

Genetics & Chronic Lyme: A Link?



*Joanna Lyon,
PharmD, MEd,
MHS, CHES, BCGP*

Joanna Lyon and Hyunuk Seung, University of Maryland School of Pharmacy, published an article in **Meta Gene**, May 2019 (online), ***Genetic Variation in the ABCB1 Gene Associated with Post Treatment Lyme Disease Syndrome Status***. A possible genetic connection in PTLDS/chronic Lyme was studied: “This multi-centered, randomized control trial studied the possible correlation between ABCB1 (MDR1) gene variants and the incidence of Post Treatment Lyme Disease Syndrome (PTLDS) in affected patients,” and found “a significant association with PTLDS and patients with the rs1128503 variant allele TC on the ABCB1 gene.”

Dr. Lyon received LDA grant support for the project, and the resultant publication is the 51st peer reviewed publication which focuses on LDA-supported research. (Dr. Lyon will be lecturing on this topic at the **LDA/Columbia Scientific CME Conference**, September 21 & 22, 2019 in Philadelphia, PA. **Dr. Lyon Bio/Talk Summary**)

LDA-supported research: Articles range from the 1996 ground-breaking, *Borrelia burgdorferi* DNA in the Urine of Treated Patients with Chronic Lyme Disease Symptoms: A PCR Study of 97

Cases, by the late Manfred Bayer in the journal **Infection** to articles in **The Proceedings of the National Academy of Science, Neurology, Genetics, Gene, Emerging Infectious Diseases, Journal of the American Medical Association, Biochemistry, Veterinary Sciences, Clinical Infectious Disease, Journal of International Neuropsychological Society, Ticks and Tick-Borne Diseases**, to **Meta Gene** in 2019.

Researchers funded include, Drs. Ying Zhang, Brian Fallon, Ed Breitschwerdt, Steven Schutzer, Travis Taylor, Eva Sapi, Kerry Clark, Dan Cameron, Mario Phillip, Ben Luft and many more from across the U.S.

Other ground-breaking studies LDA has supported with grants include:

- The Underdiagnosis of Neuropsychiatric Lyme Disease in Children and Adults.
- A randomized, placebo-controlled trial of repeated IV antibiotic therapy for Lyme encephalopathy.
- Whole-Genome Sequences of Thirteen Isolates of *Borrelia burgdorferi*.
- Absence of *Borrelia Burgdorferi*-specific immune complexes in chronic fatigue syndrome.
- A Drug Combination Screen Identifies Drugs Active against Amoxicillin-Induced Round Bodies of in Vitro *Borrelia burgdorferi* Persists from an FDA Drug Library,
- Characterization of Biofilm Formation by *Borrelia burgdorferi* In Vitro.
- *Borrelia Burgdorferi*-Specific Immune Complexes in Acute Lyme Disease.
- A Controlled Study of Cognitive Deficits in Children with Chronic Lyme Disease.
- Severity of Lyme disease with persistent symptoms: Insights from a double-blind placebo-controlled clinical trial.
- Distinct Cerebrospinal Fluid Proteomes Differentiate

Post-Treatment Lyme Disease from Chronic Fatigue Syndrome.

- Regional prevalences of *Borrelia burgdorferi*, *Borrelia bissettiae*, and *Bartonella henselae* in *Ixodes affinis*, *Ixodes pacificus* and *Ixodes scapularis* in the USA.

[Click here for all 51 journal articles](#)

[LDA Research Funding Results Summary](#)