

The Politics of Lyme Disease



Photo source: <http://www.lymeaustralia.com/emily.html>

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GOALS

1. Provide a brief overview of Lyme disease and standard treatment practices.
2. Discuss “Chronic Lyme Disease”.
3. Tell the story of IDSA’s Lyme treatment guidelines and the response of Lyme advocacy groups.
4. Briefly review similar syndromes in past eras.

Borriela burgdorferi -- cause of Lyme disease

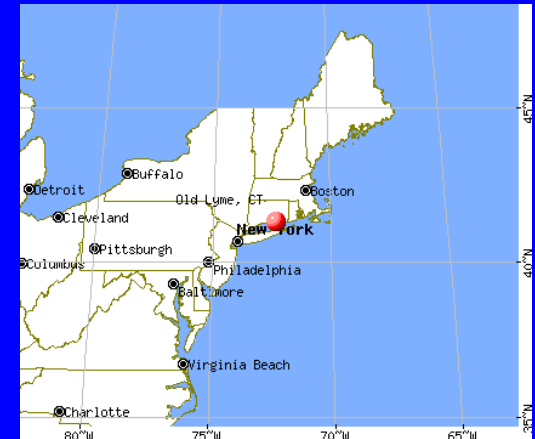
Recognized in 1975

Outbreak of juvenile rheumatoid arthritis cases among schoolchildren in Old Lyme, Connecticut and two neighboring towns.

All the children had played in the woods and been exposed to ticks.

Arthritis was preceded by an unusual target-like rash.

Investigation led to discovery of *Borriela burgdorferi*



Bacteria Isolated

Lyme Disease Cause Thought To Be Found

By Elizabeth Mae Alphas
LYME/OLD LYME — After seven years of research by Connecticut scientists, a Montana researcher believes he has identified the organism that causes Lyme disease. The discovery may result in a cure for the arthritis-like disease which has been plaguing local residents for years.

Old Lyme Health Director Frank Kraus called the breakthrough "the first bright spot for people suffering from this disease." He explained that "great work has been done by all concerned," and added that, "there originally was no knowledge of

the disease, and all research has had to be done from scratch.

Dr. William Burgdorfer of the Rocky Mountain Laboratory in Montana found a type of spirochete, a bacteria shaped like corks, in the gut of the *Ixodes dammini* tick. This tick, no bigger than a pin dot, has long been termed the carrier of Lyme disease, but scientists have been unable to conclusively isolate the virus or organism transmitted by the tick.

Marge Noyes, Director of Public Information for the School of Medicine at Yale University, said that over the past years several

laboratories have isolated organisms which could be the causative agent of the disease, but none have been proven. Doctors at Yale have been working with victims of Lyme disease since the mid-1930's, when the ailment was first discovered among residents of Lyme and surrounding towns.

Noyes said that spirochetes have also been isolated in the tick before, but not the particular organism Burgdorfer found. The Yale scientists plan to continue their research into the disease, and over the summer they will try to isolate, in victims of the

(Continued on page 14)



Bee & Thistle To Be Sold;

Overview of Lyme Disease

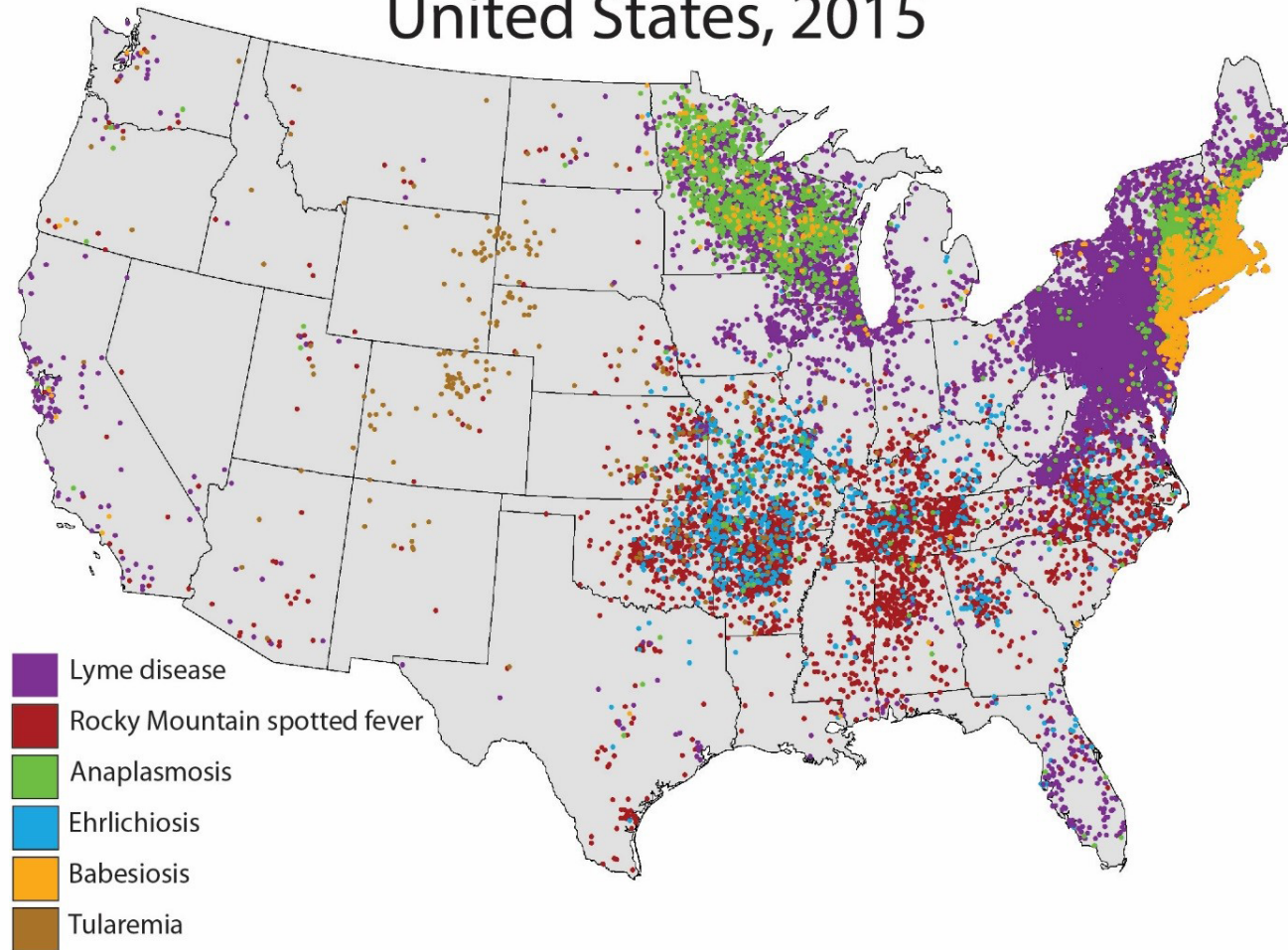
Most common tick borne infection in the U.S. and Europe

In North America is caused by the bacteria, *Borrelia burgdorferi*

It is transmitted by the bite of the tick species *Ixodes scapularis* and *Ixodes pacificus*.



Distribution of Key Tickborne Diseases, United States, 2015

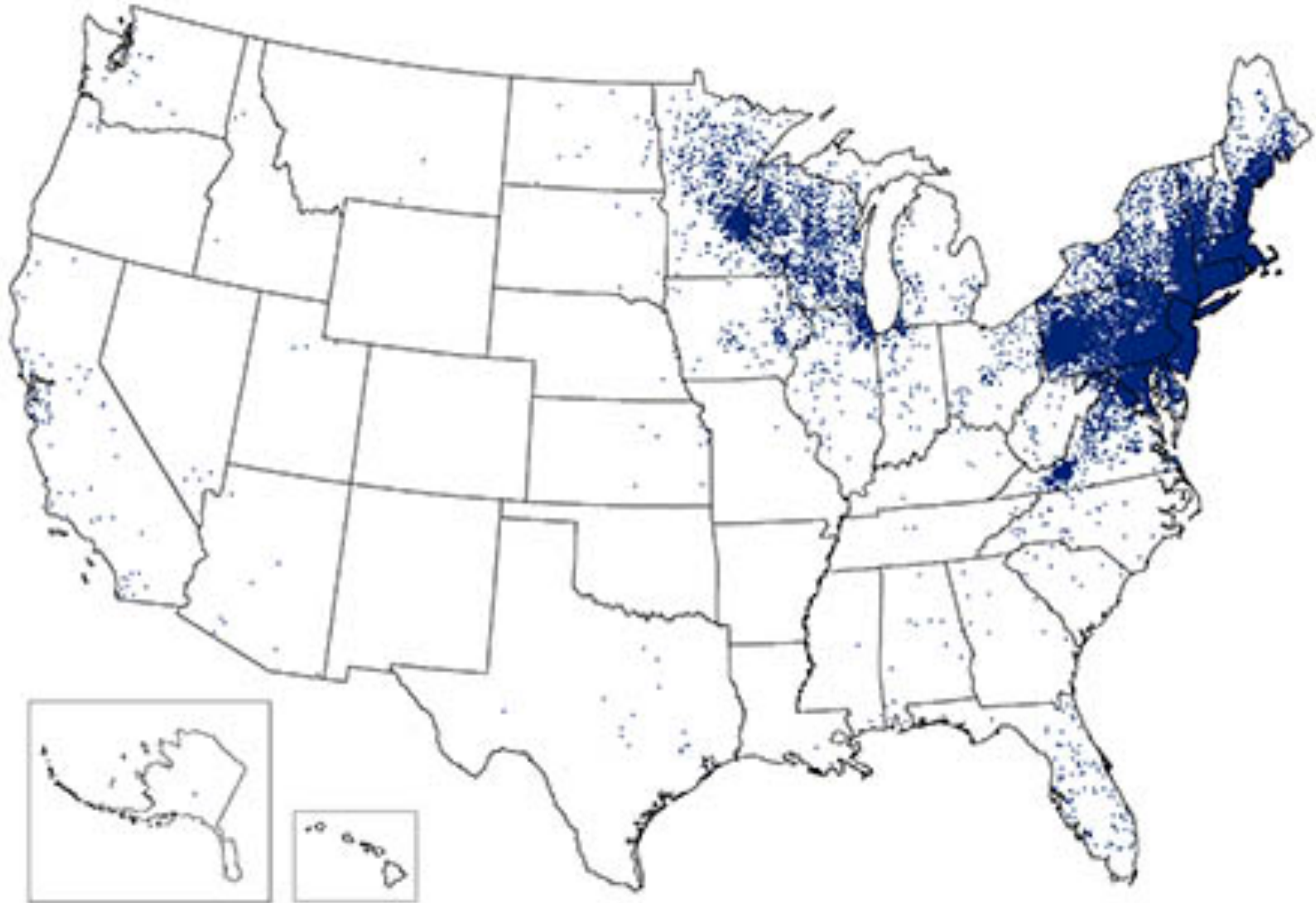


NOTE: Each dot represents one case. Cases are reported from the infected person's county of residence, not necessarily the place where they were infected.

NOTE: During 2015, babesiosis was reportable in AL, AR, CA, CT, DE, IL, IN, LA, KY, ME, MD, MA, MI, MN, MT, NE, NH, NJ, NY, ND, OH, OR, RI, SC, SD, TN, TX, UT, VT, WA, WV, WI, and WY.

NOTE: In 2015, no cases of tickborne illness were reported from Hawaii. In 2015, Alaska reported 1 travel-related cases of Lyme disease and 2 cases of tularemia.

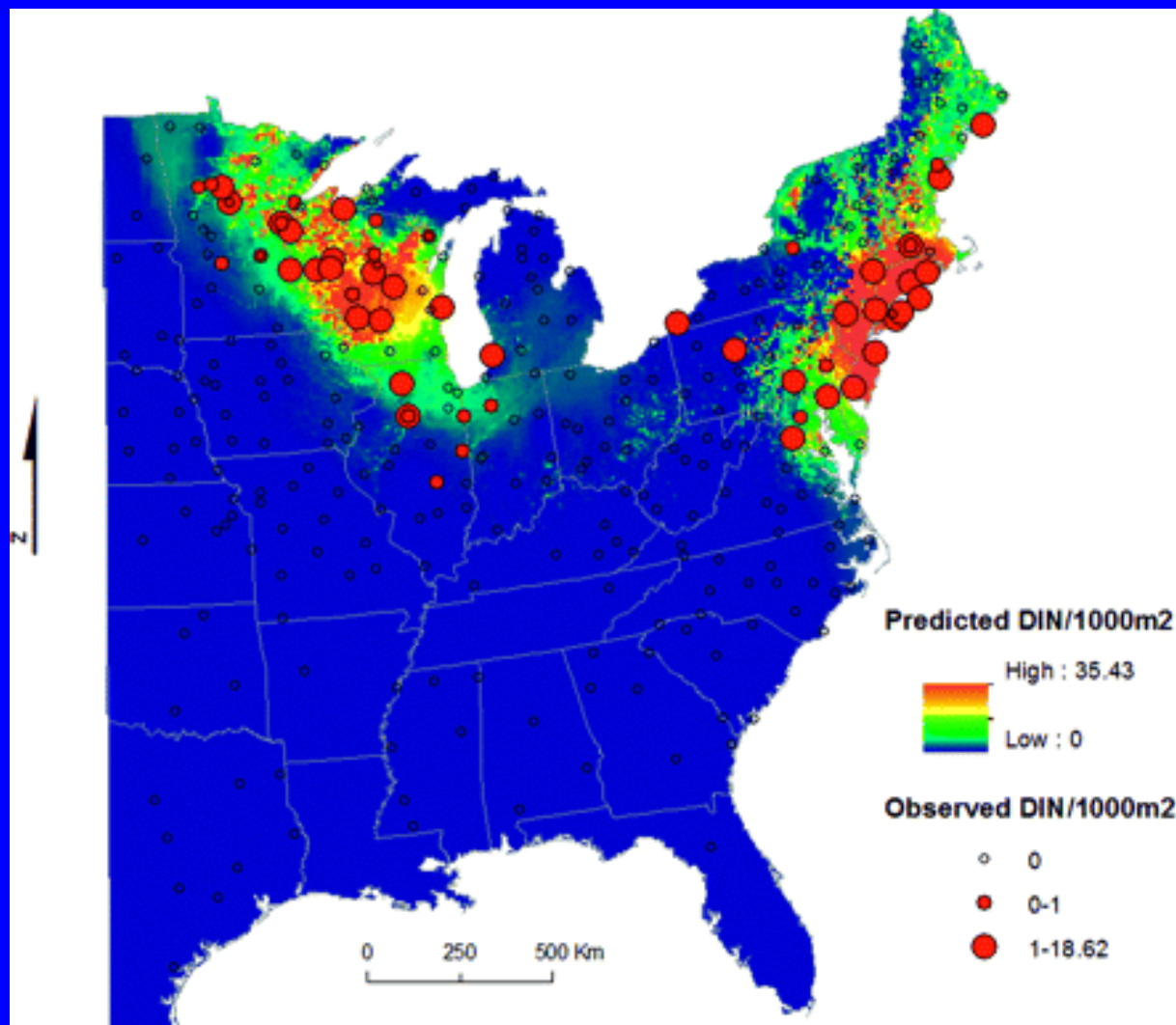
Reported Cases of Lyme Disease -- United States, 2015



1 dot placed randomly within county of residence for each confirmed case

Source: CDC.gov

Predicted and observed density of infected host-seeking *Ixodes scapularis* nymphs (DIN)/1,000 m²



Maria A. Diuk-Wasser, et al. Am J Trop Med Hyg 2012 86:320-32

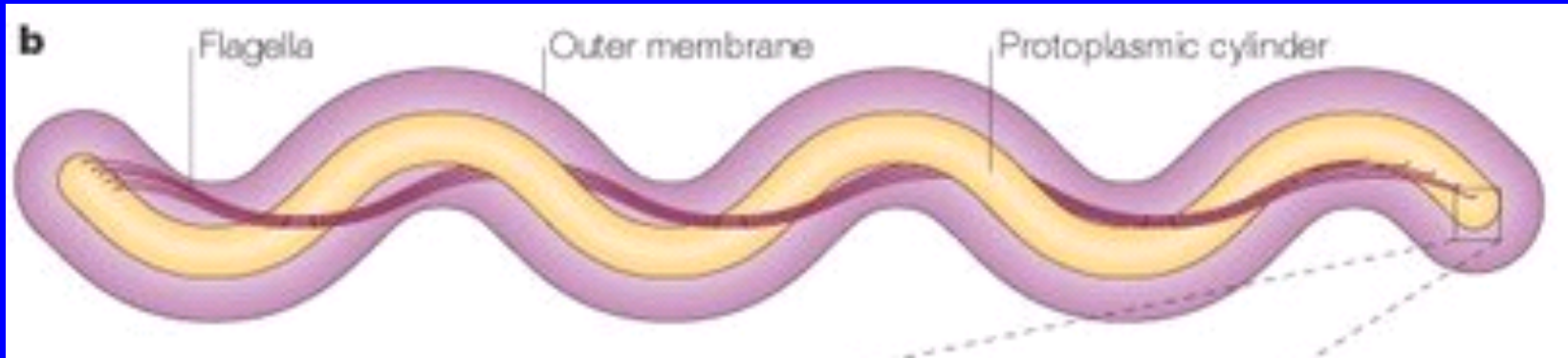
Selected Tick Vectors



Transmit pathogens that cause the following diseases:

- Lyme disease
 - Anaplasmosis
 - Babesiosis
 - Powassan virus disease
 - Borrelia miyamotoi* disease
-
- Ehrlichiosis
 - STARI
 - Tularemia
-
- Rocky Mtn. Spotted Fever
 - Tularemia

Borriela burgdorferi – structure and microbiology



A protoplasmic cylinder

Surrounded by periplasm that contains a flagella

unusual because it stays within the periplasm
flattens out the spiral shape

This is surrounded by an outer membrane

Clinical Stages of Lyme Disease

1. Early localized
2. Early disseminated
3. Late Lyme disease
4. Post-Lyme disease syndrome



Clinical Stages of Lyme Disease

Early localized disease

characteristic skin lesion
seen in 80% of patients
with or without constitutional symptoms
occurs within 1 month of a tick bite

Early disseminated disease

multiple ECM lesions
and /or neurologic and cardiac findings
occurs weeks to months after infection

Clinical Stages of Lyme Disease

Late Lyme disease

intermittent or persistent arthritis

involves 1 or several joints

facial palsies

meningitis

late stage neurologic: peripheral neuropathies

occurs months to a few years after infection



Post-Treatment Lyme Disease Syndrome (PTLDS)

Small percentage of persons with documented and treated infection continue to have subjective symptoms

- fatigue

- cognitive difficulties

- widespread musculoskeletal pain

This is NOT “Chronic Lyme”

Infection does not persist

Cause is not known (? result of residual damage to tissues)

Not unusual in the world of infection

CDC criteria for clinical diagnosis of Lyme Disease

Presence of erythema migrans or findings in
any one of the following systems:

Musculoskeletal

Nervous system

Cardiovascular

CDC criteria for clinical diagnosis of Lyme Disease

Musculoskeletal system findings:

recurrent objective joint swelling

NOT: arthralgias, myalgias, fibromyalgias

Second National Conference on Serologic Diagnosis of Lyme Disease.
MMWR 1995;44:590-1.).

CDC criteria for clinical diagnosis of Lyme Disease

Nervous system findings

- lymphocytic meningitis
- cranial neuritis
- facial palsies
- radiculoneuropathy
- encephalomyelitis (rare)

NOT: headache, difficulty concentrating, stiff neck, fatigue, or paresthesias

Second National Conference on Serologic Diagnosis of Lyme Disease. MMWR 1995;44:590-1.).

CDC criteria for clinical diagnosis of Lyme Disease

Cardiovascular findings

Acute onset, high grade conduction defects (2nd or 3rd degree) that resolve in days to weeks; sometimes associated with myocarditis

NOT: palpitations, bradycardia, bundle branch block, or myocarditis alone.

Second National Conference on Serologic Diagnosis of Lyme Disease. MMWR 1995;44:590-1.).

Serologic testing for Lyme disease

Both the ACP and the CDC advise against testing or treating patients for Lyme disease who do not meet clinical criteria.

Two tiered serologic testing is recommended:

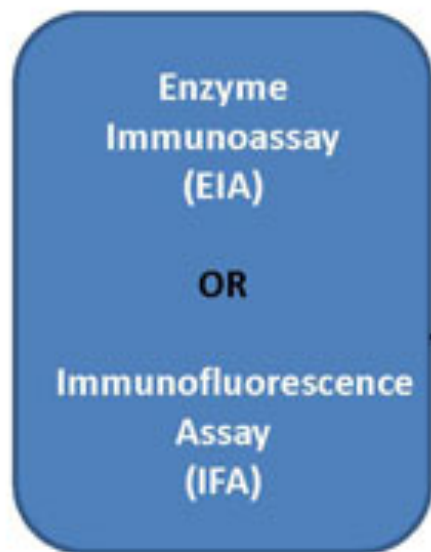
- ELISA (may use immunofluorescence assay instead)

- Western Blot – for both IgG and IgM antibodies

Criteria derived from Dressler, F, Whalen, JA, Reinhardt BN, Steere AC, J Infect Dis 1993; 167:392

Two-Tiered Testing for Lyme Disease

First Test



Positive
or
Equivocal
Result

Negative
Result

Signs or
symptoms
≤ 30 days

Signs or
symptoms
> 30 days

Second Test

IgM and IgG
Western Blot

IgG Western Blot
ONLY

Consider alternative diagnosis

OR

If patient with signs/symptoms consistent
with Lyme disease for ≤ 30 days, consider
obtaining a convalescent serum

Sensitivity of Two-Tiered Serologic Testing

Lyme Disease Stage	Sensitivity (%)
EM rash (acute)	38
EM rash (convalescent)	67
Early neurologic	87
Late neurologic	100
Arthritis	97

Specificity of two-tiered testing is generally $\geq 95\%$

Bottom line:

- Good in later stages of disease
- Testing of patients with EM and exposure in an endemic area is not generally necessary

Advanced Laboratory Services

Developed controversial method for “culturing” *B. burgdorferi*

Marketed since 2011

because used in a single lab, considered a home brew
escapes regulatory safe-guards

Not validated, not FDA-approved

Costs \$595 per test

>80% of patient samples yield an isolate with gene sequences
identical to the laboratory strains used to develop the test.

CDC issued a warning against it in a 2014 MMWR,

IDSA Guidelines for treatment Lyme Disease in the absence of meningitis or advanced AV block

Doxycycline 100 mg twice per day for 10 to 21 days

or

Amoxicillin 500 mg 3 times per day for 14 to 21 days

or

Cefuroxime axetil 500 mg twice per day for 14 to 21 days

Macrolides are not as effective

Ceftriaxone is not superior to the agents listed above

Who should be treated with ceftriaxone?

Patients with:

- acute neurologic manifestations of Lyme disease such as meningitis or radiculopathy.
- atrioventricular heart block and/or myopericarditis.
- persistent joint swelling even after treatment with an oral agent.
- late neurologic Lyme disease.

Should antibiotic therapy be given after a tick bite to prevent infection?

- Single-dose doxycycline prophylaxis recommended if:
 - ❑ *Ixodes* adult or nymph has been attached for ≥ 36 h
 - ❑ Prophylaxis can be provided ≤ 72 h of tick removal
 - ❑ Local rate of *B. burgdorferi* infection in ticks $> 20\%$
 - ❑ Doxycycline can be used
- Efficacy of prophylaxis unknown in children > 8 y (don't use doxycycline for children ≤ 8 y)
- Alternative: watch for EM, other signs of infection
 - ❑ Initiate treatment if they develop Lyme disease
 - ❑ Outcomes excellent if treated during early EM stage

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Photo: John Henrehan/FOX 5

There is no such thing as Chronic Lyme Disease

Chronic Lyme Disease

There is a group of physicians, “Lyme-Literate Physicians”, who believe *B. burgdorferi* persists.

The diagnosis is based solely on clinical judgment.

There are no well-defined clinical criteria

No validated laboratory studies.

Prolonged use of antibiotics is advocated.

May be incurable.

Chronic Lyme Disease Advocacy Groups

Patients and their Lyme-literate physicians have formed societies, support groups, charitable foundations to advocate for their cause.

Time for Lyme

ILADS

LEAP

LDA

CALDA

These exist even where Lyme is not endemic.

They are severely critical of scientists who challenge the notion of Chronic Lyme Disease.

Basis for diagnosis of Chronic Lyme Disease

Fatigue

Night sweats

Sore throat

Swollen glands

Stiff neck

Arthralgias

Myalgias

Back pain

Dizziness

Palpitations

Abdominal pain

Nausea

Sleep disturbances

Poor concentration

Irritability

Depression

Headache

Beliefs of Chronic Lyme Advocates

Chronic, active infection occurs in the absence of serum antibodies.

Lyme specialty laboratories are needed to properly diagnose:

Prolonged (> 6 months) treatment with parenteral antibiotics are needed to cure Lyme.

Other unconventional treatments are used

- hyperbaric oxygen

- bismuth injections

- deliberate injection of plasmodia to cause malaria

Malariotherapy for treatment of Chronic Lyme Disease

The practice of malariotherapy for treating LD has been emphatically discouraged because there have been no controlled, well-designed studies showing that this approach is effective (1) and because of the severe morbidity associated with malaria infection. In addition, this practice poses a risk for coinfection with other bloodborne pathogens and for transfusion reactions. There also may be a small risk for local transmission of malaria in communities in which persons with parasitemia reside. Finally, the unauthorized interstate transport of etiologic agents and of blood and blood products for human use is a violation of federal regulations.

MMWR October 04, 1991 / 40(39);665-666

Categories of Chronic Lyme Disease

1. People with fatigue and other non-specific symptoms and no serologic evidence of infection.
2. People with fatigue and other non specific symptoms with weak serologic evidence of Lyme disease.
3. People with other diagnoses such as multiple sclerosis who reject those diagnoses and believe they have Lyme disease.
4. People who actually had Lyme disease and were treated for it but now have post-Lyme fatigue.

Study of effectiveness of antibiotics with persistent symptoms after diagnosis with Lyme disease

Study population: patients with well-documented, previously treated Lyme disease and with persistent musculoskeletal pain, neurocognitive symptoms, or fatigue.

129 patients enrolled.

78 patients were positive for IgG antibodies to *B. burgdorferi*

51 patients were seronegative.

Klempner et al, N Engl J Med 2001; 345:85-92

Study of effectiveness of antibiotics with persistent symptoms after diagnosis with Lyme disease

Intervention: intravenous ceftriaxone, 2 g daily for 30 days, followed by oral doxycycline, 200 mg daily for 60 days,

or matching intravenous and oral placebos.

Outcome measures: improvement on the physical- and mental-health–component summary scales of the Medical Outcomes Study 36-Item Short-Form General Health Survey

Klempner et al, N Engl J Med 2001; 345:85-92

Study of effectiveness of antibiotics with persistent symptoms after diagnosis with Lyme disease

Results: The DSMB aborted the study after the first 107 patients.

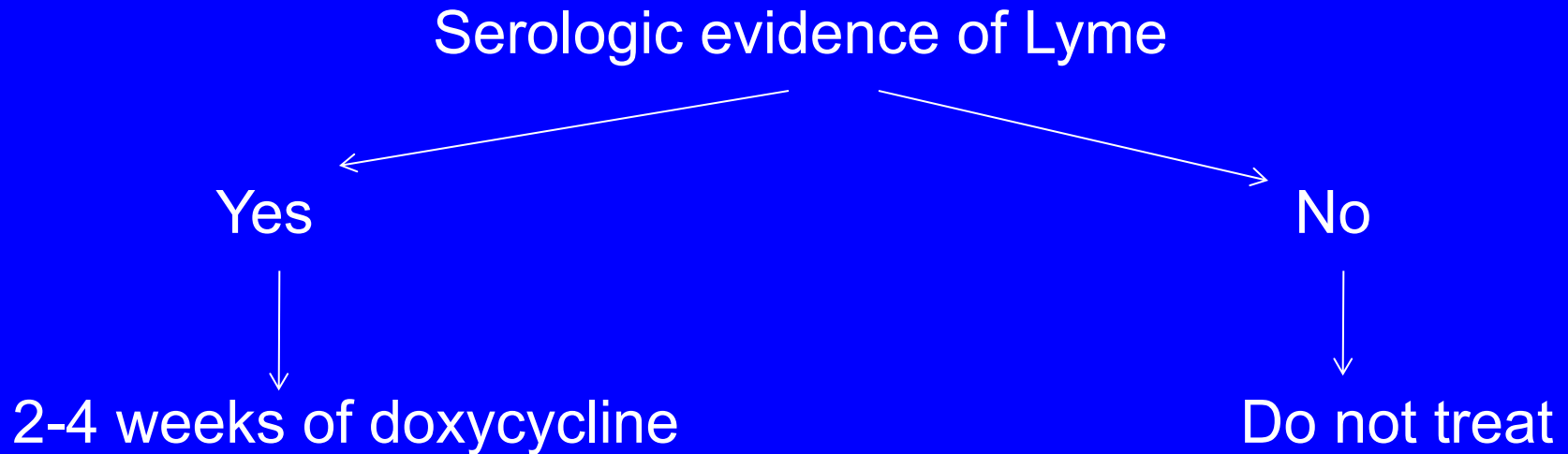
There was no difference in outcomes between the groups treated with antibiotics and those treated with placebo.

Side effects of intravenous lines and of the antibiotics were observed.

Klempner et al, N Engl J Med 2001; 345:85-92

What should you do in patients with vague complaints and no physical findings who believe they have Lyme disease?

What if they have never been to a Lyme-endemic area?



What if a patient still wants to be treated?

Discuss the scientific evidence against a diagnosis of chronic Lyme disease.

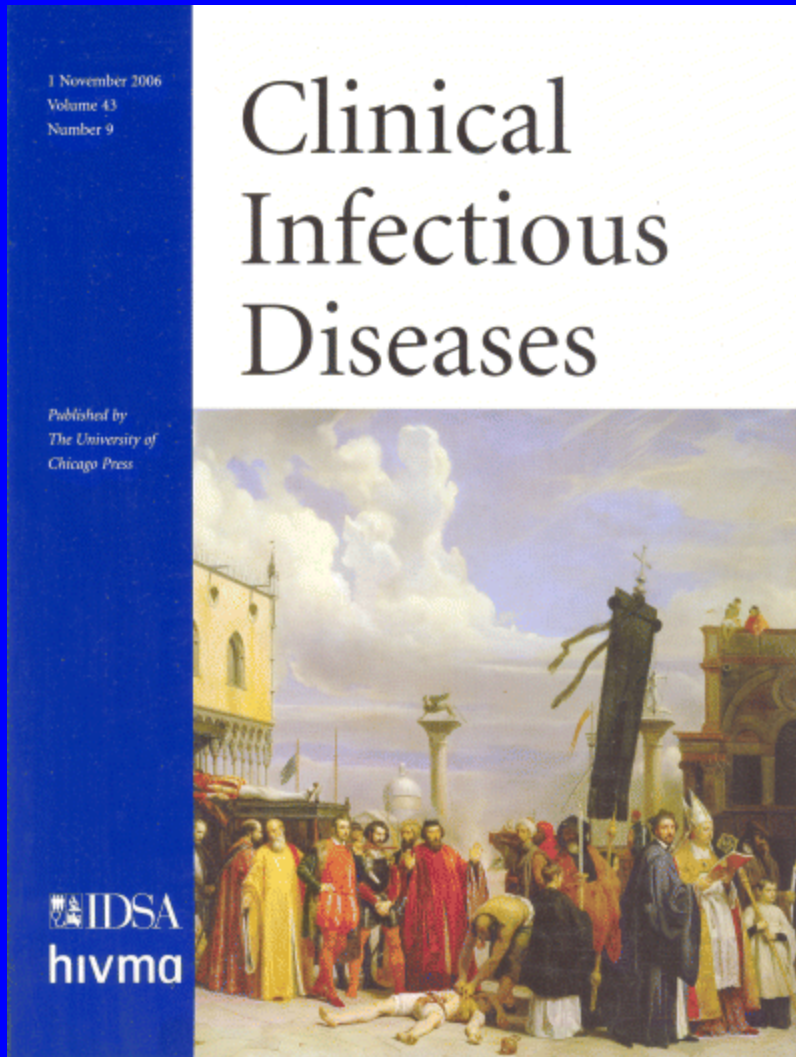
Advise them on the risks of unnecessary long-term antibiotics.

Evaluate them for other medical conditions

Provide emotional support and management of pain and fatigue.

Make a clear and empathetic statement that there are no antibiotics that than cure the symptoms.

The Clinical Assessment, Treatment, and Prevention of Lyme Disease, Human Granulocytic Anaplasmosis, and Babesiosis: Clinical Practice Guidelines by the Infectious Diseases Society of America



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Chronic Lyme Disease

Infectious Diseases Society of America (IDSA) Guidelines, 2006

“There is no convincing biological evidence for the existence of symptomatic, chronic *B. burgdorferi* infection among patients after receipt of recommended treatment regimen for Lyme disease.”

Response to the IDSA Lyme Disease Guidelines

Lyme advocacy groups were enraged by the newly published IDSA guidelines and took their concerns to Connecticut Attorney General, Richard Blumenthal.

November 2006 – Attorney General, Richard Blumenthal initiated an antitrust investigation against the IDSA.

The IDSA authors were said to have a conflict of interest.

They failed to consider divergent opinions

IDSA guidelines were an illegal attempt to monopolize the medical treatment of people with Lyme and related symptoms

Attorney General Richard Blumenthal

Drafted a state law assuring that patients would not be denied coverage for prolonged courses of IV antibiotics for Chronic Lyme.

Member of the advisory board for “Time for Lyme”.

Critical of state health department for underreporting Lyme.



Source: wikipedia

Charges made by CAG Blumenthal against the IDSA

1. Panelists who drafted the 2006 Lyme guidelines had undisclosed conflicts of interest.
2. A biased chairman (one who did not believe in the existence of Chronic Lyme) handpicked a like-minded panel without scrutiny by or formal approval of IDSA's oversight committee.
3. Information regarding the existence of Chronic Lyme was not meaningfully considered.
4. The IDSA blocked the appointment of scientists and physicians with divergent views on Chronic Lyme.

IDSA Press Release, May 2008

The IDSA Lyme disease guidelines recommend against long-term antibiotic therapy, an unproven and potentially dangerous treatment. A small group of physicians outside the medical mainstream and their patients endorse such long-term treatment, despite the compelling medical evidence that it is ineffective and can have serious, life-threatening complications—and, furthermore, is extremely expensive.



Gary Wormser, M.D., chair of the 2006 IDSA Lyme Guidelines Panel

IDSA strongly disagrees with the Attorney General's assertion that panel members had significant conflicts of interest. Panel members had no financial interests that would have affected, or been affected by, recommendations in the guidelines. The guidelines recommend generic drugs and generic diagnostic tests. Panel members do not stand to profit from any recommendation in the guidelines. In fact, the panel members denied themselves and their colleagues an opportunity to generate a significant amount of revenue when they recommended against expensive, repeated, long-term antibiotic therapy.

IDSA agreement with Connecticut Attorney General Blumenthal

THE COMPROMISE

The IDSA agreed to voluntarily hold a one-time special review of the guidelines.

IDSA would pay for all the costs of the meetings, conference calls, and legal fees.

No admission of wrong doing was made by IDSA

A review panel was formed whose members were free from any conflicts of interest.

IDSA agreement with CAG, Blumenthal, *continued*

The review panel would be made up of persons who were free of any conflict of interest.

They jointly agreed to an ombudsman to oversee the process.

Howard Brody, M.D., Ph.D. was selected

physician and ethicist at the Institute for the humanities at the University of Texas.

Dr. Brody reviewed all panelists for conflicts of interest using criteria agreed upon by the CAG and IDSA

The Lyme Review Panel

Nine members were selected.

None had ever previously served on a Lyme disease guidelines panel.

All were physicians and scientists from divergent disciplines.



Work of the Lyme Review Panel

The panel took > 1 year to review the guidelines.

They met 16 times

150 individuals and organizations submitted evidence, letters, newspaper articles, patient medical records and other material.

An all day open public meeting was held in Washington DC on July 30, 2009.

The Report

The panel unanimously upheld the previous 2006 IDSA Lyme Disease guidelines.

They affirmed that there is no convincing evidence for the existence of Chronic Lyme Disease.

The also affirmed that long-term antibiotic treatment for Lyme disease is unproven and unwarranted.

“Symptoms that are commonly attributed to chronic or persistent Lyme, such as arthralgias, fatigue, and cognitive dysfunction, are seen in many other clinical conditions and are, in fact, common in the general population....It would thus be clinically imprudent to make the diagnosis of Lyme disease using these non-specific findings alone.”

Excerpted from the final report of the Lyme disease review panel of the IDSA

Questions to consider

What was achieved?

Was anybody persuaded to think differently about Lyme?

Was it worth the nearly 1 million dollars spent?

Do patient beliefs and politics have a place in guideline-making committees.

The controversy continues...

September 10, 2010: TFL, LDA, and CALDA, announced today that they are withdrawing from the IOM Lyme Workshop due to bias and the lack of balance in scientific viewpoints

In spite of the recommendations to NIH by Congress, the conference opens with perhaps the most polarizing figure in the chronic Lyme debate-- Dr. Gary Wormser of Westchester Medical Center -- who chaired the IDSA Lyme guideline panel and whose highly controversial biased views are well known. There are no scheduled speakers with opposing viewpoints of similar scientific weight to balance his presentation about the research gaps in Lyme disease. Many state-of-the-art scientific researchers and experienced clinicians have been relegated by the IOM and NIH to simply spectator positions.

Nobody changed their minds



IDSA Double Speak

IDSA Official Policy

- Patient protection
- Evidence based medicine
- Guidelines not mandatory
- Treating physicians make money off the sick

IDSA Actual Policy

- Medical abandonment
- Opinion based medicine
- Enforcement of guidelines
- IDSA researchers place commercial interests over patient care

Updates on Lyme Politics

“The Lyme and Tick-Borne Disease Prevention, Education, and Research Act of 2011” (HR-2557) was introduced into congress on July 15, 2011.

Bill would require the Secretary of Health and Human Services to establish a Tick-Borne Diseases Advisory Committee .

The Committee will be charged with advising Federal agencies on priorities related to Lyme and tick-borne disease issues.

The Committee is charged with ensuring that a broad spectrum of scientific and stake-holder viewpoints are represented in public health policy decisions.

Lyme Disease Update: New Controversy

Last winter, those [chronic Lyme] advocates scored a victory when Congress passed the 21st Century Cures Act, which established a national working group on Lyme disease. In June, however, the US Centers for Disease Control and Prevention said it does not recommend prolonged antibiotic therapy – – treatment considered vital by the chronic Lyme community

“This is completely outrageous,” said [US Rep Chris] Smith, who helped author the language in the 21st Century Cures Act. “We thought we were making some progress and they come in slamming the doors. When the CDC says ‘we do not recommend,’ that's tantamount to the kiss of death for patients.”

Asbury Park Press, August 15, 2017

Bill currently circulating in congress asks Trump to drain the CDC swamp

The CDC and IDSA have failed to control Lyme disease. As sufferers, care-takers, friends, family, and co-workers of those who are suffering, we urgently request from the President and all members of Congress:

- 1. Legislation Expanding The Definition Of Lyme Disease To Cover Chronic Lyme And Co-infections**
- 2. Legislation Protecting Doctors Who Treat Chronic Lyme And Co-infections From Insurance Industry-driven Investigation And Shut-down**
- 3. Heavily Increased Funding For Research Into Chronic Lyme Disease And Co-infections**
- 4. Greatly Improved Testing With High Accuracy Rates (As Seen With Ebola And Other Infectious Diseases)**
- 5. Education Of Doctors And The Public Regarding Symptoms And All Treatment Options**

Is Chronic Lyme a manifestation of a new phenomenon in society?

Have previous generations encountered a similar illness along with the associated frustration and anger among people who experience it?

Your symptoms may not be in your head.

“...If you think you may be going crazy; if you have thoughts of suicide; if you’re constantly exhausted, anxious and depressed; if you go weeks without a decent night’s sleep; if your personality changes like the flip of a coin; if a counter full of munchies doesn’t satisfy your sweet tooth; and if your doctor thinks you might be a hypochondriac because medical tests don’t show anything physically wrong with you – don’t despair, there’s hope!”

HSF -- Hypoglycemia Support Foundation

Chronic EBV



<http://www.3withadhd.com/epstein-barr-virus-hidden-disease/>

Lest you think it's just women.....

A cluster of medically unexplained chronic symptoms that can include fatigue, headaches, joint pain, indigestion, insomnia, dizziness, respiratory disorders, and memory problems.

GULF WAR SYNDROME

COMPLETELY UPDATED AND REVISED

THE

YEAST

CONNECTION

A MEDICAL BREAKTHROUGH

**IF YOU FEEL SICK
ALL OVER, THIS BOOK
COULD CHANGE
YOUR LIFE**

WILLIAM G. CROOK, M.D.

**THE
NATIONAL
BEST-
SELLER**

**TIRED-
SO TIRED**

and the
**"yeast
connection"**

WILLIAM G. CROOK, M.D.

with a foreword by Bernard Rimland, Ph.D., Director, Autism Research Institute

Chronic Lyme Disease is not unique

Hypoglycemia in the 1960s and 70s

Chronic candida syndrome

Gulf-war syndrome

Chronic EBV

Multiple chemical sensitivities

Fibromyalgias

Sick building syndrome

CONCLUSIONS

Persons with chronic and vague symptoms but with no diagnosed disease are commonly encountered. This is genuine human suffering and should not be laughed at or ridiculed.

The entity popularly known as Chronic Lyme Disease is not a supportable diagnosis based on scientific evidence.

The antitrust investigation against the IDSA may have set a precedent under which aggrieved constituents may challenge the recommendations and guidelines of professional societies.

Science and medicine move forward in a spirit of inquiry, debate, and amid the friction of ideas – not via the threat of legal action.