



Lymphatic Filariasis Disease

The Global Alliance to Eliminate Lymphatic Filariasis

Infectious Agents

Lymphatic filariasis is a parasitic disease caused by microscopic, thread-like worms: *Wuchereria bancrofti*, *Brugia malayi*, and *Brugia timori*.

Occurrence

Lymphatic filariasis affects over 120 million people in more than 80 countries. *W. bancrofti* is found in most of the warm humid regions of the world, including parts of Latin America, Africa, Asia and the Pacific Islands. *B. malayi* occurs in southeast Asia and rural southwest India. *B. timori* is endemic only in islands in southeast Indonesia.

Reservoir

Humans who are infected with microfilariae in their bloodstream are the reservoir for *W. bancrofti*, *B. timori*, and the periodic form of *B. malayi*.

Transmission

Transmission occurs through the bite of an infected mosquito. Common vectors for *W. bancrofti* include: *Culex quinquefasciatus*, *Anopheles gambiae*, *An. funestus*, and *Aedes polynesiensis*. Species of *Mansonia*, *Anopheles* and *Aedes* transmit *B. malayi*. *B. timori* is transmitted by *An. barbirostris*. Ingested microfilariae penetrate the gut wall of the female mosquito and develop in the thoracic muscles into larvae that then migrate to the proboscis. When the mosquito feeds, the larvae emerge and enter the punctured skin following the mosquito bite.

Symptoms¹

There is a wide spectrum of clinical presentations of lymphatic filariasis in endemic areas:

- Asymptomatic with microfilaremia
- Acute recurrent filarial fever, lymphadenitis, and retrograde lymphadenitis with or without microfilaremia
- Chronic signs of hydrocoele or chyluria or lymphoedema or elephantiasis who have low-level or undetectable microfilaremia
- Tropical pulmonary eosinophilia syndrome

Prevention

Prevention first requires educating people in endemic communities on the mode of transmission of LF and methods of mosquito control. Creating better housing conditions (including screening), better sanitation, and eliminating mosquito breeding sites are all long-term methods that help prevent transmission of LF².

Prevention also includes giving entire communities medicine that kills the microfilariae. Currently, dual-drug regimens, of albendazole and either diethylcarbamazine (DEC) or Mectizan® (generic name: ivermectin), are used in community-wide mass drug administration efforts. These drugs are given annually for at least five years. Salt fortified with DEC can also be used for 1-2 years to interrupt transmission.

¹ Addiss DG and G Dreyer. (2000) Treatment of Lymphatic Filariasis. IN: Lymphatic Filariasis. TB Nutman, Ed. Imperial College Press: London.

² Chin J, ed. (2000) Control of Communicable Diseases Manual, 17th edition. APHA: Washington DC.