

What Are the Symptoms of Louse-Borne Typhus?

Symptoms start to appear 7 to 14 days after the initial infection with *R. prowazekii* and often include a sudden high fever (105oF or 40oC), severe headaches, chills, photophobia, confusion, vomiting, pain and stiffness in the muscles and joints. Four to five days after the onset of symptoms, the patient may exhibit a dark-red rash of elevated spots around the waist and shoulders. The rash may spread to the rest of the body except for the face, palms of the hands and soles of the feet. The course of the disease is rapid and the fever drops after about 12 to 14 days, followed by rapid recovery or death. Mortality without medical treatment varies, but may be as high as 50 to 70 percent in severe epidemics.

What Is Brill-Zinsser Disease?

Brill-Zinsser disease is a recurrent form of louse-borne typhus occurring many years or even decades after the initial infection. In the United States it is most commonly seen in those who were exposed to the *R. prowazekii* bacteria during World War II. The clinical course of the disease is similar to louse-borne typhus but is often milder and recovery is much faster. The skin rash is rarely seen. Diagnosis is made on the basis of a fever with unknown origin and a history of previous exposure to louse-borne typhus.

How Is Louse-Borne Typhus Diagnosed?

A blood test is the primary method used for diagnosis of *R. prowazekii*. Contact your preventive medicine personnel or your primary care physician about getting tested.

How is Louse-Borne Typhus Treated?

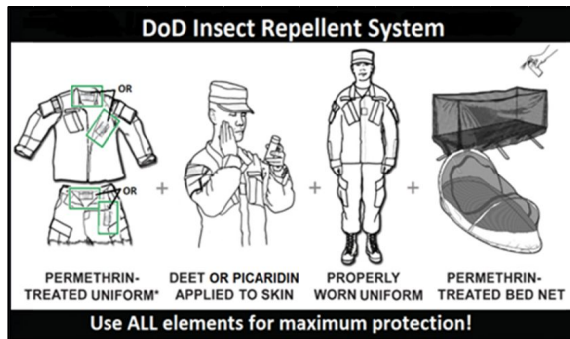
Treatment for the disease requires supportive care and the administration of appropriate antibiotics. Doxycycline is the drug of choice, however tetracycline, chloramphenicol and azithromycin are also effective for treating the disease. Currently, no licensed vaccines for the prevention of rickettsial infections are commercially available in the United States.




What Can Be Done to Control Infestations of Human Body Lice?

Thoroughly laundering infested clothes and rigorous personal hygiene can control body lice infestations. Wash infested clothing, bedding and personal items separately in hot water, 130o F or hotter, for at least 15 minutes. Items should then be dried in a clothes dryer on the "high heat" cycle, for at least 20 minutes to insure that body lice and their eggs are killed. Infested individuals should also take long, hot soapy showers to remove any remaining lice and to prevent re-infestation.

How Can I Protect Myself Against Body Lice That Transmit Louse-Borne Typhus?

Avoid sharing clothing or bedding materials. Periodically check your clothing for lice and their eggs. When practical, remove and wash clothing frequently. Regular bathing with antibacterial soaps can prevent bacterial infections. For optimum protection against body lice, soldiers should utilize the **DOD INSECT REPELLENT SYSTEM**. In addition to the proper wear of the military field uniform (sleeves rolled down, undershirt tucked into pants, pant cuffs tucked into boots), this system includes the concurrent use of both skin and clothing repellents:



-  Standard military skin repellent: 33% **DEET** lotion, long-acting formulation, one application lasts up to 12 hours or more, **NSN 6840-01-284-3982**.
-  Standard military clothing repellents: either IDA (impregnation kit), 40% **permethrin**, one application lasts the life of the uniform (approx. 50 washes), **NSN 6840-01-345-0237**; or aerosol spray, 0.5% **permethrin**, one application lasts through 5-6 washes, **NSN 6840-01-278-1336**. Factory permethrin-treated uniforms are also available via contract [Contact the Armed Forces Pest Management Board (AFPMB) for details, CM (301) 295-7476].
-  Flame-Resistant Army Combat Uniforms (FR ACU's) cannot be treated by service members with the standard military clothing repellent (permethrin). Use of other elements of the DOD Insect Repellent System should be emphasized to reduce soldier exposure to diseases transmitted by human body lice.

References:

- Armed Forces Pest Management Board**. Technical Guide No. 9 Delousing Procedures for the Control of Louse-Borne Disease During Contingency Operations. Available from: <http://www.afpmb.org/pubs/tims/TG6/TG6.pdf> [Accessed February 2008]
- Centers for Disease Control and Prevention, Division of Parasitic Diseases**. Body Lice Infestation Fact Sheet. November 2004. Available from: <http://wwwn.cdc.gov/travel/yellowBookCh4-Rickettsial.aspx> Accessed March 2008
- Hedges, S.A.** 1997. Lice, *In Mallis*. Handbook of Pest Control, 8th ed. Franzak & Foster Co., Cleveland, Ohio, pp. 731-745.
- Heymann, David L.** 2004 Control of Communicable Diseases Manual, 18th ed. American Public Health Association, Washington D.C., pp. 583-586.



Signs of Disease. Louse-borne typhus produces a dark-red rash of elevated spots several days after the initial infection. The rash may begin around the trunk and shoulders and spread to the other parts of the body. The above pictures show what the rash looks like on both light and dark skin.