

# The Mayday Project's Response to the Public Comment

**Line 2:**

Lyme disease is a *vector-borne* bacterial infection caused by several species of *Borrelia*, including *B. burgdorferi*, *B. californiensis*, *B. carolinensis*, *B. kurtenbachii*, *B. miyamotoi*, *B. lonestari*.

**Line 4:**

The CDC estimates that the number of Americans diagnosed with Lyme disease each year is around 300,000.

**Lines 8-10:**

This is not an accurate representation of how doctors evaluate or diagnose Lyme disease. In the absence of an EM rash, most doctors rely on two-tier testing for the initial diagnosis of Lyme disease, regardless of clinical presentation or symptoms.

**Lines 16-20:**

This should include the 2014 ILADS peer reviewed guidelines. This will improve the level of objective vantage points on the treatment and diagnosis of Lyme disease and other vector-borne pathogens.

**Lines 26-39:**

**Please refer to the section "At a Glance: Conflicts Within IDSA Panel Members"**

**Line 40:**

Ms. Rips is not a Lyme patient advocate. In fact she has no experience with Lyme. Our suggestion is to include several patients with a varied response to treatment.

1. Standard Lyme patient (EM rash, no persistent symptoms after IDSA standard treatment)
2. Lyme patient that had standard IDSA treatment and it failed, seeing an LLMD (one with EM rash, one without)
3. Lyme patient that had standard IDSA treatment and it failed, not pursuing any further therapies (one with EM rash, one without)

**Lines 43-44:**

Correction: ...as well as the diagnosis and treatment of **other vector-borne** co-infections often transmitted by vectors carrying Lyme disease.

**Lines 47-48:**

Effective measures to prevent the spread of *Borrelia* infections following a bite from a tick or another vector.

**Lines 70-71:**

Addition: (This is to include a variety of science evidence from respected outside sources, including researchers from ILADS.)

**Lines 117-120:**

Full disclosure is required. This wasn't done as there are numerous Conflicts of Interest not cited. See the attached document "At A Glance: Conflicts of Interest within IDSA Panel Members."

**Lines 120-124:**

16 of the 30 panelists have multiple conflicts of interest. See the attached document "At A Glance: Conflicts of Interest within IDSA Panel."

**Line 135:**

Question 1. This question should include "and other vectors known to carry Lyme?"

**Line 136-137:**

Question 2. This question should include "for preventing vector bites and vector infections?"

**Lines 138-139:**

Question 3. Should individuals be test tested for vector-borne pathogens solely based on the history of a bite?

**Lines 140-141:**

Question 4. Who should receive antibiotic prophylaxis indicated to prevent other vector-borne diseases?

**Line 142:**

Question 5. Is antimicrobial prophylaxis indicated to prevent other vector-borne diseases?

**Line 143:**

**Question 6: Is antimicrobial prophylaxis indicated after a bite received from a vector known to carry Lyme and co-infections?**

**Line 145:**

Question 8. Is antimicrobial prophylaxis indicated after vector bites when a vector is unknown?

**Line 155-156:**

Question 16. This method of testing has been proven to be inconclusive and thus should not be used as a diagnostic test. Quoted here is the highest success rate for this testing method- "68% sensitivity." (Bacon et al. J Infect Dis 2003; 187:1187-99) Note: This is the highest accuracy rate. If you take the mean of current studies to date, the accuracy rate drops to a 56% sensitivity rate and a 99% specificity rate. The AIDs tests has an accuracy rate of 99.5%.

**Line 172:**

Question 25. Additional question to ask- Should all patients presenting symptoms of Lyme Carditis receive a TEE to screen for calcification of valves?

**Line 185:**

Question 34. Should doctors be allowed to choose whether or not to administer additional therapies on a case by case basis after initial treatment Lyme arthritis does not resolve completely?

**Line 199**

Question 39. Additional questions- F. MS, G. Parkinson's, H. Alzheimer's, I. ALS, J. Autism Spectrum, K. Lupus

**Line 204-205:**

Question 42. What clinical syndromes are attributable to prolonged, or chronic infection with Borrelia species presenting as Lyme disease?

**Line 206-207:**

Question 43. Are chronic, nonspecific symptoms associated with Lyme associated Borrelia infection in patients who lack objective clinical signs?

**Line 208-209:**

Question 44. Are prolonged symptoms following treatment for Lyme disease more common in patients who are simultaneously infected with multiple vector-borne pathogens?

**Line 210-211:**

Question 45. Should patients with prolonged, nonspecific symptoms be tested for vector-borne pathogens associated with Borrelia infections?

**Line 236:**

Question 61. When should co-infection(s), such as Anaplasma, Ehrlichia, Babesia, Powassan virus, Q fever, Bartonella, and Mycoplasma and others be suspected in individuals with Lyme disease? (I don't think we should include Morgellons because that is a whole other controversy in itself and we want to poke the hornet's nest too much).

Additional question- Should a full panel of vector-borne diseases be run when a patient is suspected of having Lyme disease?

**Line 238:**

**Question 62. Should be stricken. These vector-borne diseases are everywhere in the US. Ticks and other vectors don't understand state borders, neither to the hosts that carry them (birds, rodents, domestic animals, snakes, and others.)**

**Line 270:**

Question 77. Should the results of the ELISA to be removed as a portion of the two-tier test because of its inability to pick up other forms of Borrelia species that cause Lyme?

**Line 272:**

Question 78. The Western Blot is highly inaccurate and should be removed as a diagnostic test for Lyme.

**Line 274:**

The current testing methods are highly inaccurate and should not be utilized. Research money should be spent on improving the quality and accuracy of diagnostic testing for Lyme disease. For the interim, PCRs, IGenex, and blood smears should be included as acceptable diagnostic

testing, as their rate of successful capture is greater than that of the current diagnostics available.

**Additional Notes:**

The conflicting research by current panelist and additional researchers should be reviewed. Please refer to "Persistent Lyme Study References".

**Articles on Persistent Lyme Infection**

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### **At A Glance: Conflicts of Interest within IDSA Panel Members**

IDSA Handbook on Clinical Practice Guideline Development (pages 8-9): *“All prospective panel members will complete the IDSA Disclosure of Interests form. For the duration of the development of the guidelines, at least 15% of those selected as members of a guideline panel will be free of any conflicts of interest and at least 15% will have no financial or other relationships related to the subject matter under consideration.”*

“Intellectual conflicts (of interest) occur when clinicians or researchers may be too deeply embedded in their own area of expertise to objectively look at a research question ‘with an open mind’ (Laupacis A & Born K, 2012).

2 of the Panel Leaders for 2015 are original guideline authors; as well as 6 of the panelists. Taking in consideration the content of the studies these medical professionals have been producing, it appears that 26.5% of the panel review members have a very deep intellectual conflict of interest.

Take this article for example: 26.5% of the panel review members for 2015 authored and co-authored an article called “A Critical Appraisal of Chronic Lyme Disease.” This article, published in the 2007 *New England Journal of Medicine*, is full of outdated information (see ‘References’ attachment) though the authors still stand by the stance that chronic Lyme disease does not exist. If we consider all of the individuals who have had a say in authoring and reviewing the IDSA guidelines (2000, 2006, and 2008 inclusive), over half of them authored and co-authored this article (13 to 10).

The Office of Research Integrity states: “Intellectual conflicts are more difficult to identify, but are nonetheless important. If a researcher holds strong personal views on the importance of a particular area of research or set of research findings, those views should be disclosed so that others can take them into consideration when judging the researcher’s statements.”

In addition, please take a look at the attached table, particularly the ‘Other Affiliations and Relationships’ column. This column brings to light connections the panel members have with other organizations that are not overtly stated on the Work Plan. It also summarizes the publications each panel member has authored or co-authored with the original Lyme treatment guidelines authors. The academic and research relationships between the members of this panel are extensive.

The Office of Research Integrity also states “Personal conflicts are usually the easiest to identify and resolve. Researchers generally should not serve as reviewers for grants and publications submitted by close colleagues and students. Their presumed interest in seeing their colleagues and students succeed could conflict with their obligation to make judgments based solely on the evidence at hand.”

“Conflicts of interest (competing interests) and bias are ubiquitous. In medicine, they may have the potential to cause harm to patients or obstruct research and new treatments (IOM, 2011).”

Considering the evidence, it is clear that this is happening to the Lyme disease community as a result of the restrictive IDSA Lyme treatment guidelines.



Note: The following information was compiled using public information including searches of Pubmed, each medical professional's employer-sponsored webpage (hosted by the medical practice or academic institution), in one case the LinkedIn website authored by the medical professional himself, and the IDSA's own Project Plan.

This is by no means a complete compilation of the information we feel should be recognized in the selection of the IDSA Lyme Project Plan panel members.

Name	Representing in 2015 review	Other Affiliations and Relationships
Linda Bockenstedt <i>Original author</i>	ACR	<p>ACR- former Board of Directors for the American College of Rheumatology Research &amp; Education Foundation</p> <p><u>Publications of Interest</u>            Cardiology patient pages. Lyme disease and the heart. <b>Krause</b> PJ, Bockenstedt LK.            Borrelia burgdorferi promotes the establishment of Babesia microti in the northeastern United States. Dunn JM, <b>Krause</b> PJ, Davis S, Vannier EG, Fitzpatrick MC, Rollend L, Belperron AA, States SL, Stacey A, Bockenstedt LK, <b>Fish</b> D, Diuk-Wasser MA.            Review: unraveling Lyme disease. Bockenstedt LK, <b>Wormser</b> GP.            Langerhans cell deficiency impairs Ixodes scapularis suppression of Th1 responses in mice. Vesely DL, <b>Fish</b> D, Shlomchik MJ, Kaplan DH, Bockenstedt LK.            Anti-tumor necrosis factor-alpha activation of Borrelia burgdorferi spirochetes in antibiotic-treated murine Lyme borreliosis: an unproven conclusion. <b>Wormser</b> GP, Barthold SW, <b>Shapiro</b> ED, <b>Dattwyler</b> RJ, <b>Bakken</b> JS, <b>Steere</b> AC, Bockenstedt LK, Radolf JD.            MyD88 deficiency enhances acquisition and transmission of Borrelia burgdorferi by Ixodes scapularis ticks. Bockenstedt LK, Liu N, Schwartz I, <b>Fish</b> D.            Detection of attenuated, noninfectious spirochetes in Borrelia burgdorferi-infected mice after antibiotic treatment. Bockenstedt LK, Mao J, Hodzic E, Barthold SW, <b>Fish</b> D.</p>
Yngve Falck-Ytter	GRADE	
Paul M. Lantos <i>Original author</i>	IDSA/ACP	<p>AAP- Fellow of AAP 2010, member since 2000            ACP- Fellow of ACP November 2014, Member since 2002            PIDS- Member since 2004  <a href="https://www.linkedin.com/pub/paul-m-lantos-md-fidsa-faap-facp/93/235/196">https://www.linkedin.com/pub/paul-m-lantos-md-fidsa-faap-facp/93/235/196</a>            John Hopkins University- Attendee</p> <p><u>Publications of Interest</u>            Lantos Paul M., Brinkerhoff R. Jory, <b>Wormser</b> Gary P., and Clemen Robert. Vector-Borne and Zoonotic Diseases. December 2013, 13(12): 877-883.            Lantos, PM; <b>Krause, PJ.</b> Lyme disease coinfections: Anaplasmosis and Babesiosis. In Lyme Borreliosis in Europe and North America  <b>Krause, PJ;</b> Daily, J; Telford, SR; Vannier, E; Lantos, P; Spielman, A. Shared features in the pathobiology of babesiosis and malaria. Trends in Parasitology. 2007;23:605-610. Abstract            Lantos, PM; <b>Krause, PJ.</b> Babesiosis. In Northern American Parasitic Zoonoses. Springer. 151-164.            Lantos, P; <b>Krause, PJ.</b> Ehrlichiosis in children. Seminars in Pediatric Infectious Diseases. 2002;13:249-256. Abstract            Lantos, PM; <b>Krause, PJ.</b> Babesiosis: similar to malaria but different. Pediatric Annals: a journal of continuing pediatric education. 2002;31:192-197. Abstract</p>
Jeffrey A.	AAN	John Hopkins University- Professor

Rumbaugh		NIH funded research
Paul G. Auwaerter <b>Original author</b>	IDSA	<p>ACP Fellow since 2001 John Hopkins University- Associate Professor of Medicine Clinical Director Division of Infectious Diseases Receives paid compensation for legal testimony/consultation in Lyme cases Consult to the FDA, Genentech, Cerexa, Medscape Content Provider, John Hopkins Antibiotics Guide (listed as not related, but all of these activities can shape the treatment of Lyme)</p> <p><u>Publications of Interest</u> Laboratory testing for Lyme neuroborreliosis--reply. Melia MT, <b>Lantos PM</b>, Auwaerter PG. A systematic review of Borrelia burgdorferi morphologic variants does not support a role in chronic Lyme disease. <b>Lantos PM</b>, Auwaerter PG, <b>Wormser GP</b>. Clinical practice guidelines for antimicrobial prophylaxis in surgery. Bratzler DW, Dellinger EP, Olsen KM, Perl TM, Auwaerter PG, Bolon MK, <b>Fish DN</b>, Napolitano LM, Sawyer RG, Slain D, Steinberg JP, Weinstein RA; American Society of Health-System Pharmacists (ASHP); Infectious Diseases Society of America (IDSA); Surgical Infection Society (SIS); Society for Healthcare Epidemiology of America (SHEA). Antiscience and ethical concerns associated with advocacy of Lyme disease. Auwaerter PG, <b>Bakken JS</b>, <b>Dattwyler RJ</b>, <b>Dumler JS</b>, <b>Halperin JJ</b>, McSweegan E, <b>Nadelman RB</b>, O'Connell S, <b>Shapiro ED</b>, Sood SK, <b>Steere AC</b>, Weinstein A, <b>Wormser GP</b>. Scientific evidence and best patient care practices should guide the ethics of Lyme disease activism. Auwaerter PG, <b>Bakken JS</b>, <b>Dattwyler RJ</b>, <b>Dumler JS</b>, <b>Halperin JJ</b>, McSweegan E, <b>Nadelman RB</b>, O'Connell S, Sood SK, Weinstein A, <b>Wormser GP</b>. Two-year evaluation of Borrelia burgdorferi culture and supplemental tests for definitive diagnosis of Lyme disease. Coulter P, Lema C, Flayhart D, Linhardt AS, Aucott JN, Auwaerter PG, <b>Dumler JS</b>. Borrelia burgdorferi ospC heterogeneity among human and murine isolates from a defined region of northern Maryland and southern Pennsylvania: lack of correlation with invasive and noninvasive genotypes. Alghaferi MY, Anderson JM, Park J, Auwaerter PG, Aucott JN, Norris DE, <b>Dumler JS</b> Lyme borreliosis (Lyme disease): molecular and cellular pathobiology and prospects for prevention, diagnosis and treatment. Auwaerter PG, Aucott J, <b>Dumler JS</b>.</p>
Kelly Baldwin	AAN	Geisinger Medical Center-- Employer
Kiran K. Belani	PIDS	Children's Hospitals and Clinics of Minnesota—Employer
William R. Bowie	AMMI-CA	<p>IDSA- Reviewer for IDSA's official journal Receives paid compensation for legal testimony/consultation involving Lyme</p>
Maria E. Agüero-Rosenfeld		<p>No listed affiliation but has worked heavily with IDSA authors. New York University School of Medicine- Employer Receives paid compensation for legal testimony/consultation in Lyme cases</p> <p><u>Publications of Interest</u> Lyme disease: diagnostic issues and controversies. Agüero-Rosenfeld ME, <b>Wormser GP</b>. Expert Rev Mol Diagn. 2015 Jan;15(1):1-4. doi: 10.1586/14737159.2015.989837. Epub 2014 Dec 8. Utility of serodiagnostics designed for use in the United States for detection of Lyme borreliosis acquired in Europe and vice versa. <b>Wormser GP</b>, Tang AT, Schimmoeller NR, Bittker S, Cooper D, Visintainer P, Agüero-Rosenfeld ME, Ogrinc K, <b>Strle F</b>, <b>Stanek G</b>. Med Microbiol Immunol. 2014 Feb;203(1):65-71 Differences and similarities between culture-confirmed human granulocytic anaplasmosis</p>

	<p>and early lyme disease. <b>Wormser</b> GP, Aguero-Rosenfeld ME, Cox ME, Nowakowski J, <b>Nadelman</b> RB, Holmgren D, McKenna D, Bittker S, <b>Zentmaier</b> L, Cooper D, Liveris D, Schwartz I, Horowitz HW.</p> <p>Single-tier testing with the C6 peptide ELISA kit compared with two-tier testing for Lyme disease. <b>Wormser</b> GP, Schriefer M, Aguero-Rosenfeld ME, Levin A, <b>Steere</b> AC, <b>Nadelman</b> RB, Nowakowski J, Marques A, Johnson BJ, <b>Dumler</b> JS.</p> <p>Lyme disease and human granulocytic anaplasmosis coinfection: impact of case definition on coinfection rates and illness severity. Horowitz HW, Aguero-Rosenfeld ME, Holmgren D, McKenna D, Schwartz I, Cox ME, <b>Wormser</b> GP.</p> <p>Clin Infect Dis. 2013 Jan;56(1):93-9.</p> <p>Vertical transmission of Babesia microti, United States. Joseph JT, Purtil K, Wong SJ, Munoz J, Teal A, Madison-Antenucci S, Horowitz HW, Aguero-Rosenfeld ME, Moore JM, Abramowsky C, <b>Wormser</b> GP.</p> <p>2-tiered antibody testing for early and late Lyme disease using only an immunoglobulin G blot with the addition of a VlsE band as the second-tier test. <b>Branda</b> JA, Aguero-Rosenfeld ME, Ferraro MJ, Johnson BJ, <b>Wormser</b> GP, <b>Steere</b> AC.</p> <p>Impact of clinical variables on Borrelia burgdorferi-specific antibody seropositivity in acute-phase sera from patients in North America with culture-confirmed early Lyme disease. <b>Wormser</b> GP, Nowakowski J, <b>Nadelman</b> RB, Visintainer P, Levin A, Aguero-Rosenfeld ME.</p> <p>Dissociation between inhibition and killing by levofloxacin in human granulocytic anaplasmosis. <b>Wormser</b> GP, Filozov A, Telford SR 3rd, Utpat S, Kamer RS, Liveris D, Wang G, Zentmaier L, Schwartz I, Aguero-Rosenfeld ME.</p> <p>Borrelia burgdorferi BmpA, BmpB, and BmpD proteins are expressed in human infection and contribute to P39 immunoblot reactivity in patients with Lyme disease. Bryksin AV, Godfrey HP, Carbonaro CA, <b>Wormser</b> GP, Aguero-Rosenfeld ME, Cabello FC.</p> <p>Borrelia burgdorferi BmpA, BmpB, and BmpD proteins are expressed in human infection and contribute to P39 immunoblot reactivity in patients with Lyme disease. Bryksin AV, Godfrey HP, Carbonaro CA, <b>Wormser</b> GP, Aguero-Rosenfeld ME, Cabello FC.</p> <p>Diagnosis of lyme borreliosis. Aguero-Rosenfeld ME, Wang G, Schwartz I, <b>Wormser</b> GP.</p> <p>Analysis of sequences and loci of p44 homologs expressed by Anaplasma phagocytophila in acutely infected patients. Lin Q, Zhi N, Ohashi N, Horowitz HW, Aguero-Rosenfeld ME, Raffalli J, <b>Wormser</b> GP, Rikihisa Y.</p> <p>Seroprevalence of antibodies that react with Anaplasma phagocytophila, the agent of human granulocytic ehrlichiosis, in different populations in Westchester County, New York. Aguero-Rosenfeld ME, Donnarumma L, <b>Zentmaier</b> L, Jacob J, Frey M, Noto R, Carbonaro CA, <b>Wormser</b> GP.</p>
<p>John A. Branda</p>	<p>Harvard</p> <p>No listed affiliation but has worked with IDSA authors.</p> <p>Patent holder at Partners Healthcaare</p> <p><u>Publications of Interest</u></p> <p>Comparative cost-effectiveness of two-tiered testing strategies for serodiagnosis of lyme disease with noncutaneous manifestations. <b>Wormser</b> GP, Levin A, Soman S, Adenikinju O, Longo MV, Branda JA.</p> <p>Performance of United States serologic assays in the diagnosis of Lyme borreliosis acquired in Europe. Branda JA, <b>Strle</b> F, Strle K, Sikand N, Ferraro MJ, <b>Steere</b> AC.</p> <p>Two-tiered antibody testing for Lyme disease with use of 2 enzyme immunoassays, a whole-cell sonicate enzyme immunoassay followed by a VlsE C6 peptide enzyme immunoassay. Branda JA, Linskey K, Kim YA, <b>Steere</b> AC, Ferraro MJ.</p> <p>2-tiered antibody testing for early and late Lyme disease using only an immunoglobulin G blot with the addition of a VlsE band as the second-tier test. Branda JA, <b>Aguero-Rosenfeld</b> ME, Ferraro MJ, Johnson BJ, <b>Wormser</b> GP, <b>Steere</b> AC.</p>

David B. Clifford	AAN	<p>IDSA- Reviewer for IDSA's official journal  Advisory for Biogen, FDA, Amgen-Adjudication, Pfizer, Takeda/Millennium  Adjudication, Genentech, Genzyme, GSK, PML Adjudication, Merck, Inhibikas, J&amp;J stock (spouse)—All listed as unrelated but all could cause a conflict of interest and influence the way the guidelines are handled for personal or professional interests.</p>
Francis J. DiMario Jr.	AAN/CNS	
Charles Ericsson	IDSA	
John J. Halperin <i>Original author</i>	AAN	<p>ALDF- Board  Yale—employer  Authored Lyme guidelines for AAN.  Practice Parameter: Treatment of nervous system Lyme disease (an evidence-based review). Report of the Quality Standards Subcommittee of the American Academy of Neurology. Halperin, Shapiro, Logigian, Belman, Dotevall, Wormser, Krupp, Gronseth, Bever Jr. July 2007. Current guideline. Reaffirmed on April 30, 2014. Endorsed by the Infectious Disease Society of America. <a href="http://www.neurology.org/content/69/1/91.full">http://www.neurology.org/content/69/1/91.full</a>. Cannot find any other articles that they participated in in 2007 from the Quality Standards Subcommittee of AAN—why were they selected only to author for this guideline?  Holds stock in Abbott Labs, Abbvie, Merck, J&amp;J, All listed as unrelated but all could cause a conflict of interest and influence the way the guidelines are handled for personal or professional interests.  Receives money for expert testimony in Lyme disease cases.</p> <p><u>Publications of Interest</u>  The reply. <b>Klempner MS</b>, Baker PJ, <b>Shapiro ED</b>, Marques A, <b>Dattwyler RJ</b>, Halperin JJ, <b>Wormser GP</b>.  The reply. Halperin JJ, Baker PJ, <b>Wormser GP</b>.  Toward a better understanding of European Lyme neuroborreliosis. <b>Wormser GP</b>, Halperin JJ.  Common misconceptions about Lyme disease. Halperin JJ, Baker P, <b>Wormser GP</b>.  Antiscience and ethical concerns associated with advocacy of Lyme disease. <b>Auwaerter PG</b>, <b>Bakken JS</b>, <b>Dattwyler RJ</b>, <b>Dumler JS</b>, Halperin JJ, McSweegan E, <b>Nadelman RB</b>, O'Connell S, <b>Shapiro ED</b>, Sood SK, <b>Steere AC</b>, Weinstein A, <b>Wormser GP</b>.  Scientific evidence and best patient care practices should guide the ethics of Lyme disease activism. <b>Auwaerter PG</b>, <b>Bakken JS</b>, <b>Dattwyler RJ</b>, <b>Dumler JS</b>, Halperin JJ, McSweegan E, <b>Nadelman RB</b>, O'Connell S, Sood SK, Weinstein A, <b>Wormser GP</b>.  Oral doxycycline for neuroborreliosis. <b>Wormser GP</b>, Halperin JJ.</p>
Peter J. Krause <i>Original author</i>	IDSA	<p>ALDF- Board  Yale—Professor</p> <p><u>Publications of Interest</u>  Borrelia miyamotoi infection in Nature and in humans. Krause PJ, <b>Fish D</b>, Narasimhan S, Barbour AG.  Borrelia burgdorferi promotes the establishment of Babesia microti in the northeastern United States. Dunn JM, Krause PJ, Davis S, Vannier EG, Fitzpatrick MC, Rollend L, Belperron AA, States SL, Stacey A, Bockenstedt LK, <b>Fish D</b>, Diuk-Wasser MA.  Blood transfusion transmission of the tick-borne relapsing fever spirochete Borrelia miyamotoi in mice. Krause PJ, Hendrickson JE, Steeves TK, <b>Fish D</b>.  Determination of Babesia microti seroprevalence in blood donor populations using an</p>

		<p>investigational enzyme immunoassay. Levin AE, Williamson PC, Erwin JL, Cyrus S, Bloch EM, Shaz BH, Kessler D, Telford SR 3rd, Krause PJ, <b>Wormser</b> GP, Ni X, Wang H, Krueger NX, Caglioti S, Busch MP.</p> <p><i>Borrelia miyamotoi</i> sensu lato seroreactivity and seroprevalence in the northeastern United States. Krause PJ, Narasimhan S, <b>Wormser</b> GP, Barbour AG, Platonov AE, Brancato J, Lepore T, Dardick K, Mamula M, Rollend L, Steeves TK, Diuk-Wasser M, Usmani-Brown S, Williamson P, Sarkisyan DS, Fikrig E, <b>Fish D</b>; Tick Borne Diseases Group.</p> <p>Quantitative PCR for detection of <i>Babesia microti</i> in <i>Ixodes scapularis</i> ticks and in human blood. Rollend L, Bent SJ, Krause PJ, Usmani-Brown S, Steeves TK, States SL, Lepore T, Ryan R, Dias F, Ben Mamoun C, <b>Fish D</b>, Diuk-Wasser MA.</p> <p>Neurological manifestations of human babesiosis. Usmani-Brown S, <b>Halperin</b> JJ, Krause PJ.</p> <p>Cardiology patient pages. Lyme disease and the heart. Krause PJ, <b>Bockenstedt</b> LK.</p> <p>Human <i>Borrelia miyamotoi</i> infection in the United States. Krause PJ, Narasimhan S, <b>Wormser</b> GP, Rollend L, Fikrig E, Lepore T, Barbour A, <b>Fish D</b>.</p> <p>Humans infected with relapsing fever spirochete <i>Borrelia miyamotoi</i>, Russia. Platonov AE, Karan LS, Kolyasnikova NM, Makhneva NA, Toporkova MG, Maleev VV, <b>Fish D</b>, Krause PJ.</p> <p>One Health approach to identify research needs in bovine and human babesioses: workshop report. Pérez de León AA, Strickman DA, Knowles DP, <b>Fish D</b>, Thacker E, de la Fuente J, Krause PJ, Wikel SK, Miller RS, Wagner GG, Almazán C, Hillman R, Messenger MT, Ugstad PO, Duhaime RA, Teel PD, Ortega-Santos A, Hewitt DG, Bowers EJ, Bent SJ, Cochran MH, McElwain TF, Scoles GA, Suarez CE, Davey R, Howell Freeman JM, Lohmeyer K, Li AY, Guerrero FD, Kammlah DM, Phillips P, Pound JM; Group for Emerging Babesioses and One Health Research and Development in the U.S.</p> <p>Emergence of resistance to azithromycin-atovaquone in immunocompromised patients with <i>Babesia microti</i> infection. <b>Wormser</b> GP, Prasad A, Neuhaus E, Joshi S, Nowakowski J, Nelson J, Mittleman A, Agüero-Rosenfeld M, Topal J, Krause PJ.</p> <p>Nosocomial transmission of human granulocytic anaplasmosis? Krause PJ, <b>Wormser</b> GP.</p> <p>Persistent and relapsing babesiosis in immunocompromised patients. Krause PJ, Gewurz BE, Hill D, Marty FM, Vannier E, Foppa IM, Furman RR, Neuhaus E, Skowron G, Gupta S, McCalla C, Pesanti EL, Young M, Heiman D, Hsue G, Gelfand JA, <b>Wormser</b> GP, Dickason J, Bia FJ, Hartman B, Telford SR 3rd, Christianson D, Dardick K, Coleman M, Giroto JE, Spielman A.</p> <p>Shared features in the pathobiology of babesiosis and malaria. Krause PJ, Daily J, Telford SR, Vannier E, <b>Lantos</b> P, Spielman A.</p> <p>Successful treatment of human granulocytic ehrlichiosis in children using rifampin. Krause PJ, Corrow CL, <b>Bakken</b> JS.</p> <p>Ehrlichiosis in children. <b>Lantos</b> P, Krause PJ.</p> <p>Babesiosis: similar to malaria but different. <b>Lantos</b> PM, Krause PJ.</p>
Matthew H. Liang	ACR	Stock in Squenom and J&J, advisory panel for FDA-- All listed as unrelated but all could cause a conflict of interest and influence the way the guidelines are handled for personal or professional interests.
H. Cody Meissner	AAP-COID	
Lise E. Nigrovic	AAP-EM	
James J. Nocton	ACR	<p>Listed as ACR, has worked with IDSA authors and associated with AAP.</p> <p>AAP- Fellow</p> <p><u>Publications of Interest</u></p> <p>Detection of <i>Borrelia burgdorferi</i> DNA by polymerase chain reaction in cerebrospinal fluid in Lyme neuroborreliosis.</p> <p>Nocton JJ, Bloom BJ, Rutledge BJ, Persing DH, Logigian EL, Schmid CH, <b>Steere AC</b>.</p> <p>Detection of <i>Borrelia burgdorferi</i> DNA by polymerase chain reaction in synovial fluid from</p>

		patients with Lyme arthritis. Nocton JJ, Dressler F, Rutledge BJ, Rys PN, Persing DH, <b>Steere AC</b> .
Amy A. Pruitt	AAN	
Jane Glazer Rips	Consumer Rep.	
Lynda E. Rosenfeld		
Margot Savoy	AAFP	
Sunil K. Sood	IDSA	AAP- Fellow  <u>Publications of Interest</u> Antiscience and ethical concerns associated with advocacy of Lyme disease. <b>Auwaerter PG</b> , Bakken JS, <b>Dattwyler RJ</b> , <b>Dumler JS</b> , <b>Halperin JJ</b> , McSweegan E, <b>Nadelman RB</b> , O'Connell S, Shapiro ED, Sood SK, <b>Steere AC</b> , Weinstein A, <b>Wormser GP</b> Scientific evidence and best patient care practices should guide the ethics of Lyme disease activism. <b>Auwaerter PG</b> , Bakken JS, <b>Dattwyler RJ</b> , <b>Dumler JS</b> , <b>Halperin JJ</b> , McSweegan E, <b>Nadelman RB</b> , O'Connell S, Sood SK, Weinstein A, <b>Wormser GP</b> .
Allen Steere <i>Original author</i>	ACR	IDSA Guideline author, has also worked with AAN, ACR and on the ALDF board AAN- Has published articles for AAN <a href="http://www.neurology.org/content/42/2/303">http://www.neurology.org/content/42/2/303</a> ACR- President of the ACR has worked with Steere: <a href="http://jid.oxfordjournals.org/content/183/3/453.full">http://jid.oxfordjournals.org/content/183/3/453.full</a> ACR- Steere has won awards from them <a href="https://www.rheumatology.org/about/newsroom/2009/2009_am_34.asp">https://www.rheumatology.org/about/newsroom/2009/2009_am_34.asp</a> and published research they promote in their journals <a href="https://www.rheumatology.org/about/newsroom/2011/2011_01_17.asp">https://www.rheumatology.org/about/newsroom/2011/2011_01_17.asp</a> ALDF- Board Advisory/Consult for Baxter, Institute of Systems Biology, Immunetics, All listed as unrelated but all could cause a conflict of interest and influence the way the guidelines are handled for personal or professional interests. Participant in the Dearborn conference that set erroneous guidelines for diagnosis to facilitate the creation of the Lymerix vaccine.  <u>Publications of Interest</u> Reply to Seligman et Al. Strle K, Stupica D, Drouin EE, Steere AC, <b>Strle F</b> . Reply to Parvu and Parvu. Strle K, Stupica D, Drouin EE, Steere AC, <b>Strle F</b> . Elevated levels of IL-23 in a subset of patients with post-lyme disease symptoms following erythema migrans. Strle K, Stupica D, Drouin EE, Steere AC, <b>Strle F</b> . Tick-specific borrelial antigens appear to be upregulated in American but not European patients with Lyme arthritis, a late manifestation of Lyme borreliosis. Li X, Strle K, Wang P, Acosta DI, McHugh GA, Sikand N, <b>Strle F</b> , Steere AC. Performance of United States serologic assays in the diagnosis of Lyme borreliosis acquired in Europe. Branda JA, <b>Strle F</b> , Strle K, Sikand N, Ferraro MJ, Steere AC. Single-tier testing with the C6 peptide ELISA kit compared with two-tier testing for Lyme disease. <b>Wormser GP</b> , Schriefer M, <b>Aguero-Rosenfeld ME</b> , Levin A, Steere AC, <b>Nadelman RB</b> , Nowakowski J, Marques A, Johnson BJ, <b>Dumler JS</b> . Antiscience and ethical concerns associated with advocacy of Lyme disease. <b>Auwaerter PG</b> , <b>Bakken JS</b> , <b>Dattwyler RJ</b> , <b>Dumler JS</b> , <b>Halperin JJ</b> , McSweegan E, <b>Nadelman RB</b> , O'Connell S, <b>Shapiro ED</b> , <b>Sood SK</b> , Steere AC, Weinstein A, <b>Wormser GP</b> . 2-tiered antibody testing for early and late Lyme disease using only an immunoglobulin G

		<p>blot with the addition of a VlsE band as the second-tier test. <b>Branda JA, Agüero-Rosenfeld ME, Ferraro MJ, Johnson BJ, Wormser GP, Steere AC</b></p> <p><i>Borrelia burgdorferi</i> stimulates macrophages to secrete higher levels of cytokines and chemokines than <i>Borrelia afzelii</i> or <i>Borrelia garinii</i>. <b>Strle K, Drouin EE, Shen S, El Khoury J, McHugh G, Ruzic-Sabljić E, Strle F, Steere AC</b></p> <p>Anti-tumor necrosis factor-<math>\alpha</math> activation of <i>Borrelia burgdorferi</i> spirochetes in antibiotic-treated murine Lyme borreliosis: an unproven conclusion. <b>Wormser GP, Barthold SW, Shapiro ED, Dattwyler RJ, Bakken JS, Steere AC, Bockenstedt LK, Radolf JD.</b></p> <p>A critical appraisal of "chronic Lyme disease". Feder HM Jr, Johnson BJ, O'Connell S, <b>Shapiro ED, Steere AC, Wormser GP</b>; Ad Hoc International Lyme Disease Group, Agger WA, Artsob H, <b>Auwaerter P, Dumler JS, Bakken JS, Bockenstedt LK, Green J, Dattwyler RJ, Munoz J, Nadelman RB, Schwartz I, Draper T, McSwegan E, Halperin JJ, Klempner MS, Krause PJ, Mead P, Morshed M, Porwancher R, Radolf JD, Smith RP Jr, Sood S, Weinstein A, Wong SJ, Zemel L.</b></p> <p>Serodiagnosis of Lyme disease by kinetic enzyme-linked immunosorbent assay using recombinant VlsE1 or peptide antigens of <i>Borrelia burgdorferi</i> compared with 2-tiered testing using whole-cell lysates. <b>Bacon RM, Biggerstaff BJ, Schriefer ME, Gilmore RD Jr, Philipp MT, Steere AC, Wormser GP, Marques AR, Johnson BJ.</b></p>
Frac Strle <i>Original author</i>	ESCMID	<p><u>Publications of Interest</u></p> <p>Utility of serodiagnostics designed for use in the United States for detection of Lyme borreliosis acquired in Europe and vice versa. <b>Wormser GP, Tang AT, Schimmoeller NR, Bittker S, Cooper D, Visintainer P, Agüero-Rosenfeld ME, Ogrinc K, Strle F, Stanek G.</b> <i>Med Microbiol Immunol.</i> 2014 Feb;203(1):65-71</p> <p>Performance of United States serologic assays in the diagnosis of Lyme borreliosis acquired in Europe. <b>Branda JA, Strle F, Strle K, Sikand N, Ferraro MJ, Steere AC.</b></p> <p>Reply to Seligman et Al. <b>Strle K, Stupica D, Drouin EE, Steere AC, Strle F.</b></p> <p>Reply to Parvu and Parvu. <b>Strle K, Stupica D, Drouin EE, Steere AC, Strle F.</b></p> <p>Elevated levels of IL-23 in a subset of patients with post-lyme disease symptoms following erythema migrans. <b>Strle K, Stupica D, Drouin EE, Steere AC, Strle F.</b></p> <p>Tick-specific borrelial antigens appear to be upregulated in American but not European patients with Lyme arthritis, a late manifestation of Lyme borreliosis. <b>Li X, Strle K, Wang P, Acosta DI, McHugh GA, Sikand N, Strle F, Steere AC.</b></p> <p>Performance of United States serologic assays in the diagnosis of Lyme borreliosis acquired in Europe. <b>Branda JA, Strle F, Strle K, Sikand N, Ferraro MJ, Steere AC.</b></p> <p><i>Borrelia burgdorferi</i> stimulates macrophages to secrete higher levels of cytokines and chemokines than <i>Borrelia afzelii</i> or <i>Borrelia garinii</i>. <b>Strle K, Drouin EE, Shen S, El Khoury J, McHugh G, Ruzic-Sabljić E, Strle F, Steere AC</b></p> <p>Gender disparity between cutaneous and non-cutaneous manifestations of Lyme borreliosis. <b>Strle F, Wormser GP, Mead P, Dhaduvai K, Longo MV, Adenikinju O, Soman S, Tefera Y, Maraspin V, Lotrić-Furlan S, Ogrinc K, Cimperman J, Ružić-Sabljić E, Stupica D.</b></p> <p>The amber theory of Lyme arthritis: initial description and clinical implications. <b>Wormser GP, Nadelman RB, Schwartz I.</b></p> <p>Lyme borreliosis. <b>Stanek G, Wormser GP, Gray J, Strle F.</b></p> <p>Comparison of erythema migrans caused by <i>Borrelia burgdorferi</i> and <i>Borrelia garinii</i>. <b>Strle F, Ružić-Sabljić E, Logar M, Maraspin V, Lotrić-Furlan S, Cimperman J, Ogrinc K, Stupica D, Nadelman RB, Nowakowski J, Wormser GP.</b></p> <p>Subjective symptoms after treatment of early Lyme disease. <b>Cerar D, Cerar T, Ruzić-Sabljić E, Wormser GP, Strle F.</b></p> <p>Advances in the treatment and prevention of Lyme borreliosis. <b>Wormser GP, Stanek G, Strle F, Gray JS.</b></p>
Robert Sundle	ACR	

Jean Tsao	ESA	<p>Listed as ESA but has worked heavily with IDSA authors.</p> <p><u>Publications of Interest</u>  Niche partitioning of <i>Borrelia burgdorferi</i> and <i>Borrelia miyamotoi</i> in the same tick vector and mammalian reservoir species.  Barbour AG, Bunikis J, Travinsky B, Hoen AG, Diuk-Wasser MA, <b>Fish D</b>, Tsao JI.  Climate and tick seasonality are predictors of <i>Borrelia burgdorferi</i> genotype distribution. Gatewood AG, Liebman KA, Vourc'h G, Bunikis J, Hamer SA, Cortinas R, Melton F, Cislo P, Kitron U, Tsao J, Barbour AG, <b>Fish D</b>, Diuk-Wasser MA.  An ecological approach to preventing human infection: vaccinating wild mouse reservoirs intervenes in the Lyme disease cycle. Tsao JI, Wootton JT, Bunikis J, Luna MG, <b>Fish D</b>, Barbour AG.  Sequence typing reveals extensive strain diversity of the Lyme borreliosis agents <i>Borrelia burgdorferi</i> in North America and <i>Borrelia afzelii</i> in Europe. Bunikis J, Garpmo U, Tsao J, Berglund J, <b>Fish D</b>, Barbour AG.  <i>Borrelia burgdorferi</i> infection in a natural population of <i>Peromyscus leucopus</i> mice: a longitudinal study in an area where Lyme borreliosis is highly endemic. Bunikis J, Tsao J, Luke CJ, Luna MG, <b>Fish D</b>, Barbour AG.</p>
Gary Wormser <i>Original author</i>	IDSA	<p>ALDF- Board  Advisory/Consult on legal trials regarding Lyme, and for Baxter. Listed as unrelated but could cause a conflict of interest and influence the way the guidelines are handled for personal or professional interests.  Participant in the Dearborn conference that set erroneous guidelines for diagnosis to facilitate the creation of the Lymerix vaccine.</p> <p><u>Publications of Interest</u>  Lyme disease: diagnostic issues and controversies. <b>Aguero-Rosenfeld ME</b>, Wormser GP.  Long-Term Assessment of Fibromyalgia in Patients with Culture-Confirmed Lyme Disease. Wormser GP, Weitzner E, McKenna D, <b>Nadelman RB</b>, Scavarda C, Farber S, Prakash P, Ash J, Nowakowski J.  Long-term assessment of fatigue in patients with culture-confirmed Lyme disease. Wormser GP, Weitzner E, McKenna D, <b>Nadelman RB</b>, Scavarda C, Nowakowski J.  Determination of <i>Babesia microti</i> seroprevalence in blood donor populations using an investigational enzyme immunoassay. Levin AE, Williamson PC, Erwin JL, Cyrus S, Bloch EM, Shaz BH, Kessler D, Telford SR 3rd, <b>Krause PJ</b>, Wormser GP, Ni X, Wang H, Krueger NX, Caglioti S, Busch MP.  Review: unraveling Lyme disease. <b>Bockenstedt LK</b>, Wormser GP.  <i>Borrelia miyamotoi</i> sensu lato seroreactivity and seroprevalence in the northeastern United States. <b>Krause PJ</b>, Narasimhan S, Wormser GP, Barbour AG, Platonov AE, Brancato J, Lepore T, Dardick K, Mamula M, Rollend L, Steeves TK, Diuk-Wasser M, Usmani-Brown S, Williamson P, Sarkisyan DS, Fikrig E, <b>Fish D</b>; Tick Borne Diseases Group.  Chronic coinfections in patients diagnosed with chronic Lyme disease: a systematic review. <b>Lantos PM</b>, Wormser GP.  The reply. <b>Klempner MS</b>, Baker PJ, <b>Shapiro ED</b>, Marques A, <b>Dattwyler RJ</b>, <b>Halperin JJ</b>, Wormser GP.  Evidence for strain-specific immunity in patients treated for early Lyme disease. Khatchikian CE, <b>Nadelman RB</b>, Nowakowski J, Schwartz I, Wormser GP, Brisson D.  A systematic review of <i>Borrelia burgdorferi</i> morphologic variants does not support a role in chronic Lyme disease. <b>Lantos PM</b>, <b>Auwaerter PG</b>, Wormser GP.  Utility of serodiagnostics designed for use in the United States for detection of Lyme borreliosis acquired in Europe and vice versa. Wormser GP, Tang AT, Schimmoeller NR, Bittker S, Cooper D, Visintainer P, <b>Aguero-Rosenfeld ME</b>, Ogrinc K, <b>Strle F</b>, <b>Stanek G</b>.</p>



Empiric antibiotic treatment of erythema migrans-like skin lesions as a function of geography: a clinical and cost effectiveness modeling study. **Lantos PM**, Brinkerhoff RJ, Wormser GP, Clemen R.

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Lawrence Zemel	ACR	<p>Listed as ACR but has worked with members of the IDSA.</p> <p><u>Publications of Interest</u>  A critical appraisal of "chronic Lyme disease".Feder HM Jr, Johnson BJ, O'Connell S, <b>Shapiro ED, Steere AC, Wormser GP</b>; Ad Hoc International Lyme Disease Group, Agger WA, Artsob H, <b>Auwaerter P, Dumler JS, Bakken JS, Bockenstedt LK</b>, Green J, <b>Dattwyler RJ</b>, Munoz J, <b>Nadelman RB</b>, Schwartz I, Draper T, McSweegan E, <b>Halperin JJ, Klempner MS, Krause PJ</b>, Mead P, Morshed M, Porwancher R, Radolf JD, Smith RP Jr, <b>Sood S</b>, Weinstein A, Wong SJ, Zemel L.</p>
Timothy Beukelman	ACR	
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