

## SPRING NEWSLETTER 2010

Tick-borne Infections



Council of North Carolina, Inc

### Highlights...

**Scroll down to see these features and more!**

- The state Tick Attachment Study and surveillance activities
- Copy of 2010 letter from NC Public Health to medical providers re: Lyme disease
- NEW TICK DISEASE AFFECTS CATS- CYTAUXZONOSIS
- Chatham County study finds numerous pathogens in ticks
- IDSA guidelines mostly upheld, statement from the IDSA and from the LDA
- **Stop getting ticks:** send in your own clothes for **Insect Shield** treatment, form attached

### Quote of the season...

"The tick population in Chatham County contains a diverse array of microbes, some of which are known or potential pathogens." Smith et al. See article below on bacterial pathogens.

### STATE VECTOR-BORNE DISEASE TASK FORCE MEETING SCHEDULE

In 2010 the remaining Vectorborne Task Force meeting dates are:

- August 13, 2010, 2728 Capital Boulevard, Raleigh
- Oct 15, Cardinal Conference Room, 5605 Six Forks Road, building 3


Each meeting is on Friday and will meet from 10 AM until 12 PM at the main DPH offices on Six Forks Road. The meetings are open to the public.

The state has recently revised their tick-related brochures. Another revision is due soon. They can be accessed at: <http://www.deh.enr.state.nc.us/phpm/brochures.htm>

### THE STATE TICK ATTACHMENT AND SURVEILLANCE ACTIVITIES

DENR Public Health Pest Management has an excellent website showing the results, to date, of their tick attachment and enhanced surveillance activities. Their data can be reviewed at: [http://www.deh.enr.state.nc.us/phpm/ticks\\_projects.htm](http://www.deh.enr.state.nc.us/phpm/ticks_projects.htm).

## NEW INFORMATION REGARDING ROCKY MOUNTAIN SPOTTED FEVER FROM NORTH CAROLINA STATE DEPARTMENT OF PUBLIC HEALTH-- Surveillance case definition changed

Date: 12 May 2010  
To: NC Medical Providers  
From: Dr. Megan Davies, State Epidemiologist   
Subject: Diagnosis and Surveillance for Tick Borne Rickettsial diseases (TBRD) and Arboviral diseases

### Tick Borne Rickettsial disease:

In 2010 the surveillance case definition for Rocky Mountain Spotted Fever (RMSF) was changed to Spotted Fever Rickettsiosis (SFR). SFR is inclusive of *Rickettsia rickettsii*, the causative agent of RMSF, as well as infection with other Rickettsia, such as *Rickettsia parkeri*. These rickettsioses are responsible for diseases with similar clinical presentation that are difficult to differentiate with commonly available serologic assays. Referring to these illnesses as SFR is more reflective of actual disease occurrence. For additional details see: <http://www.cste.org/ps2009/09-ID-16.pdf>.

RMSF is still reportable in North Carolina and is the most common TBRD in the state. RMSF can be a potentially severe or fatal. In NC, the tick associated with transmission of *R. rickettsii* is *Dermacentor variabilis*. The symptoms of RMSF generally include a sudden onset of fever, myalgia, and headache within 3 to 14 days following a tick bite.

Ehrlichiosis is also a reportable disease in NC. The diseases include human monocytotropic ehrlichiosis (HME), human granulocytotropic anaplasmosis (HGA), and ehrlichiosis caused by *Ehrlichia ewingii*. HME is caused by the *E. chaffeensis* following the bite of an infected lone star tick (*Amblyomma americanum*). HGA is caused by the bacteria *Anaplasma phagocytophila* and is transmitted by the tick *Ixodes scapularis*, the same tick that transmits Lyme disease. *Amblyomma americanum* is the primary tick vector of *E. ewingii*.

Treatment for TBRD (doxycycline) is very effective at reducing the severity of the disease. It is important that antibiotic treatment for TBRD be started without delay when they are suspected. Laboratory testing for TBRD typically consists of blood samples taken in the early stages of the illness (acute) and follow up (convalescent) specimens taken at least four weeks after the first specimen. Laboratory testing, though important for surveillance purposes and diagnostic confirmation, can take days to weeks for results to become available. If TBRD is suspected, it is important treatment with the appropriate antibiotics not be delayed while waiting for laboratory confirmation. Definitive guidelines are available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5504a1.htm>.

## NEW TICK DISEASE AFFECTS CATS- CYTAUXZONOSIS

VTH Warns of Tick-Transmitted Disease Danger to Cats

Clinicians in the Veterinary Teaching Hospital at North Carolina State University College of Veterinary Medicine are advising cat owners and their veterinarians about an increase in a deadly tick-transmitted infectious disease that without proper treatment has a mortality rate close to 100%.

The disease, Cytauxzoonosis, is related to malaria and is caused by the parasite, *Cytauxzoon felis*, found in ticks carried by host bobcats. The most common symptoms of infection are lack of energy and appetite, usually accompanied by a profound fever. Some cats develop a yellow discoloration of the skin and the whites of the eyes.

According to Dr. Adam Birkenheuer, professor of internal medicine, *C. felis* was first discovered in Missouri in the mid-1970s and for years was only documented in the south central region of the U.S. Prior to the late 1990s the disease had never been reported in North Carolina.

Between 1998 and 2004 we saw a series of 34 cases from North and South Carolina and Virginia that were diagnosed by the NC State [Vector Borne Disease Diagnostic Laboratory](#) here at the CVM and the State Animal Disease Diagnostic Laboratories says Dr. Birkenheuer. We reported this surge in cases in the Journal of the American Veterinary Medical Association as we went from having never seen this deadly disease to times where we saw several cases a week in the Veterinary Teaching Hospital.

The disease seems to occur in hotspots with some households having several cats acquiring the infection. The majority of cases seen at the Veterinary Teaching Hospital (VTH) have come from Pittsboro, Southern Pines, and coastal North Carolina from Morehead City down to the Southport area. Pet owners and veterinarians should be aware that these are not the only affected areas and VTH cases have come from other parts of the Triangle including Wake Forest, Rolesville, and eastern Raleigh.

There are a couple of reasons we believe we are seeing this increase in Cytauxzoonosis, says Dr. Birkenheuer. One is the change in the distribution of the tick species that can transmit the infection to domestic cats. There are two species of ticks that can transmit the infection from bobcats to domestic cats, *Dermacentor variabilis* and *Amblyomma americanum*. *Amblyomma americanum* is a tick species that aggressively feeds on just about any mammal and has a geographic distribution that is rapidly expanding north and east. The other is that some cats survive the infection and can act as a reservoir leading to the infection of more cats.

Testing for the disease is relatively simple and the veterinarian can usually make the diagnosis by examining a blood smear or performing a cytologic examination of infected tissues like lymph nodes, liver, or spleen. In some cases a DNA test can be used to confirm infection.

Up until recently, most veterinarians have been taught that this disease is 100% fatal and that there is nothing that can be done. Recently in collaboration with the University of Missouri, NC State clinicians performed a clinical trial evaluating a new treatment. With this new treatment patients at the VTH have had survival rates approaching 85%. The results of the trial should be published soon. CVM researchers with the [Center for Comparative Medicine and Translational Research](#) and researchers at the University of Missouri have sequenced the parasite genome and hope to use this information to develop a vaccine and additional novel treatments.

We are very excited about the results of the clinical trial, but this is still a very serious illness that often requires a week or more of hospitalization but after treatment these cats return to live a completely normal life, says Dr. Birkenheuer. In fact they seem immune to re-infection after recovery.

The best protection against Cytauxzoonosis is to keep cats indoors and use a treatment that is approved to kill ticks on cats (some canine products can be toxic to cats). The use of anti-tick products alone may not guarantee the prevention of infection. A veterinarian should be consulted immediately if an owner detects any signs of the disease in the pet. *Article courtesy of the North Carolina State University Veterinary Teaching Hospital*

# STATE LETTER TO NC MEDICAL PROVIDERS REGARDING LYME DISEASE



North Carolina Department of Health and Human Services  
Division of Public Health – Epidemiology Section  
1902 Mail Service Center • Raleigh, North Carolina 27699-1912  
Telephone: 919-733-3419 Fax: 919-870-4807

Beverly Purdue, Governor  
Lanier Cansler, Secretary

Jeffrey Engel, MD  
State Health Director

Date: 12 May 2010  
To: NC Medical Providers  
From: Dr. Megan Davies, State Epidemiologist *MD Davies, MD*  
Subject: Diagnosis and Surveillance for Lyme disease

In 2009, six reported cases met the case definition criteria for confirmed Lyme disease (LD) in patients that reportedly had not travelled outside of North Carolina during the incubation period, meaning that these cases were acquired in NC. The Division of Public Health (DPH) wants to stress that Lyme disease can be acquired in NC, and should be considered even if the patient has not travelled to a historically endemic area for Lyme disease. Diagnosis and surveillance for LD is challenging and published guidelines may present conflicting information. The DPH wants to ensure that opportunities to treat potential cases of LD are not missed.

## Clinical vs. Surveillance Diagnosis; Indications for Treatment

The clinical diagnosis of LD must take into account symptoms and prior probability of disease. The 2006 IDSA guidelines<sup>1</sup> provide assistance in establishing a diagnosis of LD and medical management of cases. Surveillance criteria required to confirm a case of LD are intentionally much more strict. Serology is often required to fulfill the surveillance criteria for LD yet must be interpreted with caution. In 1997 the FDA issued a medical bulletin titled, Lyme Disease Test Kits: Potential for Misdiagnosis<sup>2</sup>, which states: "The tests should be used only to support a clinical diagnosis of Lyme disease and should never be the primary basis for making diagnostic or treatment decisions. Diagnosis should be based on a patient history, which includes symptoms and exposure to the tick vector and physical findings." Therefore the DPH encourages health care providers to treat patients on the basis of clinical findings. Do not wait for confirmatory laboratory testing. Serologic testing is often too insensitive in the acute phase (the first two weeks of infection) to be helpful diagnostically. Appropriate antibiotic therapy and long-term outcomes in patients with early LD have recently been described.<sup>3</sup>

## How can you Help in Surveillance for Lyme disease

To gather greater surveillance information we request assistance from health care providers to help establish a more comprehensive characterization of LD in North Carolina and to help differentiate between LD and Southern Tick-Associated Rash Illness (STARI). Appropriate serologic testing of Lyme disease, for surveillance purposes, requires two-tier testing performed in accordance with CDC guidelines. As excerpted from the 2006 IDSA guidelines "First tier testing is most often performed using a polyvalent ELISA. If the first tier assay result is positive or equivocal, then the same serum specimen is retested by separate IgM and IgG immunoblots. For patients with symptoms in excess of 4 weeks to be considered seropositive, reactivity must be present on the IgG immunoblot specifically." Serologic testing for Lyme disease is not performed by the NC State Laboratory of Public Health but can be ordered through private laboratories. See attached table.

Please contact us with any questions or concerns that you have regarding diagnosis of Lyme disease. Your time and consideration on this topic are greatly appreciated.

1. CID 2006;43 1089-1134 & <http://www.idsociety.org/>
2. <http://www.fda.gov/MedicalDevices/Safety/AlertsandNotices/PublicHealthNotifications/UCM062429>
3. Kowalski, et.al. "Antibiotic treatment duration and long-term outcomes of patients with early lyme disease from a lyme disease-hyperendemic area." *Clin Infect Dis.* 2010 Feb 15;50(4):512-20.



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## **A NEW NORTH CAROLINA STUDY FINDS NUMEROUS PATHOGENS IN LOCAL TICKS**

### **Bacterial Pathogens in Ixodid Ticks from a Piedmont County in North Carolina: Prevalence of Rickettsial Organisms**

Michael P. Smith, Loganathan Ponnusamy, Ju Jiang, Luma Abu Ayyash, Allen L. Richards, Charles S. Apperson  
Vector-Borne and Zoonotic Diseases, Online Ahead of Print: May 10, 2010.

<http://www.ncbi.nlm.nih.gov/pubmed/20455778>

#### **Abstract**

In North Carolina, reported human cases of tick-borne illness, specifically Rocky Mountain spotted fever, have escalated over the past decade. To determine the relative abundance of vectors and to estimate the risk of acquiring a tick-borne illness in peri-residential landscapes, ticks were collected in Chatham County, a typical Piedmont county and, samples of the ticks were tested for infection with selected bacterial pathogens using real-time quantitative polymerase chain reaction assays.

Ticks (n=3746) were collected by flagging vegetation at 26 sites from April to July 2006. The predominant questing tick was *Amblyomma americanum* (98.5%) with significantly fewer *Dermacentor variabilis* (1.0%) and *Ixodes scapularis* (0.5%) collected. Spotted fever group (SFG) rickettsiae were detected in 68.2% of 1590 *A. americanum* with 56.4% of the molecular isolates identified as *Rickettsia amblyommii*, an informally named member of the SFG rickettsiae.

Comparatively, smaller numbers of *A. americanum* contained *Ehrlichia chaffeensis* (1.8%) and *Borrelia lonestari* (0.4%). Of 15 *I. scapularis* nymphs tested, 6 (40%) were positive for *Borrelia burgdorferi sensu lato*. Seven (19.4%) of 36 adult *D. variabilis* tested positive for *Rickettsia montanensis*, 4 (11.1%) were positive for *R. amblyommii*, and 5 (13.9%) were infected with unidentified species of SFG rickettsiae.

The tick population in Chatham County contains a diverse array of microbes, some of which are known or potential pathogens. Highest attack rates would be expected from *A. americanum* ticks, and highest potential risk of infection with a tick-transmitted agent would be to rickettsial organisms, particularly *R. amblyommii*. Accordingly, longitudinal eco-epidemiology investigations are needed to determine the public health importance of *A. americanum* infected with rickettsial organisms.

## **FOR THE SPANISH SPEAKING COMMUNITY**

A Lyme and Tick Borne Disease website has been published in Spanish. It has an accurate translation of Dr. Joseph Burrascano's *Advanced Topics in Lyme Disease*. <http://hispaniclyme.com/>

## **INFECTIOUS DISEASE SOCIETY OF AMERICA'S LYME DISEASE GUIDELINES UPHELD April 22, 2010**

The Panel's final report has been released and is available at <http://www.idsociety.org/Content.aspx?id=16499>. The report outlines the review process, presents the rationale for the Panel's key findings, and offers important suggestions for the next time the guidelines are reviewed for possible revision.

**News release from the IDSA:** A special review panel has unanimously agreed that no changes need be made to the 2006 Lyme disease treatment guidelines developed by the Infectious Diseases Society of America (IDSA).

The guidelines, voluntarily used by physicians to help them decide what treatments are best and safest for patients, were the subject of an antitrust investigation begun in 2006 by Connecticut Attorney General Richard Blumenthal. Blumenthal examined whether the guidelines' authors had conflicts of interest and failed to consider divergent medical opinions. IDSA maintains those assertions were unfounded and, as part of an agreement to end the Attorney General's investigation, voluntarily agreed to a one-time special review of the guidelines by an independent scientific review panel whose members were certified to be free from any conflicts of interest by an independent ombudsman.

At issue is the existence of a "chronic" form of Lyme disease and its treatment with long-term antibiotics for months or years. This controversial and costly treatment, which is typically delivered intravenously through a catheter, is advocated by self-described "Lyme literate" physicians.

"IDSA's primary concern is for the health and safety of patients," said IDSA president Richard Whitley, MD. "Our goal is to ensure that patients are given treatment that is safe, effective and supported by scientific evidence. Allegations that the 2006 guidelines panelists stood to gain from the recommendations are unfounded. In fact, one could argue the opposite was true, because the panelists recommended short courses of generic drugs."

To ensure a fair and unbiased review of the 2006 guidelines, IDSA and the Attorney General jointly selected an ombudsman, Howard Brody, MD, PhD, an author and respected medical ethicist at the University of Texas Medical Branch. Brody screened all potential review panel members for conflicts of interest using criteria jointly approved by the Attorney General and the IDSA. The review panel was comprised of nine scientists and physicians from relevant disciplines who had not served on any previous Lyme disease guidelines panel.

The review panel's work took more than a year to complete, with the group convening 16 times, including at an all-day public hearing in Washington, D.C. More than 150 individuals or organizations submitted evidence and other information including letters, newspaper articles, patient medical records and other materials on Lyme disease and its treatment. Learn more about Lyme disease and the review process.

“This was truly an extraordinary review process,” said Carol J. Baker, MD, who chaired the review panel and is a pediatric infectious diseases specialist at Baylor College of Medicine in Houston. “The final report includes more than 1000 citations, and after thoughtfully and carefully reviewing myriad materials, the panelists feel confident that advice to physicians treating Lyme disease should remain the same as set forth in the 2006 Lyme disease guidelines.”

The review panel concurred that all of the recommendations from the 2006 guidelines are medically and scientifically justified in light of the evidence and information provided, including the recommendations that are most contentious: that there is no convincing evidence for the existence of chronic Lyme infection; and that long-term antibiotic treatment of “chronic Lyme disease” is unproven and unwarranted. Inappropriate use of antibiotics (especially given intravenously) has been shown to lead to deadly blood infections, serious drug reactions and *C. difficile* diarrhea, as well as the creation of antibiotic-resistant bacteria or “superbugs.”

As noted in the review panel report, “In the case of Lyme disease, there has yet to be a single high quality clinical study that demonstrates comparable benefit to prolonging antibiotic therapy beyond one month.” The report also noted that “the inherent risks of long-term antibiotic therapy were not justified by clinical benefit.”

At the request of the Attorney General, the panel also reviewed a statement in the guidelines’ executive summary concerning diagnostic testing. The panel was evenly split on whether the statement would benefit from modification or clarification. In its final report, the panel offered this guidance to clinicians: “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 nonspecific findings alone.” On the other hand, the panel said, “in clinical practice, the presence of certain classic complications of Lyme disease such as aseptic meningitis, AV nodal block, inflammatory arthritis, and cranial or peripheral neuropathies, in a patient with epidemiologic risk of Lyme disease and in whom alternative diagnoses have been excluded or are unlikely, may be sufficiently convincing as to constitute an exception to the statement in the executive summary.”

Whitley notes that, as per the review panel’s recommendation and IDSA’s practice, IDSA will review the Lyme disease guidelines on a regular basis to determine the need for updating based on any newly available evidence that would warrant a change to the current recommendations. Guidelines involve synthesizing the highest-quality research available to guide physicians seeking to provide the best and safest care for their patients. In addition to Lyme disease, the Society authors treatment guidelines for more than 50 infectious diseases and conditions, including HIV/AIDS, influenza, pneumonia and *C. difficile*.

“This special review validates the recommendations, which are again proven to be based on the best science available,” said Whitley. “Our No. 1 concern is the patients we treat, and we’re glad patients and their physicians now have additional reassurance that the guidelines are medically sound.” *Infection Control Today*, (480) 990-1101 ext. 1568

Since the announcement regarding these guidelines, The CDC's official Lyme disease webpage has been totally reworked since the big announcement. A link to the IDSA Review Panel Report has been posted on it. A link to the IDSA Guidelines and the IDSA's online Lyme CME course is now listed on the front page of the CDC website. <http://www.cdc.gov/ncidod/dvbid/Lyme/>

#### **STATEMENT OF THE NATIONAL NON PROFIT LYME DISEASE ASSOCIATION, INC. ON THE IDSA GUIDELINES PANEL DECISION 4-22-10**

We are not surprised by the conclusions reached by the IDSA review panel but are certainly disappointed. It is certainly suspect that in considering a disease with numbers on the rise (250% increase from 1993-2008), one which is so highly controversial and with unsettled and “undone” science, that the panel would vote “lockstep” (8-0) except for one dissenting vote to uphold all of the original recommendations. The national Lyme disease Association (LDA) and its 35 associated organizations publicly expressed their concerns about bias in the panel selection throughout the process, including the selection of the chair, who is a former president of the IDSA, and the pronounced lack of community treating physicians.

We note with interest that IDSA separated out the only real area of contention among its panel, a 4-4 vote, and because it did not fit the required voting process, IDSA alleged that this was NOT a recommendation they needed to review, but only a statement in their Guidelines executive summary that the Attorney General asked them to review. It is a crucial statement on testing, the essence of which appears throughout the guidelines and is most often used by doctors and insurers to prevent patients receiving diagnosis and treatment. The panel's apparently improper first vote on this issue was uncovered by a FOIA, (freedom of information act) on the panel voting process. The vote was 4-4, not meeting the supermajority required to pass it, so they characterized the testing issue as a non recommendation, which they claim, does not require a supermajority.

The IDSA's empty “political” rhetoric, adherence to these guidelines is only voluntary, certainly we support clinical judgment, is belied by their statement “Based on current research for patients with non specific symptoms that may be seen in many illnesses...it would be a deviation from “best fit” [association between illness and likely diagnosis established by medical evidence] to attribute such symptoms to Lyme disease in the absence of more specific clinical features or laboratory results...All Lyme disease clinical findings including erythema migrans can be seen in diseases other than Lyme...It would thus be clinically imprudent to make this diagnosis of Lyme disease using these non specific findings alone.”

The IDSA's position at the onset of this investigation and settlement process has been that the Attorney General of Connecticut's investigation was interfering in medical practice rather than the guidelines formation process. To apply logic to their way of thinking, any changes in the Guidelines would admit wrongdoing on their part and set a precedent for future government actions in creation and development of their many guidelines. So instead, the IDSA panel upheld all the recommendations, failed to provide after each recommendation the specific references that were considered and used to justify upholding each recommendation (the resources are lumped at the end of the paper). We consider it striking that they provides lists of items that need to be considered in the “next” upgrade of their guidelines, thereby relieving themselves of responsibility of acknowledging that changes are needed to these current guidelines.



The IDSA admits to receiving a large volume of case reports & case series that attested to "PERCEIVED" clinical improvement with long term treatment. One would assume that in most cases, doctors were perceiving the improvement in patients, and thus their years of clinical judgment would carry significant weight. Yet the IDSA excluded all of that evidence as not justified. IDSA also discounted the controlled studies which did indicate improvement after long term antibiotics

Patients cannot wait for the entrenched medical establishment to address the problems with this disease. They need treatment and relief now. The ratification of these guidelines by IDSA becomes another nail in the coffin for those afflicted with Lyme disease. We call upon the Attorney General of Connecticut to examine the entire process to determine compliance with his stated requirements and to take further action should grounds be found to do so.

Pat Smith President [www.LymeDiseaseAssociation.org](http://www.LymeDiseaseAssociation.org)

## **HISTORICAL DATA ON THE LONE STAR AND LYME DISEASE 1991**

**Charlotte Observer** - September 22, 1991 - 5 METRO **LONE STAR TICKS MAY HOST LYME DISEASE N.C. CASES RISING AT CAMP LEJEUNE DESPITE LACK OF DEER TICKS** Lyme disease, which is spread by deer ticks in the Northeast and Midwest, may have a different host in North Carolina, say researchers at N.C. State University. The disease is occurring in increasing numbers at the Camp Lejeune military base even though no deer ticks are found there, said entomologist Dr. Charles Apperson and veterinary epidemiologist Dr. Jay Levine. In 1990, of the 90 cases reported in North Carolina, 54 were at Camp Lejeune.  
<http://news.google.com/newspapers?nid=1454&dat=19910921&id=gKUsAAAAIBAJ&sjid=gRQEAAAAIBAJ&pg=6984,1984181>

## **MINNESOTA BOARD OF MEDICAL PRACTICE WILL NOT INVESTIGATE DOCTORS TREATING CHRONIC LYME DISEASE FOR 5 YEARS**

**MN Board of Medical Practice Votes to Abstain from Investigating Lyme Doctors**  
Wednesday, March 24, 2010 The Minnesota Board of Medical Practice (MBMP) voted 8-6 to adopt a moratorium on investigating physicians who treat chronic Lyme with long-term antibiotics. Stating that the science for diagnosis and treatment of chronic Lyme is unsettled, the Board agreed to a 5-year period in which to allow science to answer unresolved questions. For the whole story see: <http://www.webwire.com/ViewPressRel.asp?aId=114700>

## **NEW STATE BUDGET PROPOSES CONSOLIDATION OF PUBLIC HEALTH PEST MANAGEMENT AND DHHS COMMUNICABLE DISEASE SECTION**

Another budget year has rolled around. The good news is that the tick money is in the proposed budget. This does not mean it will remain in so we have to be vigilant. We have asked the state officials that use the tick money to keep me apprised of the situation. We need to be ready for quick action if need be to support retaining the

funding. Last year the monies were initially cut and it took a lot of effort to get them reinstated.

From the state budget issued April 20, 2010.

**2. Consolidate Public Health Pest Management Program** It is recommended that the Public Health Pest Management Program be consolidated with the DHHS Epidemiology Communicable Disease Section as these programs share related goals of reducing the spread of disease through surveillance, educational programs and control activities. As part of the consolidation proposal, excess mosquito control grant funds are being reduced to historical expenditure levels. The two programs work closely on the control of mosquito, tick and animal-borne diseases. **Appropriation (\$303,199)**

On page 188 (206 of 248) [http://www.osbm.state.nc.us/files/pdf\\_files/2010\\_budget.pdf](http://www.osbm.state.nc.us/files/pdf_files/2010_budget.pdf)

## **INSECT SHIELD INFORMATION AND FORM FOR GETTING CLOTHES TREATED**

**What is Insect Shield? - from their website** [www.insectshield.com](http://www.insectshield.com)

Insect Shield Repellent Apparel and Insect Shield Repellent Gear are revolutionary products designed to provide long-lasting, effective and convenient personal insect protection... Recently, EPA has granted Insect Shield extended durability claims for its apparel registration, through 70 washings... (The) proprietary formulation of the insect repellent permethrin results in effective, odorless insect protection that lasts the expected lifetime of a garment.

**Which insects does Insect Shield repel?**

Insect Shield Repellent Apparel has been proven and registered to repel mosquitoes, ticks, ants, flies, chiggers, and midges (no-see-ums).

**To purchase Insect Shield clothing:**

[www.insectshield.com/work](http://www.insectshield.com/work)  
[www.insectshield.com/camp](http://www.insectshield.com/camp)

**Get a free treated bandana** if you become a Facebook fan. Simply go to:

[www.facebook.com/insectshield](http://www.facebook.com/insectshield)

And click on the "Like" button

Then email their mailing address to [marketing@insectshield.com](mailto:marketing@insectshield.com)

**Send off your own clothes for treatment:**

The form is attached. Pricing: 1 Item of Clothing -- \$9.95/piece 3-19 Items -- \$8.33/piece 20 or More Items -- \$7.95/piece plus shipping.

## **INSTITUTE OF MEDICINE IS CONDUCTING A SCIENTIFIC WORKSHOP ON THE STATE OF SCIENCE OF LYME DISEASE AND OTHER TBIs**

At the request of the NIH, National Institute of Allergy and Infectious Diseases, the IOM will convene a committee to plan and conduct a scientific workshop to assess the state of the science

of Lyme and other tick-borne diseases. The workshop will represent the broad spectrum of scientific views on Lyme disease and should provide a forum for public participation and input from individuals with Lyme disease as requested in congressional appropriations report language in House Committee Report 111-120 and Senate Committee Report 111-66. The product to be delivered will be a committee authored meeting summary that highlights workshop presentations and discussions. Please visit the project's web site at [www.iom.edu/tickbornediseases](http://www.iom.edu/tickbornediseases). On the web site is a subscription for the activity's list serv—please click on the “stay up to date button.”

## **UNPUBLISHED LETTER TO THE RALEIGH NEWS AND OBSERVER FOLLOWING THEIR LYME DISEASE HEADLINE, March 18, 2010**

Letter to Editor, N&O March 18, 2010

To the Editor:

Wake County has now been declared endemic for Lyme disease. The N&O's March 18 article on Wake's two cases of Lyme disease in persons who had not traveled out of the county for 30 days after their exposure will help assure that people in this state with signs and symptoms of Lyme disease get prompt and adequate treatment.

The state public health system is to be commended for their rigorous work in confirming the now 6 indigenous cases of Lyme disease. These cases met very strict criteria from the state and the Centers for Disease Control (CDC). While North Carolina has always had many reports of Lyme disease, the authorities tended to assume the patients' exposures were from out of state. One effect was to make it difficult for people with tick exposure and symptoms who had not traveled out of state to get treatment.

Several points that will assist the public in protecting themselves are notable:

- Tick season begins in March in the Piedmont, not April, and probably earlier on the coast.
- Many bites are from tiny ticks in their juvenile stage of development and are not noticed.
- Twenty to 40% of exposed people do *not* develop the characteristic expanding rash, known as *erythema migrans* (which may be solid or may clear in the middle). These people may not develop other noticeable symptoms within 30 days so the infection may become more entrenched and harder to diagnose and treat.
- Treatment for acute Lyme disease should be prompt and should never wait for test results. The standard "two-tiered" test is not 100% accurate and interpretation issues are complex.
- Embedded ticks should be removed with sharp-pointed tweezers so as to not squeeze the body. Ticks should be saved by taping them on an index card noting the date and the bite's location on the body.

## **LETTER TO THE EDITOR FROM TIC-NC REGARDING STARI PUBLISHED IN THE JOURNAL OF THE LOUISIANA MEDICAL SOCIETY**

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

## **CDC ARCHIVAL WEBSITE INFORMATION: HOW TO ACCESS**

The CDC web site is archived at <http://web.archive.org>, also known as the Internet Wayback Machine. It is a noble site and worth spending five minutes to learn how to search. Besides documents, they have feature films, music and full books available for free download. The archive is a non-government, non-profit organization with high values.

For the most part, you can access over a thousand updates to the CDC pages, by date, from this link: [http://web.archive.org/web/\\*/http://www.cdc.gov/](http://web.archive.org/web/*/http://www.cdc.gov/)

As an example, here is the first Lyme disease page that they have indexed from June 19, 1997: <http://web.archive.org/web/19970619004358/http://www.cdc.gov/ncidod/dvbid/lymeinfo.htm>

It is important to always watch the URL and verify the date when surfing inside archive.org. The date is indicated by the first numbers in the URL as yyyyymmdd as shown in red above.

## **BLACK-LEGGED TICKS SPREAD OUT FROM THE SOUTHEAST AFTER THE PLEISTOCENE ICE SHEETS RETREATED**

Uncoordinated Phylogeography Of *Borrelia burgdorferi* And Its Tick Vector, *Ixodes Scapularis*. Humphrey PT, Caporale DA, Brisson D. *Evolution*, published online before print, April 12, 2010. <http://dx.doi.org/10.1111/j.1558-5646.2010.01001.x>

### **ABSTRACT**

Vector-borne microbes necessarily co-occur with their hosts and vectors, but the degree to which they share common evolutionary or biogeographic histories remains unexplored. We examine the congruity of the evolutionary and biogeographic histories of the Lyme disease system, the most prevalent vector-borne disease in North America.

In the Eastern and Midwestern US, *Ixodes scapularis* ticks are the primary vectors of *Borrelia burgdorferi*, the bacterium that causes Lyme disease. Our phylogeographic and demographic analyses of the 16S mitochondrial rDNA suggest that *I. scapularis* populations originated from very few migrants from the Southeastern US that expanded rapidly in the Northeast and subsequently in the Midwest after the recession of the Pleistocene ice sheets....In the case of Lyme disease, movements of infected vertebrate hosts may play a larger role in the contemporary expansion and homogenization of the pathogen than the movement of tick vectors whose populations continue to bear the historical signature of climate-induced range shifts.

*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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