

# FALL 2011/Winter 2012 NEWSLETTER

Tick-borne Infections Council of North Carolina, Inc



[www.tic-nc.org](http://www.tic-nc.org)

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**Quote of the season:** *At an event at one of TIC-NC's booths at a street fair, September 2011. One child, 8 or 9, had on his Sunday best and was standing there intensely reading my display, cute as he could be and stole my heart. He told me his mom was really sick with Lyme and had to stay in the dark because the light hurt her eyes. He said he was sick too, but it wasn't Lyme, but started with an "s" and he tried and tried to pronounce it. I showed him Public Health's poster. He said 'That's it—STARI'. He said he had headaches and muscle aches, but him and his mom are better now. He said "You're doing a really good thing" and thanked me.*

## **State Vector-Borne Disease Task Force Meeting Schedule 2012.**

Cardinal Conference room at the Division of Public Health complex on Six Forks Road.

- Tuesday, February 14<sup>th</sup> 10 am to 12 pm
- Friday, May 25<sup>th</sup> 10 am to 12 pm

- Friday, August 10<sup>th</sup> 10 a, to 12 pm
- Tuesday, November 6<sup>th</sup> 10 am to 12 pm

## **Deer at Camp Lejeune Spreading Lyme Disease and Destruction.**

### **Marine Corps Times: Sharpshooters May Target Lejeune Deer**

By [Gina Cavallaro](#) – Staff Writer Posted: Saturday Oct 1, 2011 9:24:18 EDT

The living conditions at Camp Lejeune, N.C., have become a little too comfortable for thousands of white-tailed deer. There are so many, and they're causing so many problems, that base officials are considering the use of sharpshooters from the U.S. Department of Agriculture to end the problem.

Lejeune has documented 120 deer-vehicle collisions since 2009, and officials estimate the hungry animals have destroyed 500 acres of landscaped vegetation in the base's urban areas.

Deer make people sick, too. In 2009, Lejeune medical personnel treated 24 cases of Lyme disease and 11 cases of Rocky Mountain spotted fever, both illnesses caused by deer that also carry ticks and other parasites. In 2010, the number of Lyme disease cases jumped to 39 and there were six cases of Rocky Mountain spotted fever.

Camp Lejeune's own hunting program has helped somewhat, but officials have concluded that hunting alone is not enough to bring the burgeoning population of white tail deer under control. The sharpshooters, or "firearms experts" as the government agency calls them, have helped control deer populations in dozens of wildlife areas, including places like Camp David, the presidential retreat on Maryland's Catoctin Mountain, and in Valley Forge, Pa., where over the course of 16 nights, a team took out 600 deer.

A three-person team comprises a driver, shooter and spotter from the Animal and Plant Health Inspection Service's Wildlife Services program. But don't confuse these shooters with Marine scout snipers. The USDA experts are wildlife biologists who are schooled in the movements and behaviors of animals. They also work at Marine Corps air stations to help control populations of birds that can do more harm to an aircraft than a deer can do in a vegetable garden.

There is no start date yet for the sharpshooter plan, but with hunting season underway in eastern North Carolina, the deer may soon find it hard to hide.

<http://www.marinecorpstimes.com/news/2011/10/marine-sharpshooters-may-target-lejeune-deer-100111w/>

**(TIC-NC Editor's Note:** This article states that Camp Lejeune had 39 cases of Lyme Disease in 2010. The CDC stats list only 21 confirmed cases in the whole state that year {with 61 probables}.)

## **New Tick-Borne Disease Discovered in the United States, Related to Lyme Disease.**

By: [Donald G. McNeil Jr.](#) Published: September 19, 2011

A new tick-borne disease that may be stealthily infecting some Americans has been discovered by Yale researchers working with Russian scientists. The disease is caused by a spirochete bacterium called *Borrelia miyamotoi*, which is distantly related to *Borrelia burgdorferi*, the spirochete that causes [Lyme disease](#). *B. miyamotoi* has been found — albeit relatively rarely — in the same deer tick species that transmit Lyme, and the Yale researchers estimate that perhaps 3,000 Americans a year pick it up from tick bites, compared with about 25,000 who get Lyme disease.

But there is no diagnostic test for it in this country, so it is not yet known whether it has actually made any Americans sick. The same short course of [antibiotics](#) that normally cures Lyme also seems to cure it. Since the disease was only recently discovered, it is unknown whether it does serious long-term damage, as untreated Lyme disease can.

In Russia, where a team in the Siberian city of Yekaterinburg developed a test that can distinguish *miyamotoi* from other tick-borne spirochetes, it caused higher fevers than Lyme disease typically does. In about 10 percent of cases, the fevers repeatedly disappear and return after a week or two.

The scientific paper from the Russian team is available at: [http://wwwnc.cdc.gov/eid/pdfs/10-1474-ahead\\_of\\_print.pdf](http://wwwnc.cdc.gov/eid/pdfs/10-1474-ahead_of_print.pdf) It describes how they found that this bacteria, which is closely related to the Lyme disease bacteria, is a human pathogen.

## **More On This New Tick Disease.**

### **Disease Looks Like Lyme, But It's Not**

[Record Observer](#) Queen Anne County, Maryland

Disease looks like Lyme, But It's Not. Published: Thursday, October 20, 2011 5:19 am CDT

CENTREVILLE Ticks responsible for transmitting Lyme disease may carry an organism that can cause prolonged, relapsing illness in humans. A study to be released this month, humans infected with relapsing fever spirochete *Borrelia miyamotoi*, Russia, by Platonov AE, et al., states the infection is responsible for a relapsing disease that may last for months. No tests are available commercially, and a curative treatment protocol, if one exists, has yet to be established.

Japanese scientists named the organism *Borrelia miyamotoi* in 1995, and within a year, constructed maps of the chromosome. Since then, it has been detected in humans, ticks, birds and other wildlife in at least seven countries, including the United States and Canada.

The disease is characterized by a flu-like illness, headache, chills, fatigue, vomiting, myalgias, neck stiffness and a high fever. Only 9 percent of study participants reported a rash. Additional symptoms can include ocular, neurologic, respiratory, cardiac and pregnancy complications associated with relapsing fevers.

University of Tennessee reported 58 percent of the turkeys harvested in 2009 tested positive for *B.*

miyamotoi. Fisheries and Wildlife at University of Michigan detected the organism in ticks and other wildlife in Michigan. New York, Rhode Island, New Jersey, Connecticut and California have also reported finding the organism. German scientists warn that *B. miyamotoi*, unlike Lyme disease, appears to be readily passed between generations of ticks.

A \$300,000 NIH grant to investigate *B. miyamotoi* and other *Borrelia* species has been awarded. Grant recipients report it is possible that "some prolonged episodes of illness attributed to Lyme disease and designated as 'chronic Lyme disease' are due to *B. miyamotoi* infection". Patients may remain undiagnosed because the disease can be confused with viral infections, Lyme disease, babesiosis, anaplasmosis, ehrlichiosis or any number of illnesses.

Lyme disease alone is estimated to cost society more than \$2 billion a year, which raises concerns about the additional health and financial burden of tick-borne diseases for which there are no reliable tests and no known successful treatment protocols, including any of the 300-plus known strains of *Borrelia* that may or may not cause human or animal disease.

### **Another NC Case of Meat Allergy Following Tick Bites.**

**Things learned as an intern: Tick bites can cause meat allergies**

BY Helen Chappell – Staff Writer

Published in: Health/Science

*On Fridays, The News & Observer runs guest columns from staff members. Helen Chappell, an American Association for the Advancement of Science Fellow, interned at The N&O this summer.*

One night recently, I looked into the mirror and the Stay Puft marshmallow man looked back. Either I needed to call Ghostbusters or visit the hospital. A phone consultation with Dr. Mom convinced me the latter was a better choice.

There, they declared I was having a severe allergic reaction and gave me enough meds to render me insensible. Once I was coherent, I inventoried everything I'd eaten that day. I'd had a burger on the road in South Carolina, but otherwise nothing unusual for me.

I don't eat meat often, but I've eaten it my whole life. How could I develop an allergy to something I've always eaten?

And then those words, "allergy to something I'd always eaten," rang a bell. I'd heard them back in June, when I had just started as the N&O's science intern. At the time, I was working on a story about ticks. One of the folks I spoke to for that story, Barry Engber, at the time a medical entomologist for the state, told me about a weird tick-related allergy in the Southeast. He said some people had developed an allergy to meat - something they'd always eaten - after a tick bite.

And guess what I'd gotten earlier in the summer? A tick bite.

When I was first writing the tick story, I didn't follow up on the meat allergy. It was intriguing, but it just wouldn't fit into my story. But experiencing something for yourself has a funny way of making you really interested all of a sudden.

So I called the doctor at the University of Virginia whose team is researching this allergy, Dr. Tom Platts Mills. I asked him if I was crazy. "Most of the patients who come to see us are looking to be reassured they're not mad," he told me. Oh, good. I wasn't alone.

He then gave me the lowdown on the science of it all. Something that ticks spit into us when they bite - maybe their saliva, maybe a germ they're carrying - provokes some people's immune systems to make antibodies against a kind of sugar in certain meats. Later, when they eat one of those meats - beef, pork, lamb, most of the good ones - those antibodies attack the sugar in that meat like it's an invading disease. In the worst reactions, so many antibodies attack that the body freaks out and goes Stay Puft on its unsuspecting owner, sometimes even suffocating them.

Absolutely wild, but the wildest part for me is that this allergy was discovered so recently that I never would have heard of it if not for my conversation with Barry Engber. I never would have had that conversation if I hadn't been writing that tick story.

And if I hadn't figured this out, for all I know, my next burger could have Stay Pufted me to death. Writing for the N&O just might have saved my life. Who says that internships aren't valuable?

### **Final Report of the Virginia Lyme Disease Task Force.**

There is a new iteration of the Final Report of the VA Lyme Task Force available at:  
[http://wolf.house.gov/uploads/Report\\_of\\_the\\_Virginia\\_Task\\_Force\\_on\\_Lyme\\_Disease\\_Final.pdf](http://wolf.house.gov/uploads/Report_of_the_Virginia_Task_Force_on_Lyme_Disease_Final.pdf)

### **North Carolina Study Published in 2011- New Tick Disease.**

*Rickettsia parkeri* is an 'emerging' tick-borne disease, meaning it was discovered in more recent times and continues to be studied and searched for in various locations. It is related to Rocky Mountain Spotted Fever and does not have common name. See our new slide show on the Gulf Coast tick that carries it (*Amblyomma maculatum*), also new to North Carolina, on our website: <http://www.tic-nc.org/aboutticks.html>

### **Rickettsia parkeri in Amblyomma maculatum Ticks, North Carolina, USA, 2009-2010 - Vol. 17 No. 12 - December 2011 - Emerging Infectious Disease journal – CDC**

Abstract. We detected *Rickettsia parkeri* in 20%–33% of *Amblyomma maculatum* ticks sampled in North Carolina. Results highlight the high frequencies of *R. parkeri*-infected ticks in the state with the highest annual incidence of Rocky Mountain spotted fever. Epidemiologic studies are needed to definitively link *R. parkeri* to cases of spotted fever rickettsiosis.

[http://wwwnc.cdc.gov/eid/article/17/12/11-0789\\_article.htm](http://wwwnc.cdc.gov/eid/article/17/12/11-0789_article.htm)

## **Low Acorn Crop in NE Expected to Cause More Lyme Disease in the Area.**

NY Times – Published: December 3, 2011

**TIC-NC Editor's Note:** While this article recaps acorn production in New York State in 2011, acorn production can also vary within local areas, therefore we thought it would be relevant to our readers. More acorn facts: Acorn production varies year to year and normally alternates. Not even the healthiest and largest oak can accumulate enough food and energy to produce strong crops two years in succession. Real strong acorn productions might happen every four to ten years.

Coming on the heels of an acorn glut, the dearth this year will probably have a cascade of effects on the forest ecosystem, culling the populations of squirrels, field mice and ground-nesting birds. And because the now-overgrown field mouse population will crash, legions of ticks - some infected with Lyme disease - will be aggressively pursuing new hosts, like humans.

"We expect 2012 to be the worst year for Lyme disease risk ever," said Richard S. Ostfeld, a disease ecologist at the Cary Institute of Ecosystem Studies in Millbrook, N.Y. "We are already planning educational materials."

[http://www.nytimes.com/2011/12/03/nyregion/boom-and-bust-in-acorns-will-affect-many-creatures-including-humans.html?\\_r=2&src=me&ref=general](http://www.nytimes.com/2011/12/03/nyregion/boom-and-bust-in-acorns-will-affect-many-creatures-including-humans.html?_r=2&src=me&ref=general)

## **CDC Pushed to do More on Lyme Disease.**

Wolf Pushes CDC on Lyme Disease Fairfax News, Fairfax, Virginia  
December 19, 2011

As part of his ongoing effort to address the devastating impact of Lyme disease, Rep. Frank Wolf (R-VA) today announced that the annual spending bill that funds the Centers for Disease Control (CDC) calls for greater focus on the issue.

Wolf said report language accompanying the FY 2012 Labor, Health and Human Services and Education Appropriations bill approved in the House on December 15 and signed into law on December 17 encourages the CDC to:

- Expand its activities related to developing sensitive and more accurate diagnostic tools and tests for Lyme disease, including the evaluation of emerging diagnostic methods and improving utilization of diagnostic testing to account for the multiple clinical manifestations of acute and chronic Lyme disease;
- Expand its epidemiological research activities on tick-borne diseases to include an objective to determine the long-term course of illness for Lyme disease and to improve surveillance and reporting of Lyme and other tick-borne diseases in order to produce more accurate data;
- Evaluate the feasibility of developing a national reporting system in Lyme disease, including laboratory reporting; and
- Expand prevention of Lyme and tick-borne diseases through increased community-based public education and creating a physician education program that includes the full spectrum of scientific research on the diseases.

The Fiscal 2012 Labor, Health and Human Services and Education Appropriations bill that was approved in the House on Dec. 15 was signed into law on Dec. 17.

<http://fairfaxnews.com/2011/12/wolf-pushes-cdc-on-lyme-disease/>

### **California Lyme Disease Organization Changes its Name.**

CALDA changes its name, but not its mission By: Phyllis Mervine, founder and chairperson of LymeDisease.org, is Editor-in-Chief of the Lyme Times. She can be contacted at [pmervine@lymedisease.org](mailto:pmervine@lymedisease.org).

[http://www.lymedisease.org/news/lyme\\_disease\\_views/newname.html](http://www.lymedisease.org/news/lyme_disease_views/newname.html) October 2, 2011

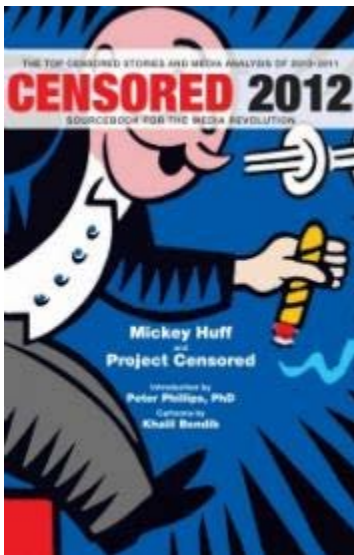
The California Lyme Disease Association has officially changed its name to LymeDisease.org.

**Have some fun:** Click on link to see a cartoon about seeing a doctor for possible Lyme disease:

[http://goanimate.com/movie/0XCA4kvs8vk4?utm\\_source=facebook](http://goanimate.com/movie/0XCA4kvs8vk4?utm_source=facebook)

### **Censored 2012: The Top Censored Stories and Media Analysis of 2010-2011.**

[Paperback] [Mickey Huff](#) (Editor)



Every year, "Project Censored," a news-monitoring research program affiliated with Sonoma State University in California, produces a Top-25 list of underreported news stories. These are also included in an annual book, "Censored," dedicated to news stories that ought to be widely reported but are not.

Number 21 of Project Censored's top-25 is the Lyme disease epidemic. From the website: *Lyme disease is one of the most political and controversial epidemics of our time. Lyme originates from a bacteria transmitted through the bite of a tick and can remain hidden – often being called the great imitator – mimicking other diseases such as Multiple Sclerosis, ALS, ADHD and other neurological conditions. And it is growing – new cases of Lyme occur each year at a rate ten times higher than that of AIDS and the West Nile Virus combined.*



You can read the entire section on Google:

[http://books.google.com/books?id=bzwmpHIQWIUC&pg=PT164&lpg=PT164&dq=Lyme+disease+2012&source=bl&ots=Bia5p\\_puNp&sig=bub8cVF73jmNpF05XWO5pHJZD10&hl=en&ei=\\_wPcTrOfCZGEtgeggMntAQ&sa=X&oi=book\\_result&ct=result&resnum=8&ved=0CE8Q6AEwBzgK#v=onepage&q&f=false](http://books.google.com/books?id=bzwmpHIQWIUC&pg=PT164&lpg=PT164&dq=Lyme+disease+2012&source=bl&ots=Bia5p_puNp&sig=bub8cVF73jmNpF05XWO5pHJZD10&hl=en&ei=_wPcTrOfCZGEtgeggMntAQ&sa=X&oi=book_result&ct=result&resnum=8&ved=0CE8Q6AEwBzgK#v=onepage&q&f=false) Book available on Amazon & elsewhere.

## **Prolonged Use of Antibiotics in Acne Cases Does Not Increase the Risk of Super Infections Like MRSA (Methicillin Resistant Staph Aureus).**

**Antibiotics, Acne, and Staphylococcus aureus Colonization.**  
**Arch Dermatol. 2011; 147(8):917-21 (ISSN: 1538-3652)**

Fanelli M; Kupperman E; Lautenbach E; Edelstein PH; Margolis DJ

Department of Epidemiology and Biostatistics, University of Pennsylvania School of Medicine, 815 Blockley Hall, 423 Guardian Dr, Philadelphia, PA 19104. [dmargoli@cceb.med.upenn.edu](mailto:dmargoli@cceb.med.upenn.edu).

UNLABELLED: Objectives: To determine the frequency of Staphylococcus aureus colonization among patients with acne and to compare the susceptibility patterns between the patients who are using antibiotics and those who are not using antibiotics.

DESIGN: Survey (cross-sectional) study of patients treated for acne.

SETTING: Dermatology outpatient office practice

PARTICIPANTS: The study included 83 patients who were undergoing treatment and evaluation for acne. Main Outcome Measure Colonization of the nose or throat with S aureus.

RESULTS: A total of 36 of the 83 participants (43%) were colonized with S aureus. Two of the 36 patients (6%) had methicillin-resistant S aureus ; 20 (56%) had S aureus solely in their throat; 9 (25%) had S aureus solely in their nose; and 7 (19%) had S aureus in both their nose and their throat. When patients with acne who were antibiotic users were compared with nonusers, the prevalence odds ratio for the colonization of S aureus was 0.16 (95% confidence interval [CI], 0.08-1.37) after 1 to 2 months of exposure and increased to 0.52 (95% CI, 0.12-2.17) after 2 months of exposure (P = .31). Many of the S aureus isolates were resistant to treatment with clindamycin and erythromycin (40% and 44%, respectively), particularly the nasal isolates. Very few showed resistance rates (<10%) to treatment with tetracycline antibiotics. Conclusion Unlike current dogma about the long-term use of antimicrobial agents, the prolonged use of tetracycline antibiotics commonly used to treat acne lowered the prevalence of colonization by S aureus and did not increase resistance to the tetracycline antibiotics.

## **TIC-NC Letter in Response to STARI Article in the Medical Journal *Clinical Infectious Diseases* Published.**

**Article: Southern Tick-Associated Rash Illness (STARI) in the North: STARI following a tick bite in Long Island, New York.** [Feder HM Jr](#), [Hoss DM](#), [Zemel L](#), [Telford SR 3rd](#), [Dias F](#), [Wormser GP](#). [Clin Infect Dis](#). 2011 Nov;53(10):e142-6. Epub 2011 Sep 21.

**Abstract.** The most common clinical manifestation of Lyme disease is the characteristic rash, erythema migrans (EM). In the 1980s EM-like eruptions were reported in Missouri and other southeastern states.



The EM-like eruptions, which were of unknown etiology, often followed the bite of the Lone Star tick (*Amblyomma americanum*) and the rash is called STARI (southern tick-associated rash illness). Although the Lone Star tick is found in the Lyme disease-endemic areas of New England and Mid-Atlantic regions of the United States, STARI has been reported only once from the Northeast and Mid-Atlantic regions. We report a child from Connecticut who visited Long Island, New York, and developed a rash that was thought to be EM. Because the patient failed to respond to antibiotics used to treat Lyme disease, an investigation ensued, and the diagnosis of STARI was established.

### **Letter: Southern Tick–Associated Rash Illness: Further Considerations**

To the Editor—Southern tick–associated rash illness (STARI) continues to be an enigma despite years of research. While findings on STARI in the northern United States in the article by Feder et al [1], based on 1 patient from Long Island, cannot be expected to set a standard, the case supports points we have previously proposed: (1) Confusion exists between Lyme disease and STARI in reporting, diagnosis, and treatment, a problem well recognized in the southern United States and growing in recognition in the northern United States; (2) because of this, cases of Lyme disease are likely overreported in the northern United States and underreported in the southern United States; (3) patients should be taught to keep removed ticks; and (4) much more work needs to be done on diseases transmitted by *Amblyomma americanum* ticks, especially STARI’s etiology and full clinical spectrum.

Feder et al’s abstract [1] states that “the patient failed to respond to antibiotics used to treat Lyme disease.” In fact, because the patient was 2 years old, she was treated with amoxicillin only, not multiple antibiotics that would include doxycycline (typically not used on children ,8 years of age). It cannot be inferred that other antibiotics used to would fail to clear STARI’s erythema migrans–like rash. In several papers, Masters [7] discussed patient responsiveness to doxycycline. In the days before the rash and illness from lone star ticks was called STARI, Kirkland et al [2] described 14 cases at a camp for adolescents in central North Carolina. All 14 were treated with 10 days of doxycycline and reported resolution of their symptoms and erythema migrans–like lesions. It is notable that the several positive enzyme-linked immunosorbent assays and Western blots for *Borrelia burgdorferi* from the patients were dismissed as false positives [2]. It is interesting to contemplate the dilemma created by this practice. Without positives, there is no Lyme disease; if there is a positive, it is likely false.

In the early days of Lyme disease research, the lone star tick was considered a possible vector. Shulze et al [3] described 2 patients in New Jersey with erythema migrans and positive tests for Lyme disease from lone star tick bites. They isolated spirochetes from the ticks. These patients would now be considered to have STARI.

Whether *A. americanum* ticks can, at least occasionally, vector *B. burgdorferi* [4] may need to be revisited using modern techniques. In addition, the search for other *Borrelia* genospecies and strains, more varied in the southern United States [5, 6], may merit being widened. Non-*Borrelia* organisms also need to be sought in the quest for the STARI agent. Years ago Kirkland et al [2] and Masters et al [7] pointed out that the natural history of STARI was unknown. This is still true today. There are no long-term studies on sequelae of untreated STARI, and such a study would be difficult, if not impossible, to conduct today due to evidence of illness from STARI [1, 2, 7] and modern requirements for informed

consent. In the era of evidence-based medicine, a single case report is contributory but not definitive.

Marcia E. Herman-Giddens  
School of Public Health, The University of North Carolina at Chapel Hill

## References

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## **Emerging roles of pathogens in Alzheimer disease.**

**Judith Miklosy, Expert Reviews in Molecular Medicine, published online: 20 September 2011.**

<http://dx.doi.org/10.1017/S1462399411002006>

### Abstract

Chronic spirochetal infection can cause slowly progressive dementia, cortical atrophy and amyloid deposition in the atrophic form of general paresis. There is a significant association between Alzheimer disease (AD) and various types of spirochete (including the periodontal pathogen *Treponemas* and *Borrelia burgdorferi*), and other pathogens such as *Chlamydomypha pneumoniae* and herpes simplex virus type-1 (HSV-1).

Exposure of mammalian neuronal and glial cells and organotypic cultures to spirochetes reproduces the biological and pathological hallmarks of AD. Senile-plaque-like beta amyloid (A $\beta$ ) deposits are also observed in mice following inhalation of *C. pneumoniae* in vivo, and A $\beta$  accumulation and phosphorylation of tau is induced in neurons by HSV-1 in vitro and in vivo. Specific bacterial ligands, and bacterial and viral DNA and RNA all increase the expression of proinflammatory molecules, which activates the innate and adaptive immune systems.

Evasion of pathogens from destruction by the host immune reactions leads to persistent infection, chronic inflammation, neuronal destruction and A $\beta$  deposition. A $\beta$  has been shown to be a pore-forming antimicrobial peptide, indicating that A $\beta$  accumulation might be a response to infection. Global attention and action is needed to support this emerging field of research because dementia might be prevented by combined antibiotic, antiviral and anti-inflammatory therapy.

## **2011 Columbia University Lyme and Tick-Borne Disease Conference.**

2011 Lyme and Tick Borne-Diseases National Conference  
Co-sponsored by Columbia University & The Lyme Disease Association  
October 1 & 2, 2011, Philadelphia  
Scientific Chairs: Brian Fallon, MD, Columbia University  
Richard Marconi, PhD, Virginia Commonwealth University

<http://www.columbia-lyme.org/research/scientific.html>

## **Don't Let Fall Bite You Back.**

**From the University of Tennessee Institute of Agriculture October 20, 2011**



Adult blacklegged ticks become active in fall – this 'questing' female has raised her front legs to sense suitable wildlife hosts as they pass by. (Image provided by Graham Hickling.)

### ***Hunters, hikers, fall foliage watchers should also be watching for ticks***

KNOXVILLE, Tenn. — It's autumn in Tennessee, and the state's abundant natural resources are beckoning people to the woods—to hunt, hike or enjoy the beauty of fall foliage.

And that means potential exposure to blacklegged ticks, which could be carrying the bacteria that cause Lyme disease.

At the University of Tennessee Institute Of Agriculture, ecological researchers are engaged in a four-year, National Science Foundation-funded study of ticks, and the risks they pose for transmitting several diseases. They are evaluating ticks at study sites in Tennessee, Alabama and North Carolina. While investigating disease risks, their work is also yielding practical tips regarding ticks and tick bites.

These tips include the following. Machine washing and drying of your clothes after being in the woods is a good idea, because tiny immature ticks can be almost impossible to spot. UT undergraduate John Norris found that ticks can survive the water and detergent in a washing machine, but are often killed by being pounded against jeans and other bulky clothes. Putting the wet clothes through the dryer is even more deadly and will quickly kill all the ticks.

**TIC-NC Editor's note:** Unfortunately, this study is not looking at lone star ticks or the Lyme-like disease they transmit. The scientists also do not appear to be reassessing whether or not ticks other than the black-legged tick can transmit Lyme disease.

See entire article at: <http://www.agriculture.utk.edu/news/releases/2011/10-TickWarning.html>

### **Protest at the Infectious Disease Society of America's 49<sup>th</sup> Annual Conference.** **October 22, 2011.**

A Lyme group called "LymeKick" organized a protest against the IDSA's Lyme Disease Treatment Guidelines which was held, 10.22 just across the street from where the IDSA's 49th annual conference was held. The protesters reported that they could see conference attendees taking photos and videos of them through the building's windows, and that some attendees stopped in the streets and asked them for more information.



### **Iceman Has Evidence of Lyme Disease Infection.**

#### **Iceman Autopsy**

**By Stephen S. Hall, National Geographic Magazine, Washington, D.C.**

**November 2011**

National Geographic Iceman Autopsy records earliest case of human Lyme disease ever detected (emphasis added below):

"The genetic results add both information and intrigue. From his genes, we now know that the Iceman had brown hair and brown eyes and that he was probably lactose intolerant and thus could not digest

milk—somewhat ironic, given theories that he was a shepherd. Not surprisingly, he is more related to people living in southern Europe today than to those in North Africa or the Middle East, with close connections to geographically isolated modern populations in Sardinia, Sicily, and the Iberian Peninsula. The DNA analysis also revealed several genetic variants that placed the Iceman at high risk for hardening of the arteries. ("If he hadn't been shot," Zink remarked, "he probably would have died of a heart attack or stroke in ten years.") *Perhaps most surprising, researchers found the genetic footprint of bacteria known as *Borrelia burgdorferi* in his DNA—making the Iceman the earliest known human infected by the bug that causes Lyme disease.*"

<http://ngm.nationalgeographic.com/2011/11/iceman-autopsy/hall-text>

### **Science Retracting Report of Retrovirus in Patients with Chronic Fatigue Syndrome.**

Retraction of Lombardi et al., Science 326 (5952) 585-589. Science, 23 December 2011: Vol. 334, no. 6063, p. 1636.

For full story: <http://dx.doi.org/10.1126/science.334.6063.1636-a>

Retraction: *Science* is fully retracting the report "detection of an infectious retrovirus, XMRV, in blood cells of patients with chronic fatigue syndrome".

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*TIC-NC is grateful for the financial contributions of Insect-Shield, Inc.*

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*Tick-Borne Infections Council of North Carolina is a non-profit organization formed to improve the recognition, treatment, control, and understanding of tick-borne diseases in North Carolina. We are all-volunteer and appreciate donations.*

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