

Leishmaniasis Prevention

For Servicemembers and Their Families

Important Facts

- Leishmaniasis is a serious, but preventable health threat to some deployed U.S. servicemembers.
- The Department of Defense (DoD) Insect Repellent System is the safest, most effective way to protect against biting insects that may carry disease such as leishmaniasis.
- No vaccine or preventive drug is currently available for leishmaniasis; however, highly effective treatment is available.
- If you are experiencing symptoms as described below, you should seek medical attention and state that you have been deployed in an area where leishmaniasis occurs.

What is leishmaniasis?

Leishmaniasis (leash' ma NIGH' a sis) is a parasitic disease transmitted by infected sand flies most commonly causing skin sores (cutaneous form) or affecting the internal organs (visceral form). A rarer form (mucocutaneous) affects the linings of the nose, lips, mouth, and throat and generally occurs after the skin disease has begun. Mucocutaneous leishmaniasis is mainly found in Central and South America.

How does a person get leishmaniasis?

Leishmaniasis is spread by the bite of sand flies that carry the parasite. Sand flies are very small insects and may be hard to see. They are only about one-third the size of typical mosquitoes. Sand flies usually feed at dusk and into the evening; however, some will feed during the day if they are disturbed. Sand flies become infected by feeding on infected animals, such as dogs and rodents, and even infected people. Person-to-person transmission by blood transfusion and sexual contact has been reported, but is rare.

Where can exposure occur?

Leishmaniasis is particularly a problem in some parts of Asia, the Middle East, North Africa, and South America.

What are the signs and symptoms of cutaneous leishmaniasis (skin form)?

People who get the skin form (cutaneous) develop one or more sores on the skin several weeks or months after the parasite enters the body where the sand fly bit the skin. These sores may be painful and may form scabs. The sores can change their



Source: USACHPPM

Sand Fly Feeding on Human Skin

appearance over time, and may develop the shape of small "volcanoes" with a raised edge and central crater. Sometimes, people have swollen lymph glands near the sores. If untreated, the sores can last for years and cause permanent, disfiguring scars.

What are the signs and symptoms of visceral leishmaniasis (internal form)?

People who get the internal form (visceral) may develop signs and symptoms such as fever that comes and goes, enlargement of the spleen and liver, reduced number of red and white blood cells, and progressive weight loss and weakness over months or years. If untreated, internal leishmaniasis can cause serious health problems and can be life threatening to people with other serious illnesses or weakened immune systems.



Leishmaniasis Skin Sores

Sources: Walter Reed Army Medical Center & USACHPPM

What is the best way to protect servicemembers from getting leishmaniasis?

The best and safest way to prevent leishmaniasis and sand fly bites is to use the DoD Insect Repellent System. This system is required by DoD Policy.



Visit the Deployment Health and Family Readiness Library: <http://deploymenthealthlibrary.fhp.osd.mil>

A collaborative effort between the Air Force Institute for Operational Health, the Deployment Health Clinical Center, the Deployment Health Support Directorate, the Navy Environmental Health Center, the U.S. Army Center for Health Promotion and Preventive Medicine, and the OUSD(P&R)/Military Family and Community Policy

What is the DoD Insect Repellent System?

The DoD Insect Repellent System is a multi-step approach that uses permethrin, which is applied only to clothing, and DEET, which is applied to exposed skin. When combined with other preventive measures such as avoiding insects and using permethrin-treated bed nets, this system provides maximum, safe protection from bites by insects and other arthropods such as ticks.

What is Permethrin?

Permethrin kills or repels most insects (and other arthropods such as ticks) upon contact on the uniform fabric and bed nets and is the most important means of protection. Do **not** apply permethrin to skin, undergarments, or uniform cap.

What is DEET?

DEET (chemical name, N,N-diethyl-meta-toluamide) is the most effective repellent against insects. Apply DEET to uncovered/exposed skin and under the ends of sleeves and pant legs. DEET can be used with sunscreen, but it may reduce the duration of effectiveness of the sunscreen. To minimize this effect, apply sunscreen approximately 30 minutes to 1 hour prior to applying the DEET so that the sunscreen has time to penetrate and bind to the skin first. Sunscreen does not reduce the effectiveness of the DEET.

The DoD Insect Repellent System Steps:

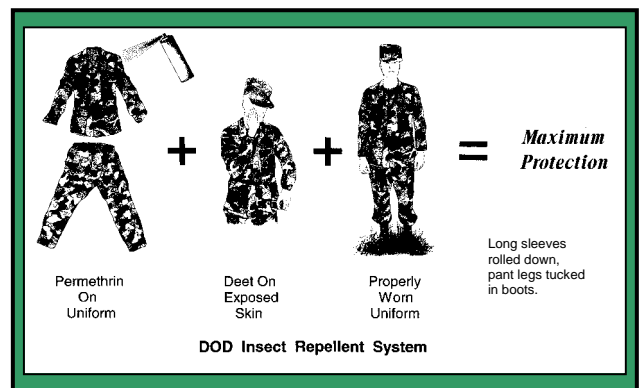
(1) *Wear permethrin treated uniforms.* If not using uniforms pre-treated by the manufacturer with permethrin, treat uniforms (except for Nomex uniforms such as flight suits) with permethrin clothing repellent and allow them to dry **BEFORE** putting them on. Do **not** treat pre-treated uniforms. Two self-treatment options are available. The first option is to use the Impregnation Kit (NSN 6840-01-345-0237) to treat one uniform. The treatment lasts for the life of the uniform (at least 50 washes). The second option is to use the aerosol can of permethrin (NSN 6840-01-278-1336). Each can treats one uniform, and the treatment lasts through 5-6 washes.

(2) *Wear the uniform properly.* Roll down shirt sleeves. Tuck pants into boots with the blousing cords drawn tight. Tuck undershirt into pants. These measures will help protect the skin from biting insects (such as sand flies).

(3) *Apply DEET to exposed skin.* Apply a thin coat of long-lasting DEET insect repellent lotion (NSN 6840-01-284-3982) to all EXPOSED skin. One application lasts for up to 12 hours, depending on the climate and how much you perspire. Follow all label directions.

Other Methods for Protection against Insects

- Avoid insects. If possible, do not go outside during the times that insects most frequently feed (bite); in the case of mosquitoes and sand flies the risk is highest between dusk to dawn.
- Sleep/rest under a permethrin treated bed net.
- Do not use after-shave lotion, cologne, perfume, or scented deodorants/soaps while in the field. The odors may attract insects.
- Wash and inspect your body for insects and their bites daily, or as often as the tactical situation permits. Wash your uniform to remove insects and their eggs.



Where Do I Get More Information?

Air Force Institute for Operational Health (AFIOH)
Phone: (888) 232-3764
<http://www.brooks.af.mil/afioh/>

DOD Deployment Health Support Directorate (DHSD)
Phone: (800) 497-6261
<http://www.deploymentlink.osd.mil>

U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM)
Phone: (800) 222-9698
<http://chppm-www.apgea.army.mil>

DOD Deployment Health Clinical Center (DHCC)
Phone: (866) 559-1627
<http://www.pdhealth.mil/>

Navy Environmental Health Center (NEHC)
Phone: (757) 953-0700
<http://www-nehc.med.navy.mil>

Armed Forces Pest Management Board
Phone: (301) 295-7476
<http://www.afpmb.org>



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