

# Leishmaniasis

## Traveler Summary

### Key Points

- Leishmaniasis, a parasitic disease that occurs in tropical and subtropical countries worldwide, is acquired through the bite of infected sand flies.
- Risk is generally low but increases for travelers who engage in extensive outdoor activities in affected areas.
- Symptoms mainly include disfiguring skin ulcers or nodules. Uncommonly, chronic fever and weight loss occur.
- Consequences of infection include disfiguring scars and, uncommonly, a late relapse with destruction of the nose and face occurs. The clinical form with fever may result in death.
- Prevention includes wearing long sleeves and long pants as well as observing personal protective measures against sand fly bites.
- No vaccine or preventive drugs are available.

### Introduction

Leishmaniasis is a parasitic disease occurring in many tropical and subtropical countries worldwide and is acquired through the bite of infected sand flies. The parasites causing leishmaniasis may live and multiply in humans, domestic or stray dogs, and rodents. Multiple strains of the parasite exist, each of which may result in different disease manifestations. Cutaneous leishmaniasis is the most common among travelers; mucosal leishmaniasis may occur due to late spread of certain forms of cutaneous leishmaniasis; and visceral leishmaniasis is rarely found among travelers.

Domestic and stray dogs are the reservoir of visceral leishmaniasis in the Mediterranean basin, the Middle East, central Asia, and South America. Humans are the only reservoir of visceral leishmaniasis in eastern Africa and India. Desert rodents (gerbils) are the reservoir of rural cutaneous leishmaniasis in most of the Eastern Hemisphere, whereas humans are the reservoir in urban areas.

### Risk Areas

Leishmaniasis is found in more than 90 countries on 4 continents (except Australasia). Risk for cutaneous leishmaniasis is greatest for travelers going to Afghanistan, Algeria, Brazil, Iran, Iraq, Lebanon, Peru, Saudi Arabia, and Syria. Mucosal leishmaniasis has been reported in travelers going to certain regions of Bolivia, Peru, and Brazil. More than 90% of worldwide cases of visceral leishmaniasis are acquired in Bihar State in India, Bangladesh, Nepal, South Sudan, and northeastern Brazil.

Sand flies do not fly far during their life, thus transmission may be restricted to specific locales and seasons in an affected country. In temperate countries, transmission is restricted to summer months. In the tropics and subtropics, transmission may occur throughout the year.

### Transmission

Leishmaniasis is mainly transmitted through the bite of female sand flies, which become infected when they ingest the parasite with a blood meal from an infected animal or human host. Most sand flies bite from dusk to dawn. In certain regions, sand flies may rest in the cracks of human and animal dwellings and in rodent burrows and tend to be more active at night. In other areas, they may be found in leaf litter and in human or animal dwellings and may be active both day and night. Leishmaniasis may also be transmitted via blood or laboratory transmission or from a mother to her unborn child.

### Risk Factors

Risk of infection depends on the likelihood of contact with an infected sand fly, although cases have been reported in travelers exposed for only a single day in affected areas.

Risk of acquiring cutaneous leishmaniasis is increased in travelers with increased outdoor skin exposure who are engaged in bird watching and eco-tourism in forested areas and persons who camp out at night, stay in unscreened shelters, or walk in leaf litter.

Risk of acquiring mucosal leishmaniasis is increased in travelers going to Madidi National Park in Bolivia and backpackers going to Brazil.

Risk of acquiring visceral leishmaniasis is increased in travelers going to the Mediterranean basin (notably Spain) during summer holidays, where many dogs are infected and sand flies may be locally common. Persons with HIV infection, solid-organ transplants, hematologic malignancies, or using medications that may weaken the immune system have an increased risk of acquiring visceral leishmaniasis.

## Symptoms

Symptoms and incubation periods are extremely variable. For cutaneous leishmaniasis, the incubation period averages several weeks, whereas for visceral leishmaniasis, the average incubation period is 3 to 9 months. Mucosal leishmaniasis develops from months to a few years after cutaneous sores have healed.

Cutaneous leishmaniasis begins with 1 or more sores (typically measuring 2 to 5 cm [0.8-2 in] in diameter) that evolve slowly from papules (bumps) to nodules (lumps) to sores with a central depression (crater) and hardened, raised borders. Ulcers usually occur on hands, arms, legs, and facial areas exposed to sand flies. Less typically, lumps may occur without formation of sores.

Mucosal leishmaniasis may develop after the original skin ulcers of some forms of cutaneous leishmaniasis have been treated or have healed. Symptoms include nasal obstruction, discharge, nosebleed, and ulcers of the nose, mouth, or throat.

Visceral leishmaniasis may develop after an incubation period of 3 to 9 months, although incubations as short as 10 days or as long as 34 months have been reported in travelers returning from affected areas. Visceral leishmaniasis may occur as a subclinical or an opportunistic infection in persons coinfecting with HIV. Symptoms include abdominal swelling and discomfort, weakness, weight loss, cough, diarrhea, and skin darkening.

## Consequences of Infection

Cutaneous leishmaniasis may result in skin lesions, which mostly resolve over a period of 2 years (even without treatment), leaving behind indented scars that may be disfiguring.

Mucosal leishmaniasis may result in inflammation and perforation of the nasal septum (cartilage separating the nostrils), with or without involvement of the soft palate, the skin of the nose, the back of the throat, the voice box, or the inner lining of the cheeks. Rarely, destructive facial sores may occur.

Visceral leishmaniasis may result in a hugely distended abdomen, swollen feet, and dry scaly skin with bleeding. In patients with HIV coinfection, cutaneous and mucosal ulcers may also occur.

## When to Seek Medical Attention

Persons who develop skin ulcers or nodules that do not heal during travel or after returning from affected areas should seek medical attention.

## Prevention

### Nonvaccine

Personal protective measures are the main prevention strategy. Apply repellent vigilantly during peak biting activity times. Treat outer clothing, boots, tents, and sleeping bag liners with permethrin (or other pyrethroid) when traveling in a very high-risk area for leishmaniasis. Use screens of sufficiently fine mesh and impregnated bed nets, long sleeves and trousers or chadors (robes) to keep sand flies out whenever possible. However, because of the vector's tiny size, untreated screens and bed nets are only partially protective. See *Insect Precautions*.