Announcements

• Register for the Epi-Tech Trainings:
  1. Log-on or Request log-on ID/password:
     https://tiny.army.mil/r/zB8A/CME
  2. Register for Epi-Tech Surveillance Training:
     https://tiny.army.mil/r/dVrGO/EpiTechFY14

  – Please enter your name/service and e-mail into the chat box to the left or email the disease epidemiology program at: USAPHC.Disease.Epidemiology@us.army.mil
  – You will receive a confirmation email within the next 48 hours with your attendance record

• Please mute your phones and DO NOT place us on hold. Press *6 to mute your phone.
Lyme Disease

Sponsored by
Navy and Marine Corps Public Health Center
U.S. Army Public Health Command
U.S. Air Force School of Aerospace Medicine
24 June 2014
0900, 1500, 1700 EST
Lyme Disease

Dr. Will Reeves
Entomologist
USAFSAM Epidemiology Consult Service
will.reeves@us.af.mil
The Basics
What are vectors?
What are hosts?
DoD INSECT REPELLENT SYSTEM

- PERMETHRIN-TREATED UNIFORM
- DEET OR PICARADIN APPLIED TO SKIN
- PROPERLY WORN UNIFORM
- PERMETHRIN-TREATED BED NET
- ANTI-MALARIAL MEDICATION AS PRESCRIBED

Use ALL elements for maximum protection!
Preventing Bites

[Image of a soldier in a military uniform, a can of insect repellent, and a soldier applying repellent to their clothes]

Sawyer Premium Insect Repellent Clothing & Gear

Repels & Kills Insects, Ticks, Mosquitoes, and Mange

Effective for 70 Hours

3.5 oz / 100 ml
Lyme disease: Global distribution

Disease is endemic or potentially endemic to 63 countries

- Not Endemic
- Sporadic
- Endemic

Click to view country-specific notes.
Fast Facts from the CDC

In 2012, 95% of Lyme disease cases were reported from 13 states:

Connecticut       New Jersey
Delaware           New York
Maine              Pennsylvania
Maryland           Vermont
Massachusetts      Virginia
Minnesota          Wisconsin
New Hampshire

Lyme disease is the most commonly reported vector-borne disease in the United States.

In 2012, it was the 7th most common Nationally Notifiable disease.

However, Lyme disease does not occur nationwide and is concentrated heavily in the Northeast and upper Midwest.
Vector: Deer or Black Legged Tick

Pathogen: *Borrelia* spp.
Larva 0.5 mm

Larvae and nymphs feed on small mammals, lizards and birds

Eggs

Adult 2.5 mm

Adult ticks feed on medium to large animals

Nymph 1.0 mm

Nymphs and adults feed on humans
Lyme Disease

Tick must feed for ~24 hours.

Symptoms begin 1 to 4 weeks after a tick bite.
• Red, expanding rash called erythema migrans (EM)
• Fatigue, chills, fever, headache, muscle and joint aches, and swollen lymph nodes
• Heart palpitations and dizziness due to changes in heartbeat
• Bell’s Palsy (Rare)
• Approximately 60% of patients have intermittent arthritis.
European Lyme Disease

There are several different bacteria *B. afzelii* and *B. garinii* that cause Lyme Disease in Europe. These cause different symptoms including more skin and joint problems.

What about tropical countries

Transmission has not been documented in the tropics. Lyme disease is rarely reported in returning travelers.
Post Treatment Lyme Disease

10-20% have symptoms months - years after treatment with antibiotics.

Including muscle and joint pain, cognitive and sleep disturbance, and fatigue.
How to Remove a Tick:

Use tweezers to grasp the tick as close to the skin's as possible.

Pull upward with steady, even pressure. If the mouth-parts to break off remove the mouth-parts with tweezers. If you are unable to remove the mouth leave it alone and let the skin heal.

After removing the tick, thoroughly clean the bite area with rubbing alcohol, an iodine scrub, or soap and water.
Patients treated with appropriate antibiotics in the early stages of Lyme disease usually recover rapidly and completely.

Antibiotics commonly used for oral treatment include doxycycline, amoxicillin, or cefuroxime axetil.

Patients with certain neurological or cardiac forms of illness may require intravenous treatment with drugs such as ceftriaxone or penicillin.
Reporting Cases to DRSi

2012 Armed Forces Reportable Medical Event Guidelines

• **Suspected**
  – Case of Erythema Migrans (EM), with no known exposure, and no laboratory evidence
  
  OR
  – Case w/ lab evidence of infection but no clinical signs

• **Probable**
  – Any other case of physician diagnosed Lyme disease w/ lab evidence of infection

• **Confirmed**
  – Case of EM w/ a known exposure
  
  OR
  – Case of EM w/ lab evidence but no known exposure
  
  OR
  – Case with at least one late manifestation that has lab confirmation
Summary

Ticks
Preventing Tick bites
Tick Removal
Disease Distribution
Signs and Symptoms
Treatments
Contact Information

**Air Force:**

USAFSAM – Epidemiology Consult Service
Email: episervices@wpafb.af.mil
COMM: (937) 938-3207; DSN: 798-3207

**Navy:** Contact your cognizant NEPMU

NEPMU2: COMM: (757) 950-6600; DSN: (312) 377-6600
Email: NEPMU2NorfolkThreatAssessment@med.navy.mil

NEPMU5: COMM: (619) 556-7070; DSN (312) 526-7070
Email: ThreatAssessment@med.navy.mil

NEPMU6: COMM: (808) 471-0237; DSN: (315) 471-0237
Email: NEPMU6ThreatAssessment@med.navy.mil

**Army:**

USAPHC – Disease Epidemiology Program
Aberdeen Proving Ground - MD
COMM: (410) 436-7605 DSN: 584-7605
Disease.epidemiology@amedd.army.mil