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## What is leishmaniasis?

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**Abstract.** Leishmaniasis is a parasitic disease that can cause painful sores to cover one's body. It is found in parts of the tropics, subtropics, and southern Europe. Leishmaniasis is caused by infection with a complex of protozoan organisms, *Leishmania spp.*, which are spread by the bite of infected phlebotomine sand flies (Diptera: Psychodidae). There are several different forms of leishmaniasis in people. The most common are cutaneous and visceral. The cutaneous type causes skin sores. The visceral type affects internal organs like the spleen, liver, and sometimes bone marrow.

**Keywords:** Protozoa, sand fly

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### Background

The first case of visceral leishmaniasis in Brazil occurred in 1913 (Da Silva 2014). It was recorded in Porto Esperança, Mato Grosso do Sul. After that in the 1930s, a major investigation in the country showed forty one confirmed cases of visceral leishmaniasis (Da Silva 2014). They confirmed these cases from autopsies of suspected cases of yellow fever. Leishmaniasis is found in parts of approximately 88 countries. Most of these countries are in the tropics and subtropics (Da Silva 2014). It is very unlikely that you would get leishmaniasis in the United States, but it is possible (CDC 2015a). According to the CDC, the only reported cases in the United States have been cutaneous leishmaniasis in some areas of Texas, where the sand fly vector is present (CDC 2015a).

### Introduction

Leishmaniasis is a parasitic disease caused by the bite of an infected female sand fly (Diptera: Psychodidae). The sand fly is a small, brownish, long-legged fly with a narrow body (Mann 2007). The sand fly is so small it is about one-third the size of a mosquito. The sand fly also flies noiselessly at night making it hard to notice its bite. The life cycle of leishmaniasis with the sand fly is included below (Figure 1). The parasite is found in the blood of the host. Leishmaniasis has several different forms such as, cutaneous leishmaniasis, mucocutaneous leishmaniasis, and visceral leishmaniasis. The most common type of leishmaniasis is cutaneous leishmaniasis. This causes small sores to form on the skin. Depending on where the bite is on the body, the person may have a single lesion or many lesions. Sores heal slowly anywhere from months to years after infection and leave scars (CDC 2015a). People with visceral leishmaniasis usually have fever, weight loss, and an enlarged spleen and liver. Severe cases of visceral leishmaniasis can be fatal if left untreated (CDC 2015a, CDC 2015b).

### One Health

One Health is defined as the collaborative effort of working locally, nationally, and globally to attain optimal health for people, animals and the environment (AVMA 2015). Leishmaniasis is found many places globally and has the potential to spread many more places. One of the ways this parasite spreads is through travelers. One of the many reasons outbreaks have occurred in Texas is leishmania infected soldiers returning from overseas (Chedville 2015). With the ever changing climate it is possible for sand flies to spread to other regions in the world where the sand fly can thrive. This can happen to other places

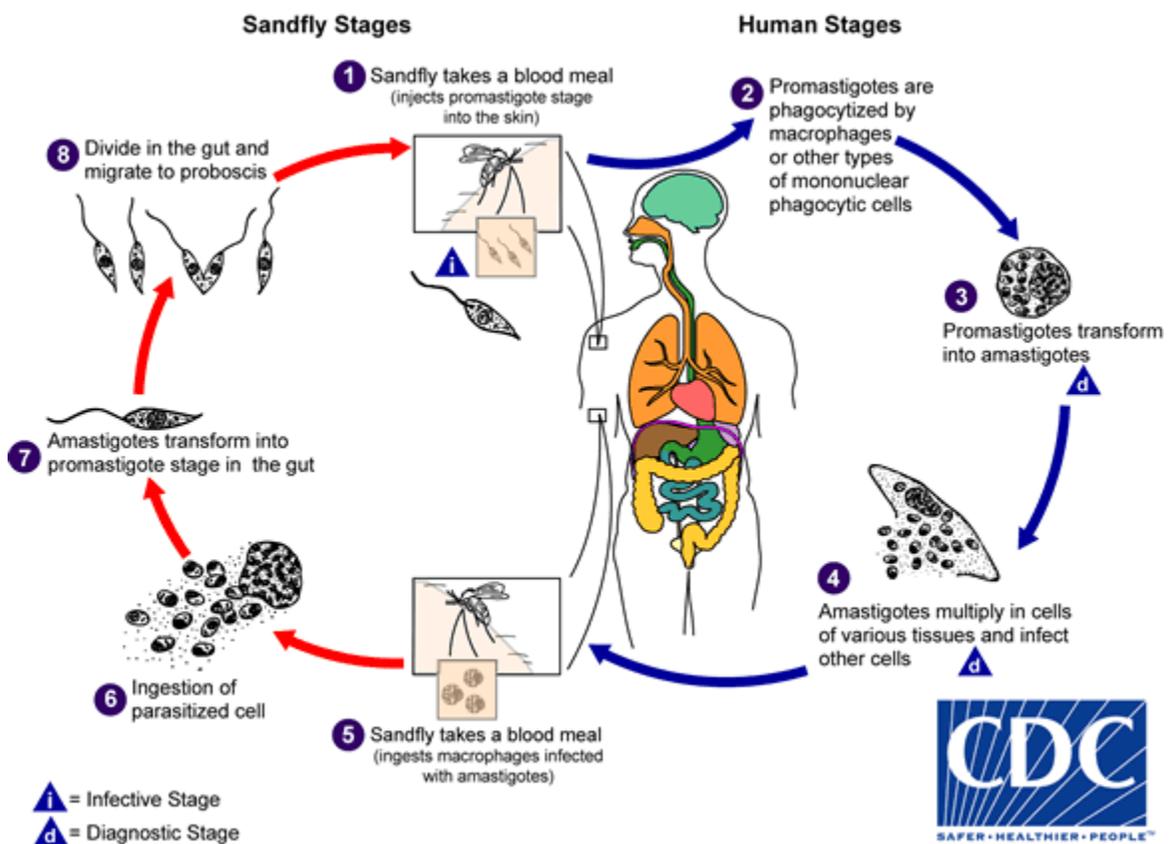
other than to the United States. Although there are no vaccines, people can take preventative measures to prevent from getting leishmaniasis including wearing long-sleeved clothing to expose less skin and using insecticide-impregnated bed nets (USNLM 2015).

**Epidemiology**

Leishmaniasis currently threatens 350 million people around the world (CDC 2015c). It is estimated that 12 million people are currently suffering from the disease (CDC 2015c). It is considered endemic in 88 countries ranging across all four continents. Within Africa, cases are most common in the eastern and northern regions, with sporadic incidence elsewhere. It is found in both rural and urban regions (Figures 2 and 3) (CDC 2015c).

**Conclusions**

Leishmaniasis is a parasitic disease that affects people worldwide. There are a few different types of this disease. Leishmaniasis can be a silent infection or cause symptoms that are very painful. There are currently no vaccines for leishmaniasis and the only effective way to keep from getting the parasite is to take preventative measures to keep from getting bitten by an infected sand fly (Nettleman 2015).



**Figure 1.** Life cycle of Leishmaniasis



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