Delaware's **Lyme Disease Education Oversight Board** & Host **Beebe Healthcare** present the **Lyme Aware Delaware Conference**, a continuing education opportunity for Delaware healthcare professionals to learn more about Lyme and other tickborne diseases. **Welcome!**

DELAWARE'S Lyme Disease Education Oversight Board

Beebe Healthcare

Delaware's **Lyme Disease Education Oversight Board** (LDEOB) & Host **Beebe Healthcare** welcome you to the

2nd Annual Lyme Aware Delaware CONFERENCE

Friday, October 17, 2025
8:00 AM – 4:30 PM
Live Stream Event

Earn up to 7.5 CME credits!*

Morning Agenda†

Time	Topic	Speaker
8:00 - 8:30	**Log-In**	
	OPENING	
8:30 - 8:35	**Conference Opening Remarks**	**Judy Landis Setting, BSN, RN (Inactive), CCRA**, Delaware's Lyme Disease Education Oversight Board (LDEOB) Chair
8:35 - 8:40	**Welcome**	**David A. Tam, MD, FACHE**, President & CEO, Beebe Healthcare
	DELAWARE TICKBORNE ILLNESSES LEGISLATION & UPDATES	
8:40 - 8:50	**Delaware Lyme Legislation**	**The Honorable Kyle Evans Gay**, Lieutenant Governor of Delaware
8:50 - 9:05	**Delaware Tick Program Updates**	**Ashley C. Kennedy, PhD, BCE**, Delaware State Tick Biologist, Delaware DNREC Division of Fish and Wildlife, LDEOB Member
9:05 - 9:10	**DPH Vector-Borne Disease Updates & Mandatory Reporting**	**Antonio Alvarado, MS**, Delaware Department of Public Health, Vector-Borne Disease Epidemiologist, One Health Program
	LYME DISEASE	
9:10 - 9:50	**Lyme Disease and Post-Treatment Illness**	**John Aucott, MD**, Director, Johns Hopkins Lyme Disease Clinical Research Center, Associate Professor of Medicine, Johns Hopkins School of Medicine; Former Chairman of the Federal Tick-Borne Disease Working Group
9:50 - 10:30	**Unraveling the Immunopathology of Infection-Associated Chronic Illnesses: Sex Differences and Predictive Diagnostics**	**Michal "Mikki" Caspi Tal, PhD**, Principal Scientist, Massachusetts Institute of Technology Department of Biological Engineering and Tal Research Group; Associate Scientific Director, MIT Center for Gynepathology Research
10:30 - 10:35	**Break**	
10:35 - 11:15	**Neuropsychiatric Aspects of Tick-Borne Illness: Impact and Treatment**	**Brian A. Fallon, MD, MPH**, Director, Lyme & Tick-Borne Diseases Research Center, Director, Center for Neuroinflammatory Disorders & Biobehavioral Medicine, Professor of Clinical Psychiatry, Columbia University Irving Medical Center
11:15 - 11:55	**Lyme Disease Treatment**	**Neil G. Rellosa, MD**, Pediatric Infectious Disease Specialist, Nemours Children's Hospital, LDEOB Member & **Elizabeth Maloney, MD**, Education Director, VectorWise CME, Former Member of the Federal Tick-Borne Disease Working Group

Speakers


Antonio Alvarado, MS
DE Public Health


John Aucott, MD
Johns Hopkins Medicine


Choukri Ben Mamoun, PhD
Yale Medicine


Michael Buoni, PhD
Delaware Tech


Michal Caspi Tal, PhD
MIT Tal Research Group


Scott Commins, MD, PhD
UNC Medicine


Monica Embers, PhD
Tulane Medicine


Brian Fallon, MD, MPH
Columbia Univ. Medical Ctr.


Lt. Gov. Kyle Evans Gay
State of Delaware


Ashley Kennedy, PhD, BCE
Delaware Tick Program


Elizabeth Maloney, MD
VectorWise CME


Comm. Trinidad Navarro
DE Insur. Commissioner


Neil Rellosa, MD
Nemours Children's Hosp.
Infectious Disease


David Sullivan Jr., MD
Johns Hopkins
Infectious Disease


David Tam, MD
President & CEO
Beebe Healthcare

LymeDiseaseEducation.org | BeebeHealthcare.org

†Agenda subject to change without notice

2nd Annual Lyme Aware Delaware CONFERENCE

Afternoon Agenda†

*CONTINUING MEDICAL EDUCATION FOR PHYSICIANS

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the Medical Society of Delaware, Beebe Healthcare and Delaware's Lyme Disease Education Oversight Board. The Medical Society of Delaware is accredited by the ACCME to provide CME activities for physicians.

The Medical Society of Delaware designates this live continuing medical education activity for a maximum of 7.5 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

It is the policy of the Medical Society of Delaware to comply with the ACCME Standards for Commercial Support of Continuing Medical Education. In keeping with these standards, all faculty participating in continuing medical education activities jointly provided by the Medical Society of Delaware are expected to disclose to the activity audience any real or apparent conflicts of interest related to the content of their presentation.

Joint providership of CME by the Medical Society of Delaware in no way implies endorsement or recommendation of any product or service.

This activity is not supported by commercial funding.

MSD Medical Society of Delaware

ACCME ACCREDITED

Time	Topic	Speaker
	BABESIOSIS	
11:55 - 12:35	**Therapeutic Strategies Targeting *Babesia* Adaptation and Survival Mechanisms**	**Choukri Ben Mamoun, PhD**, John F. Enders Professor of Medicine (Infectious Diseases) and of Microbial Pathogenesis and Pathology, Yale School of Medicine
12:35 - 1:10	**Break**	
1:10 - 1:20	**Afternoon Welcome**	**The Honorable Trinidad Navarro**, Insurance Commissioner of Delaware
1:20 - 1:35	***Babesia* in the Mid-Atlantic Region & DE Tick Testing Program**	**Michael H. Buoni, PhD**, Instructor of Genetics, Microbiology and Molecular Biology, Delaware Technical Community College
1:35 - 2:15	**Curative Pharmokinetics and Pharmacodynamics in the *Babesia microti* Immunocompromised Mouse Model: Bench to Clinic**	**David J. Sullivan Jr., MD**, Professor, Infectious Diseases Physician, Malariologist, Department of Molecular Microbiology & Immunology, Johns Hopkins Malaria Research Institute, Center for Global Health, Johns Hopkins Bloomberg School of Public Health
	OTHER TICKBORNE ILLNESSES	
2:15 - 2:55	**Combination Therapy for *Borrelia* and *Bartonella* Infections**	**Monica E. Embers, PhD**, Professor and Director of Vector-Borne Disease Research; Head, Education and Training Program, Tulane National Primate Research Center, Tulane University School of Medicine
2:55 - 3:00	**Break**	
3:00 - 3:40	**A Review of Diagnostic Testing for Lyme Disease**	**Elizabeth L. Maloney, MD**, Education Director, VectorWise CME, Former Member of the Federal Tick-Borne Disease Working Group
3:40 - 4:20	**A Tick Bite Can Make Me Allergic to Red Meat!? What You Need to Know About Alpha-Gal Syndrome**	**Scott P. Commins, MD, PhD**, William J. Yount Distinguished Professor of Medicine, University of North Carolina School of Medicine; Associate Chief for Allergy & Immunology; Medical Director, UNC Allergy and Immunology Clinic at Eastowne
	CLOSING	
4:20 - 4:25	**Evaluations & CME Information**	**Lori Maramante, EdD**, LDEOB Vice Chair & **Mary Landon Green**, Director, Marketing & Communications, Beebe Healthcare
4:25 - 4:30	**Gratitude & Closing**	**Lori Maramante, EdD**, LDEOB Vice Chair

†Agenda subject to change without notice

2nd Annual Lyme Aware Delaware CONFERENCE

October 17, 2025

Speakers

Antonio Alvarado, MS
Delaware Public Health

Antonio Alvarado is the Vector-borne Disease Epidemiologist for the Delaware Division of Public Health (DPH). He conducts routine surveillance of human vector-borne diseases in Delaware, including calculating prevalence and incidence rates and analyzing this data for trends.

Antonio received his Masters of Science degree in Medical Entomology from Cornell University in 2022. His masters thesis focused on kissing bugs and Chagas disease in the southwestern United States. Before serving as DPH's vector-borne disease epidemiologist, he managed Lebanon and Lancaster County's mosquito and tick surveillance and control programs.

John N. Aucott, MD
Johns Hopkins Medicine

Dr. John Aucott is an Associate Professor of Medicine at Johns Hopkins University School of Medicine and the Director of the Johns Hopkins Lyme Disease Clinical Research Center. He is principal investigator for the SLICE studies of Lyme disease where his research interests center on the pathophysiology, diagnosis and treatment of Lyme disease associated persistent illness.

Dr. Aucott is an active clinician and educator and the program director for the Johns Hopkins Fellowship in Lyme and tickborne diseases. He is the past chair of the U.S. Department of Health and Human Services Tick-Borne Disease Working Group and current scientific advisor for the HHS LymeX diagnostic program.

Choukri Ben Mamoun, PhD
Yale School of Medicine

Dr. Choukri Ben Mamoun is the John F. Enders Professor of Medicine (Infectious Diseases) at Yale School of Medicine. He is also Professor in the departments of Microbial Pathogenesis and Pathology at Yale. His research at Yale is dedicated to unraveling the development and survival mechanisms of infectious agents, including the tick-borne pathogen *Babesia*, while pioneering innovative diagnostic and therapeutic strategies for combatting infectious diseases. Dr. Ben Mamoun's body of work is reflected in the publication of 130 papers in various journals, including Nature, Science, Nature Microbiology, Cell, PNAS, Structure, Science Advances, Plos Pathogens, JBC, and JID. His influence extends beyond his research. He is affiliated with the Yale Institute for Global Health and is a sought-after international keynote speaker.

2nd Annual Lyme Aware Delaware CONFERENCE

October 17, 2025

Speakers (cont.)

Michael H. Buoni, PhD
Delaware Tech

Dr. Michael Buoni has over 27 years of teaching experience in the sciences. He holds a bachelor's degree in biology, a master's degree, and two doctorate degrees. His publications include topics from tickborne pathogen identification and testing, to developing scientific pedagogical content knowledge. Dr. Buoni has also been involved in several grants, including EPSCoR and INBRE grants collaborating with undergraduates, and an NSF grant as a teacher trainer for CRISPR gene editing. His passion is not only in research, but also working with undergraduate students in the community college and university settings. Dr. Buoni is the lead research professor at the Owens campus of Delaware Tech where, aside from his normal teaching load, he oversees thirteen undergraduate research students in areas of CRISPR gene editing, novel yeast metabolism, and tickborne pathogen testing. He was awarded Teacher of the Year in three different institutions where he has worked.

Scott P. Commins, MD, PhD
University of North Carolina Medicine

Dr. Scott Commins is the William J. Yount, MD Distinguished Professor at the University of North Carolina at Chapel Hill where he is a member of the UNC Food Allergy Initiative, the Institute for Global Health and Infectious Diseases, and the Southeastern Center of Excellence for Vector Borne Diseases. Dr. Commins maintains an active clinical practice and research program related to the alpha-gal mammalian meat allergy syndrome, eospinophilic esophagitis, venom allergy, and the human immune response to tick bites. Dr. Commins received his M.D. & Ph.D. (Biochemistry & Molecular Biology) from the Medical University of South Carolina (Charleston, SC). Following a residency in Internal Medicine, he completed a fellowship in Allergy and Clinical Immunology at the University of Virginia (Charlottesville, VA). Dr. Commins was a member of the congressionally-appointed Tick-Borne Disease Working Group (2018-2020) where he was co-chair of the alpha-gal syndrome and public comment subcommittees.

Monica E. Embers, PhD
Tulane University Medicine

Dr. Monica Embers is currently a Professor in the Division of Immunology, Head of the Education and Training Program, and the Director of Vector-borne Disease Research at the Tulane National Primate Research Center. Her research program regarding Lyme disease and *Borrelia burgdorferi* specializes in animal models. The research is centered around four major efforts: (1) identifying treatments that can eradicate *B. burgdorferi* infection; (2) detection of persistent Lyme disease spirochetes in human (autopsy) tissues; (3) immunodiagnosis for *B. burgdorferi* infection and cure; and (4) prevention of Lyme and tick-borne diseases through vaccination. By transmitting Lyme disease to mice and nonhuman primates by tick, and studying the natural course of infection, her group aims to attain a better understanding of the clinical quandaries of human Lyme disease, including effective diagnosis, prevention and treatment.

2nd Annual Lyme Aware Delaware CONFERENCE

October 17, 2025

Speakers (cont.)

Brian A. Fallon, MD, MPH
Columbia University
Irving Medical Center

Dr. Brian Fallon directs the Lyme and Tick-borne Diseases Research Center at the Columbia University Irving Medical Center and the Center for Neuroinflammatory and Somatic Disorders at the NYS Psychiatric Institute. Dr. Fallon also directs a national Clinical Trials Network for Lyme disease and other Tick-borne Diseases. Dr. Fallon's focus has been on the major questions concerning post-treatment Lyme disease, particularly the neurologic and treatment aspects. The range of published work includes diagnostics, neuroimaging, biomarkers, phenomenology, neurocognition, and treatment studies. Current work is focused on novel approaches to treat the long hauler syndromes, especially the persistent effects of Lyme disease. Since 2022, Dr. Fallon has served on the steering committee to oversee the NIH's Long COVID clinical trials research portfolio (RECOVER-CT).

Ashley C. Kennedy, PhD, BCE
Delaware Tick Program

Dr. Ashley Kennedy is a Board-Certified Entomologist with a specialty in medical and veterinary entomology. She serves as the Delaware state Tick Biologist within the Division of Fish and Wildlife (Newark, DE), directing the state tick surveillance program. After her undergraduate studies at Johns Hopkins University (Baltimore, MD) and graduate studies in Entomology and Wildlife Ecology at the University of Delaware (Newark, DE), she completed postdoctoral appointments at the Tick-Borne Disease Laboratory at the Defense Centers for Public Health (Aberdeen Proving Ground-South, MD) and the U.S. Fish and Wildlife Service (Falls Church, VA). Broadly, she is interested in disease ecology, host-vector pathogen dynamics, and the intersection of conservation and public health. Dr. Kennedy is a member of Delaware's Lyme Disease Education Oversight Board.

Elizabeth L. Maloney, MD
VectorWise CME

Dr. Elizabeth Maloney is a family physician, policy consultant and medical educator. In 2021, she was appointed to the Tick-Borne Disease Working Group (TBDWG), a federal advisory committee on tick-borne illnesses. She served on several TBDWG subcommittees prior to her appointment, from 2018 to 2020. She has also provided testimony regarding tick-borne disease to several state legislative committees and Canada Health. Since 2007, Dr. Maloney has been providing comprehensive, evidence-based, accredited continuing medical education courses. She is the Education Director for VectorWise CME, a nonprofit proving free, online, accredited CME on a range of vector-borne illnesses. Further, she has authored several peer-reviewed papers, including GRADE based treatment guidelines on Lyme disease.

2nd Annual Lyme Aware Delaware CONFERENCE

October 17, 2025

Speakers (cont.)

Neil G. Rellosa, MD
Nemours Children's Hospital
Infectious Disease

Dr. Neil Rellosa is the HIV Program Director and an attending physician in the Division of Infectious Diseases at Nemours Children's Hospital, Delaware. He is also an Assistant Professor of Pediatrics at Thomas Jefferson University-Sidney Kimmel Medical College. His clinical and research interests include HIV, Lyme Disease, Hepatitis C and PrEP for adolescents. He completed his medical degree at Temple University School of Medicine, and his fellowship in Pediatric Infectious Disease at Children's National Medical Center in Washington, DC., during which he served as a Medical Officer for the Food and Drug Administration. He then served as an attending physician at St. Christopher's Hospital for Children in both the Sections of Infectious Diseases and HIV/Immunology before returning to Delaware. He is a member of Delaware's Lyme Disease Education Oversight Board.

David J. Sullivan Jr., MD
Johns Hopkins Medicine
Infectious Disease

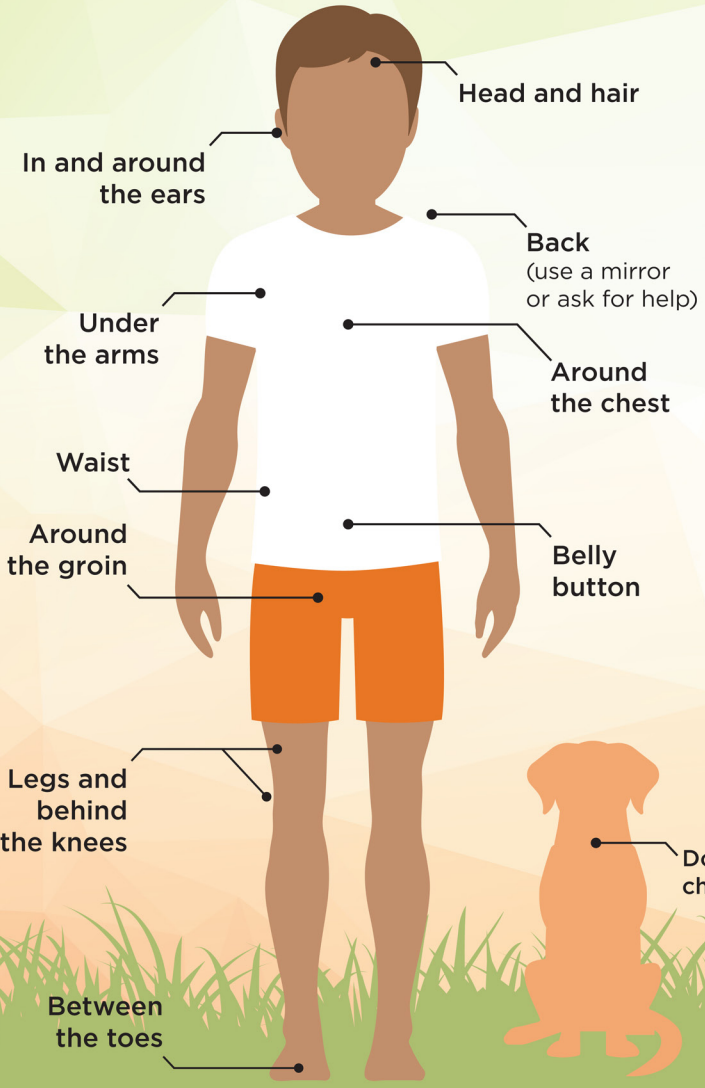
Dr. David Sullivan Jr. is a malariologist, and infectious diseases physician whose research involves malaria and *Babesia* drugs, and COVID-19 convalescent plasma. His area of expertise focuses on heme to heme crystal biochemistry in the malaria infected erythrocyte revolving around diagnosis as well as malaria drug action and resistance. In 2020, Dr. Sullivan pivoted to lead the successful effective early outpatient COVID-19 treatment with COVID-19 convalescent plasma which reduced hospitalizations. He collaborated with OneBlood on the Biologic License Application which was FDA approved in late 2024 for convalescent plasma use in the immunosuppressed. In 2021, Dr. Sullivan again pivoted to work on the pharmacodynamics of many malaria drugs in the immunocompromised murine mouse model for *Babesia microti*.

Michal Caspi Tal, PhD
MIT Tal Research Group

Dr. Michal Caspi Tal (Mikki), is an immunoengineer, and a principal scientist at the Massachusetts Institute of Technology (MIT). Dr. Tal leads the Tal Research Group within the Department of Biological Engineering and serves as the associate scientific director of the Center for Gynepathology Research at MIT. Michal is combining pre-clinical and clinical investigation to map the trajectory of the immune response to infection and to examine how sex and age differences impact these trajectories. Dr. Tal is running the largest clinical study at MIT, MAESTRO, on chronic Lyme and Long COVID and complementing that with the use of the mouse model of Lyme disease to deeply investigate sex and age differences in the immune response to infection. Her research is focused on developing predictive diagnostics, to distinguish those at risk of developing infection-associated chronic illness.

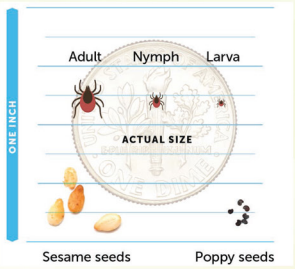
FOUND A TICK?
REMOVE IT QUICK

Tick checks are one of the ways you can prevent Lyme disease and other infections that are spread by ticks. Check your entire body, especially:

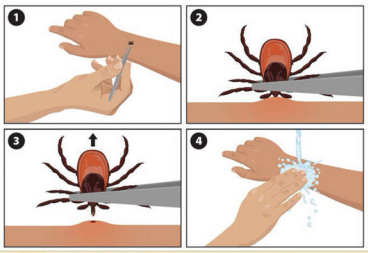


WHAT TO LOOK FOR?

Feel for **bumps** and look for tiny **dark spots**. Look carefully, most ticks are very small.



HOW TO REMOVE A TICK



Remove the tick immediately and wash the bite area with soap and water to reduce the risk of infection.

DELAWARE HEALTH AND SOCIAL SERVICES
Division of Public Health
Office of Infectious Disease Epidemiology

ONE HEALTH DELAWARE
PEOPLE | ENVIRONMENT | ANIMALS

HOW TO PROTECT AGAINST TICKS

Delaware is home to many types of ticks. Some can spread germs, which can cause diseases like Lyme disease. Anyone outdoors is at risk of getting a tick bite and becoming sick.

If temperatures are above freezing, ticks are out! The best way to protect yourself from tick-borne disease is to prevent tick bites.

DO

Check for ticks after working outdoors concentrating on feet, armpits, back of knees, elbows, hair, behind ears, waist, and groin areas.

Consult your doctor if you develop a fever or rash within several days to weeks after removing a tick.

Use EPA-registered insect repellents with one of these ingredients: DEET, picaridin, IR3535, Oil of Lemon Eucalyptus, para-menthane-diol, or 2-undecanone.

Avoid walking in tall grass, leaf litter, or in wooded or brushy areas.

Tuck shirts into pants, and pull socks over pant legs. Consider wrapping double-sided tape around pant legs

Wear light-colored long sleeved shirts and pants to find ticks more easily.

Walk in the center of trails.

Put dry clothes in a dryer on high heat for at least 10 minutes to kill unattached ticks.

Treat clothing and gear with products containing permethrin.

DON'T

Don't twist, jerk, tug, or crush tick.

Don't use your fingernail to try to remove the tick.

Don't use matches.

Don't smother the tick with petroleum jelly, nail polish, or other folk remedies. This may cause the tick to spread more germs into your body.

THE SAFEST WAY TO REMOVE A TICK IS TO USE TWEEZERS OR A SPECIAL TICK REMOVAL TOOL TO GRAB THE TICK AS CLOSE TO THE SKIN AS POSSIBLE AND PULL UPWARD.

DELAWARE HEALTH AND SOCIAL SERVICES
Division of Public Health
Office of Infectious Disease Epidermiology

ONE HEALTH DELAWARE
PEOPLE | ENVIRONMENT | ANIMALS

LYME DISEASE SYMPTOMS

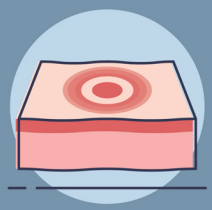
Early Signs (Three to 30 days after bite)


Fever


Chills

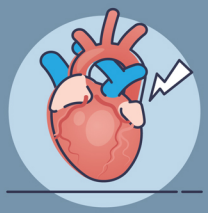

Headache


Fatigue


Expanding Rash

Later Signs (Days to months after bite)


Facial Drooping

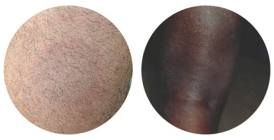

Irregular Heartbeat

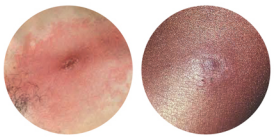

Dizziness

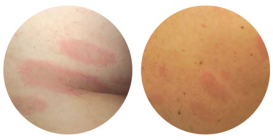

Joint and Muscle Pain

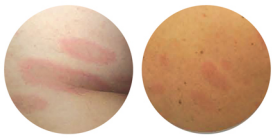

Stiff Neck

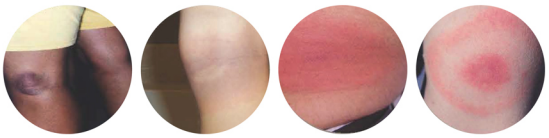
LYME DISEASE RASHES CAN LOOK VERY DIFFERENT FROM THE COMMON BULLSEYE


Faint colors and borders


Crusted centers


More than one rash


Different shapes and colors


Appearing anywhere on the body


The redness in the picture above is caused by irritation to the tick bite, not by Lyme disease. If you develop any of these symptoms, see your doctor to determine if you need treatment.

DELAWARE HEALTH AND SOCIAL SERVICES
Division of Public Health
Office of Infectious Disease Epidemiology

ONE HEALTH DELAWARE
PEOPLE | ENVIRONMENT | ANIMALS

RED MEAT ALLERGY

A.K.A., ALPHA-GAL

Brought to you by the bite of a tick

Alpha-gal Syndrome (AGS) begins with the tick bite, which can cause an allergic reaction to red meat (beef, pork, lamb, venison) and related products like dairy and gelatin.

AGS makes you sick two to eight hours after eating red meat, dairy or gelatin products. You may feel sick in the middle of the night.

Not everyone bitten by a tick will become allergic to red meat. Symptoms may include hives, itchiness, swelling, stomach upset or pain, nausea, heartburn, difficulty breathing, low blood pressure, dizziness, fainting, and anaphylaxis.

Your doctor can order a blood test to see if you have AGS. While there is no cure, you can talk to your doctor to create a plan to manage your symptoms.

It is important to avoid additional tick bites, which can make your allergy more serious. The lone star tick is the main species associated with AGS, but other tick species may carry Alpha-gal.

To avoid tick bites: spray shoes/boots with products containing permethrin (an ingredient that repels insects), treat clothing with permethrin, wear light-colored clothing, tuck your pant legs into long socks and your shirt into your pants, wrap the tops of your boots or the lower part of your pants with double sided tape, and stay on the center of trails!

DELAWARE HEALTH AND SOCIAL SERVICES
Division of Public Health
Office of Infectious Disease Epidermiology

ONE HEALTH DELAWARE
PEOPLE | ENVIRONMENT | ANIMALS

Keep Our Delaware Communities Healthy – Learn About Lyme and Other Tickborne Diseases

LymeDiseaseEducation.org

Did You Know? Delaware has averaged the **8th highest incidence of Lyme disease in the U.S**. since 2018.*

Delaware's **Lyme Disease Education Oversight Board** was created by law to educate DE state healthcare providers about Lyme and other tickborne diseases. This website offers balanced, quality, professional information reflecting CDC philosophy, ILADS guidelines, and up-to-date research. Visit often to find the resources you need!

DELAWARE'S
Lyme Disease Education
Oversight Board

*Source: 2024 CDC surveillance data