



# Leishmaniasis

## ***Q. What is Leishmaniasis?***

**A.** Leishmaniasis (leash' ma NIGH' a sis) is caused by a parasite, *leishmania*, that is spread by the bite of infected sand flies. There are two forms of the disease that are native to Iraq and other parts of southwest Asia where American troops are deployed. Cutaneous leishmaniasis (CL) affects the skin and appears as mild to severe non-healing skin sores or lesions that can last months to years if left untreated. These sores may be permanently disfiguring. Visceral leishmaniasis (VL) affects the internal organs, primarily the liver and spleen. VL is a chronic disease and can be fatal if left untreated. Leishmaniasis is called by several different names including Kala-azar, Oriental sore, Delhi boil, espundia, and Baghdad boil. Leishmaniasis should not be confused with sand fly fever, which is a viral disease transmitted by sand flies.

## ***Q. How does a person get leishmaniasis?***

**A.** Transmission occurs through the bite of female sand flies. These flies are very small, about 1/3 the size of a mosquito, making them difficult to see. Generally, sand flies are most active in twilight, dusk, and during the evening and night-time hours. They are less active during the hottest time of the day although some species are opportunistic and will feed if disturbed. The sand fly acquires the infection by feeding on a reservoir host such as a dog, rodent, or person. Person-to-person transmission by blood transfusion and sexual contact has been reported, but is rare.

## ***Q. How common is leishmaniasis infection?***

**A.** There have been 484 total cutaneous cases reported among military members so far (23 in 2004), 1 visceral and 1 unspecified case (Source: Army Medical Surveillance Activity, through 21 April 04). The World Health Organization (WHO) reported 625 cases of cutaneous leishmaniasis in the most recent year (2001) among the 26 million citizens of Iraq, with a range of 625 to 8779 cases per year in the past 10 years. The most recent 2001 data also included 2893 cases of visceral leishmaniasis, with a range of 744 to 3886 per year in the past 10 years. The number of new cases of cutaneous leishmaniasis each year in the world is thought to be about 1.5 million. The number of new cases of visceral leishmaniasis is thought to be about 500,000.

## ***Q. What are the symptoms of leishmaniasis?***

**A.** Individuals with CL develop skin sores on exposed parts of the body such as the face, arms, and legs. These sores may appear within a few weeks (or as long as a few months) from the time the individual was bitten. These can change in size and appearance over time and may or may not be painful. VL appears within several months of being bitten. It is characterized by irregular bouts of fever, weakness, substantial weight loss, enlargement of the spleen and liver, and anemia. Sweating from fever is usually notable.

## ***Q. How is leishmaniasis diagnosed?***

**A.** Your health care provider needs to diagnose leishmaniasis. CL is diagnosed through microscopic identification of specimens from sores or lesions. Diagnosis of VL is made by culture of the organism from a biopsy specimen or aspirated material, or from the appearance of amastigotes (a life stage of the parasite) in stained smears from bone marrow, the spleen, the liver, lymph nodes, or blood.

## ***Q. What is the treatment for leishmaniasis?***

**A.** Leishmaniasis can be a serious disease. Skin sores caused by CL can heal by themselves but it can take up to several months or years. VL can be fatal if it is not treated. Currently, there is no vaccine or preventive drug against leishmaniasis. Your health care provider will determine whether drug treatment is necessary. The drugs used for treatment include pentavalent antimonials such as Pentostam or Glucantime. Second line drugs are amphotericin B and pentamidine; however, these are not used routinely because of toxicity.

## ***Q. What is the prognosis of infection with leishmaniasis?***

**A.** Cutaneous leishmaniasis is a self-limited disease. Self-healing usually occurs within 6 months, but skin scarring and changes in color can follow. With early treatment of visceral leishmaniasis, the cure rate is higher than 90%, although this is dependent on other medical factors as well. Lifelong immunity usually follows infection.

***Q. What can I do to reduce my risk of contracting leishmaniasis?***

**A.** The best way to prevent leishmaniasis is to protect yourself from sand fly bites. Follow these precautions:

- Limit outdoor activity at dusk and during the evening when possible, when the sand fly is most active. If possible, buildings should have window screens or other barriers to keep sand flies from entering. It is expected that improvements in living conditions will reduce the exposure to sandflies to some extent, and thus leishmaniasis infections.
- Avoid the bites of sand flies by using protective clothing. Wear a long-sleeved shirt, long pants, and socks; wear loose-fitting clothing to prevent sand fly bites through thin fabric. Follow proper wear of battle dress uniform (BDUs) which includes pants tucked into boots, sleeves down, undershirt tucked into pants.
- Use both skin and clothing repellents that have been approved by the United States Environmental Protection Agency (EPA). They are safe and effective. For your skin, use a product that contains **DEET** (chemical name, N,N-diethyl-meta-toluamide). Standard military skin repellent: 33% **DEET** lotion, long acting formulation, one application is effective for up to 12 hours, **NSN 6840-01-284-3982**.
  - Apply **DEET** lightly and evenly to exposed skin; do not use underneath clothing. Avoid contact with eyes, lips, and broken or irritated skin.
  - To apply to your face, first dispense a small amount of **DEET** onto your hands and then carefully spread a thin layer.
- For your clothing, use a product that contains **permethrin**. **Permethrin** should be used only on clothing, never on skin. When using any insect repellent, always FOLLOW LABEL DIRECTIONS. Do not inhale aerosol formulations. Standard military clothing repellents, either: aerosol spray, 0.5% **permethrin**, one application remains effective through 5-6 washes, **NSN 6840-01-278-1336**; or impregnation kit, 40% **permethrin**, one application remains effective for the life of the uniform (at least 50 washes), **NSN 6840-01-345-0237**. Do not dry clean treated BDU's. This will remove the permethrin from the fabric.
- Use bed net while sleeping; **NSN 7210-00-266-9736 (Netting)**, **NSN 7210-00-267-5641 (Poles)**. Because sand flies are small enough to pass through the mesh of the standard bed net, permethrin (aerosol spray) should be applied to netting. There is enough permethrin in one spray can to treat one uniform and a bed net.
- Although effective to a certain extent, sandfly control is usually impracticable in preventing the disease comprehensively.
- Animal control—dogs and other canines can serve as a reservoir of infection, especially for visceral leishmaniasis. Zoonotic (animal transmitted) cutaneous leishmaniasis is the dominant form in Iraq. However, the most effective preventive method is use of the DoD repellent system.

***Q. Where can I get more information on Leishmaniasis?***

**A.** Contact the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM), Entomological Sciences Program, Aberdeen Proving Ground, Maryland 21010-5403: DSN 584-3613, CM (410) 436-3613: FAX – 2037; <http://chppmwww.apgea.army.mil/>

**References:**

**Beneson, A.S.** 1995. Control of Communicable Diseases in Man, 16th ed, American Public Health Association, Washington, DC. 577pp.

**Centers for Disease Control and Prevention**, Division of Parasitic Diseases, “Fact sheet on *Leishmania* Infection,” April 2004. [http://www.cdc.gov/ncidod/dpd/parasites/leishmania/factsht\\_leishmania.htm](http://www.cdc.gov/ncidod/dpd/parasites/leishmania/factsht_leishmania.htm)

**World Health Organization**, Communicable Disease Surveillance and Response, “Leishmaniasis,” 2001. <http://www.who.int/emc/diseases/leish/leisdis1.html>

The information in this fact sheet is for information only and is not meant to be used for self-diagnosis or as a substitute for consultation with a health care provider.

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Commander, U. S. Army Center for Health Promotion and Preventive Medicine – Europe  
ATTN: MCHB-AE-ME, CMR-402, APO AE 09180  
PHONE: (DSN) 486-8951 / FAX: (DSN) 486-8938  
Website: <http://www.chppmeur.healthcare.hqsareur.army.mil/>  
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