflow, where new AGS events will appear following electronic reports of positive AGS lab results or provider reporting forms with presumptive laboratory evidence. Complete Admin Steps 1-3 to begin. • Familiarize yourself with the disease: Alpha-gal Syndrome (AGS) | Mass.gov

Case Follow-up	**LBOH ensures data completion.** It is expected that all question packages in MAVEN be completed for every case. The information the case provides is valuable to better understand this emerging condition and its burden in Massachusetts.
	
	It is vital that information related to the case's AGS reaction be documented, including:
	• **Clinical Question Package:**
	  ○ AGS signs or symptoms during a reaction, food consumption within 2-10 hours of AGS reaction, signs or symptoms within 2 hours of receiving pharmaceutical or medical products, occurrence of anaphylaxis due to an AGS reaction
	• **Risk Question Package:**
	  ○ Tick bite within the previous 6 months, travel within or outside of MA in the previous 6 months, recipient of blood transfusion or tissue/organ transplant
	
	To obtain this information:
	1. **Call the provider or infection preventionist (IP)** at the hospital where the patient was seen to collect clinical information (this information can be found under "Lab Facility" or "Ordering Provider" in the Lab tab in MAVEN).
	2. **Call the case** to complete all remaining questions.

Alpha-gal Tipsheet

Prevention of AGS and Other Tickborne Diseases

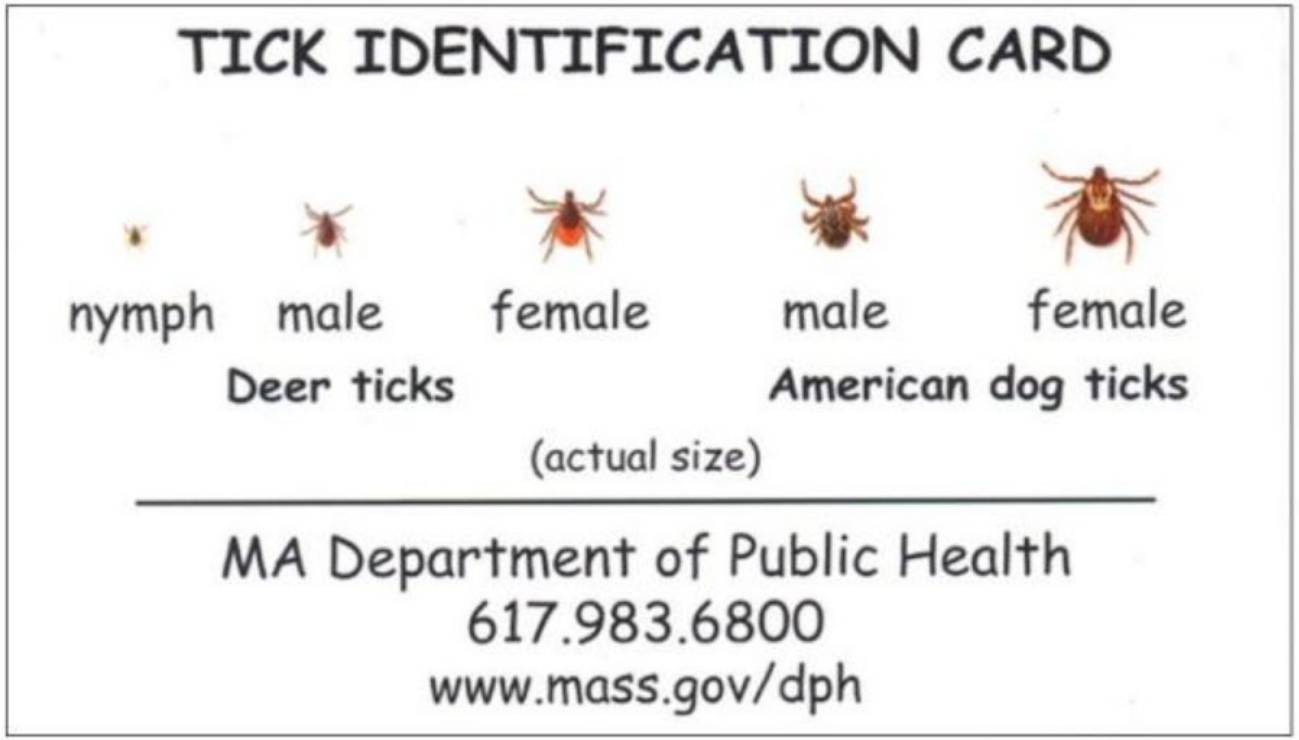
- Avoiding tick bites is the most important strategy to reduce the risk of development and persistence of AGS.

- Tick bite prevention recommendations are the same for lone star ticks as they are for other tick species like the Black-Legged tick (also known as deer tick).
  - Think Lyme disease, babesiosis, anaplasmosis, borreliosis, Powassan virus, and AGS.

Tick Bite Prevention

- One of the most important things that can be done is **checking adults, children, and pets for ticks daily and removing any attached ticks as soon as possible**.
- Use Environmental Protection Agency-registered insect repellents
  - Products with DEET (the chemical N-N-diethyl-meta-toluamide) may be used on skin.
- Use permethrin products on items such as clothing, shoes, bed nets and camping gear. Permethrin should not be applied to skin.
- Wear long, light-colored pants tucked into socks or boots, and a long-sleeved shirt.

Tick Identification



Ticks by Species – TickEncounter

- Individuals can circle the calendar date and note where on the body the tick was removed and save the tick for identification.
- Tick identifying may be helpful to determine the species and life stage of the tick so that if a patient becomes sick after a tick bite, this information could help inform diagnosis and treatment.

Tick Testing

- **MA State Public Health Laboratory does not offer tick identification or tick testing.** However, a list of Tick testing services | Mass.gov is available.

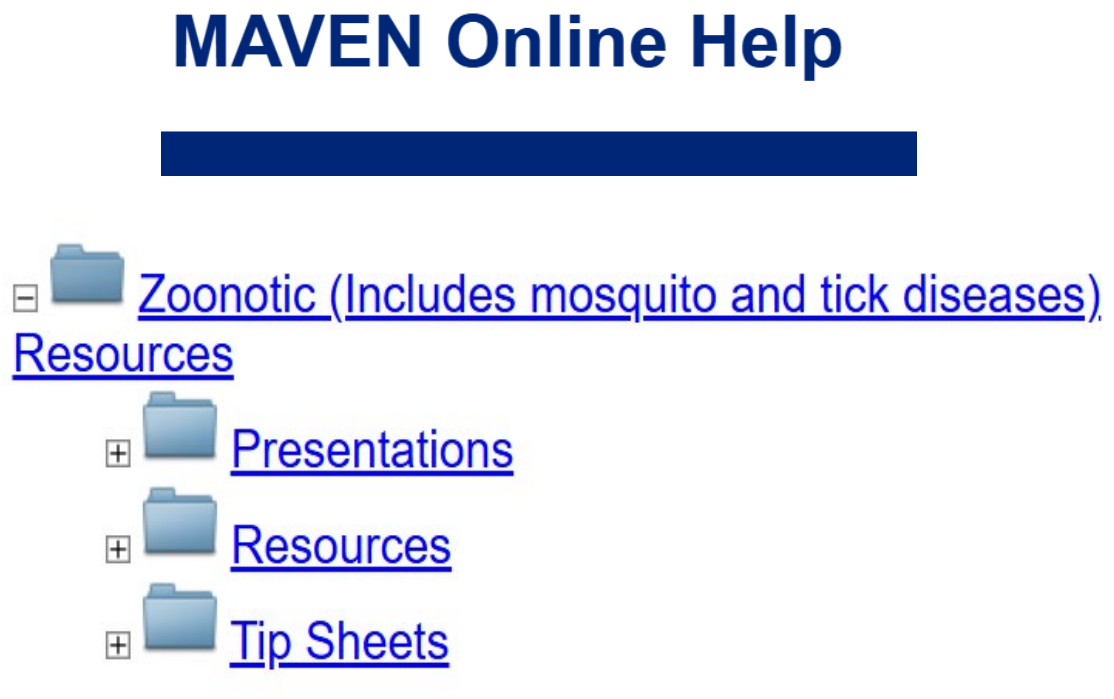
- When considering tick testing, positive or negative results from a tick or ticks attached to a person do not provide definitive evidence that someone was exposed or not exposed.

- It is possible to be bitten by a tick carrying a disease and not be infected with that disease, depending on many factors, including how long the tick was attached to the individual.

Other Tickborne Disease Reminders

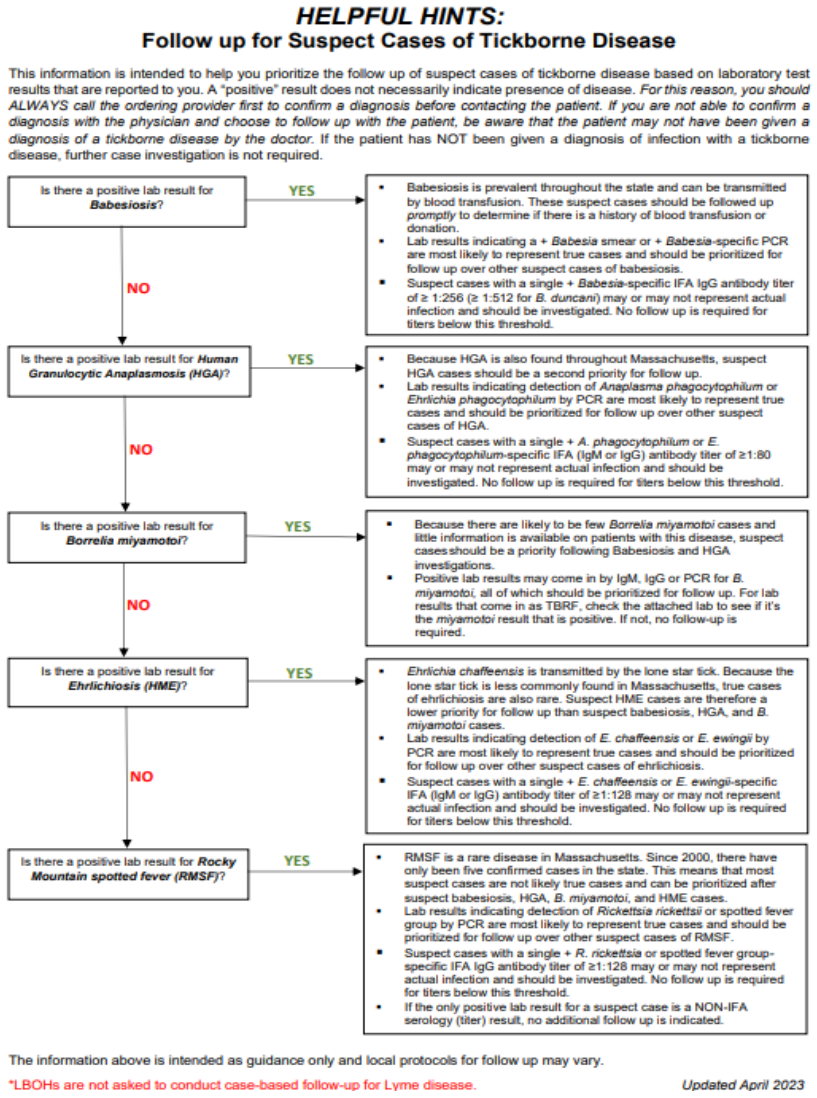
Tickborne Disease Trainings on MAVEN Help

- Within MAVEN Help, under the Zoonotic folder:
  - Presentations provide in depth training on how to conduct tickborne disease case investigations!
  - Additional tips and reminders are provided in these trainings.



Tickborne Disease LBOH Follow-up

- Timely investigations are critical to classify cases and identify trends.
- Tickborne Disease Tip Sheet available to help prioritize follow up of suspect cases of tickborne disease.
- Tularemia Tip Sheet Coming Soon!



HELPFUL HINTS:

Follow up for Suspect Cases of Tickborne Disease

This information is intended to help you prioritize the follow up of suspect cases of tickborne disease based on laboratory test results that are reported to you. A "positive" result does not necessarily indicate presence of disease. *For this reason, you should ALWAYS call the ordering provider first to confirm a diagnosis before contacting the patient. If you are not able to confirm a diagnosis with the physician and choose to follow up with the patient, be aware that the patient may not have been given a diagnosis of a tickborne disease by the doctor.* If the patient has NOT been given a diagnosis of infection with a tickborne disease, further case investigation is not required.

Is there a positive lab result for *Babesiosis*? YES

- Babesiosis is prevalent throughout the state and can be transmitted by blood transfusion. These suspect cases should be followed up *promptly* to determine if there is a history of blood transfusion or donation.
- Lab results indicating a + *Babesia* smear or + *Babesia*-specific PCR are most likely to represent true cases and should be prioritized for follow up over other suspect cases of babesiosis.
- Suspect cases with a single + *Babesia*-specific IFA IgG antibody titer of ≥ 1:256 (≥ 1:512 for *B. duncani*) may or may not represent actual infection and should be investigated. No follow up is required for titers below this threshold.

NO

Is there a positive lab result for *Human Granulocytic Anaplasmosis (HGA)*? YES

- Because HGA is also found throughout Massachusetts, suspect HGA cases should be a second priority for follow up.
- Lab results indicating detection of *Anaplasma phagocytophilum* or *Ehrlichia phagocytophilum* by PCR are most likely to represent true cases and should be prioritized for follow up over other suspect cases of HGA.
- Suspect cases with a single + *A. phagocytophilum* or *E. phagocytophilum*-specific IFA (IgM or IgG) antibody titer of ≥1:80 may or may not represent actual infection and should be investigated. No follow up is required for titers below this threshold.

NO

Is there a positive lab result for *Borrelia miyamotoi*? YES

- Because there are likely to be few *Borrelia miyamotoi* cases and little information is available on patients with this disease, suspect cases should be a priority following Babesiosis and HGA investigations.
- Positive lab results may come in by IgM, IgG or PCR for *B. miyamotoi*, all of which should be prioritized for follow up. For lab results that come in as TBRF, check the attached lab to see if it's the *miyamotoi* result that is positive. If not, no follow-up is required.

NO

Is there a positive lab result for *Ehrlichiosis (HME)*? YES

- *Ehrlichia chaffeensis* is transmitted by the lone star tick. Because the lone star tick is less commonly found in Massachusetts, true cases of ehrlichiosis are also rare. Suspect HME cases are therefore a lower priority for follow up than suspect babesiosis, HGA, and *B. miyamotoi* cases.
- Lab results indicating detection of *E. chaffeensis* or *E. ewingii* by PCR are most likely to represent true cases and should be prioritized for follow up over other suspect cases of ehrlichiosis.
- Suspect cases with a single + *E. chaffeensis* or *E. ewingii*-specific IFA (IgM or IgG) antibody titer of ≥1:128 may or may not represent actual infection and should be investigated. No follow up is required for titers below this threshold.

NO

Is there a positive lab result for *Rocky Mountain spotted fever (RMSF)*? YES

- RMSF is a rare disease in Massachusetts. Since 2000, there have only been five confirmed cases in the state. This means that most suspect cases are not likely true cases and can be prioritized after suspect babesiosis, HGA, *B. miyamotoi*, and HME cases.
- Lab results indicating detection of *Rickettsia rickettsii* or spotted fever group by PCR are most likely to represent true cases and should be prioritized for follow up over other suspect cases of RMSF.
- Suspect cases with a single + *R. rickettsia* or spotted fever group-specific IFA IgG antibody titer of ≥1:128 may or may not represent actual infection and should be investigated. No follow up is required for titers below this threshold.
- If the only positive lab result for a suspect case is a NON-IFA serology (titer) result, no additional follow up is indicated.

The information above is intended as guidance only and local protocols for follow up may vary.

*LBOHs are not asked to conduct case-based follow-up for Lyme disease.

Updated April 2023

Tickborne Disease Surveillance Summaries

- Annual and Monthly Tick-borne Surveillance Summaries are available at Tick-borne disease surveillance summaries and data | Mass.gov.
- 2025 Tickborne Disease Surveillance Report published April 2026.

Tickborne Diseases Reported in Massachusetts, 2015 - 2026[1]

Disease	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026 YTD[1]
Lyme Disease[2]	4370	207	416	189	165	103	28	5102	9728	8840	8619	749
Babesiosis	448	519	591	527	640	580	610	454	837	788	881	5
Human Granulocytic Anaplasmosis	771	874	1218	658	703	740	773	625	747	1060	1496	8
Borrelia miyamotoi	8	16	43	63	32	16	26	16	47	57	107	2
Powassan virus	3	5	3	7	9	7	6	5	11	11	12	0
Total:											11,115	764

Data are current as of 04/02/2026 and include yearly case counts through 03/31/2026.

Powassan Virus Laboratory Testing at SPHL

- Powassan virus testing is now available at the State Public Health Laboratory!
- This will allow for faster identification of cases in MA without requiring specimens be sent to CDC.
- DPH Epidemiology Team conducts follow-up for all Powassan virus cases and shares with LBOH once follow-up occurs. No LBOH follow-up is needed at this time.

Summary

- AGS is an emerging vector-borne disease with an increasing burden in MA necessitating public health surveillance.
- As of April 1, 2026, AGS is reportable in MA.
- Case investigations should ensure completion of clinical and risk question packages, specifically questions surrounding case's AGS reaction.
- Depending on completeness of QPs, providers should be called first and cases second to fill in remaining information.

Resources

- AGS Case Investigation Tip Sheet
- AGS Fact Sheet
- AGS Clinical Advisory
- DPH 24/7 Epidemiology line: 617-983-6800
- Managing Alpha-gal Syndrome | CDC
- Fast Facts: Products That May Contain Alpha-gal | Alpha-gal Syndrome | CDC

Your Questions?