



Spring 2019

Improving Rash Recognition



Lyme disease can be difficult to diagnose because early symptoms of fever, severe fatigue, and achiness are also common in many other illnesses. In addition, many cases are initially misdiagnosed because diagnostic blood tests are not always dependable, and the *erythema migrans* rash is not always present or recognizable in early Lyme disease.

Despite common belief, the stereotypical ring within a ring bullseye rash is only present in a minority of Lyme disease patients. Instead, the majority of Lyme disease rashes are uniformly red or blue-red and do not have a central clearing or bullseye. The rash is almost always round or oval and expands over days to a diameter greater than 2". The Lyme rash is often confused with a spider bite, despite spider bites not expanding in this way.

[Our study](#) shows that computerized deep learning technology can be used to more accurately identify *erythema migrans* rashes in early Lyme disease. Using this methodology to improve early rash recognition could lead to earlier diagnosis and treatment and help prevent later serious manifestations of untreated Lyme disease.

Our deep learning early rash detection research is ongoing in collaboration with the Johns Hopkins Applied Physics Laboratory and the Departments of Medicine and Dermatology at the Johns Hopkins University School of Medicine.



Ticks Know No Borders

Lyme disease is a growing worldwide epidemic and of increasing concern in many countries, including the US and Canada.

Center Director, John Aucott, MD, and Co-Director, Alison Rebman, traveled to Canada in April to be the keynote speakers at the Canadian Lyme Disease Research Network, a newly formed coalition of multidisciplinary researchers, patients, community members, practitioners, and educators working together to better understand Lyme

disease and its impact on Canadians. Directors Aucott and Rebman addressed the magnitude and complexity of the Lyme disease and tick-borne illness epidemic and discussed strategies for creating solutions.


They acknowledged that we currently don't have all the answers in Lyme disease. However, designing rigorous patient-centered research studies, such as those at the Hopkins Center, are a key foundation for the development of improved diagnostic tests and future therapies.

It is also imperative to bring together different stakeholders and collaborators from diverse disciplines and backgrounds to drive the field forward. It is encouraging that the Canadian Network is modeling their research coalition after our Center's multidisciplinary program.



Do you know how to reduce your family's Lyme disease risk and enjoy the outdoors safely?

Learn important tips for preventing Lyme disease [HERE](#).



Think the Lyme rash is always a bullseye? Think again!

[VIEW RASH POSTER](#)

Our mission is to understand and urgently address the varied manifestations of Lyme disease and translate our pioneering multidisciplinary research into improved patient care, education, and health outcomes

IN THE NEWS

- **Long-underfunded Lyme disease research** will get an injection of money in 2020: \$6 million for prevention projects, in addition to the \$30 million presently being spent by NIH.

[READ MORE](#)

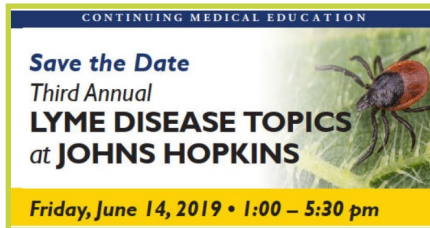


Although a step in the right direction, research funding for Lyme disease still pales in comparison to other infectious diseases (\$3 billion for HIV/AIDS, \$233 million for malaria).

Significantly more funding is needed, especially for patient-centered research such as the clinical research being conducted at the Johns Hopkins Lyme Disease Research Center.

- **A new study** shows the estimated cumulative number of Americans struggling with chronic symptoms related to Lyme disease may be over a million and as high as 1.9 million in 2020. The Center's pivotal SLICE studies were used as a basis for some of the assumptions in this study.

Center Director John Aucott, MD, states, "This paper should serve as another wake up call to public health and medical leaders as to the significant health impact of the expanding tick-borne disease epidemic." [READ MORE](#)



The Third Annual Lyme Disease Topics at Johns Hopkins, a Continuing Medical Education (CME) program for Health Practitioners, is taking place on Friday, June 14, 2019 from 1pm - 5:30pm at the Mount Washington Conference Center, Baltimore, MD. Patients, be sure to tell your health practitioners about this informative CME program covering the latest in Lyme disease. Health practitioners, please [SIGN UP NOW](#) to reserve a spot.

JOHNS HOPKINS
Lyme Disease Awareness Webinar
JOIN OUR LIVE ONLINE WEBINAR
May 30, 2019 at 12 noon EST
Find out what you need to know about Lyme disease. [LEARN MORE](#)

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SUPPORT THE CENTER

Philanthropic support makes a difference.

Donations are used to progress our pioneering research.

Your gift helps us advance critical knowledge and clinical tools to improve health outcomes for Lyme disease patients.

HOW TO GIVE

The Center is grateful for the support of the Steven and Alexandra Cohen Foundation, Bay Area Lyme Foundation, Global Lyme Alliance, individual donors, family foundations, and collaborators

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