



Life Cycle of *Wuchereria bancrofti*

The Global Alliance to Eliminate Lymphatic Filariasis

Picture 1:

Female mosquitoes bite infected humans and pick up *Wuchereria bancrofti* microfilariae (mf) that is circulating in the blood. *Culex quinquefasciatus*, *Anopheles gambiae*, *Anopheles funestus*, and *Aedes polynesiensis* are the most common species of mosquitoes that transmit *Wuchereria bancrofti*.

Picture 2:

The microfilariae mature within the mosquito for 2 weeks, developing from stage L1 to stage L3. They pass into the mosquito's stomach, penetrate the gut wall and enter the body cavity. In the thoracic muscles, the stage L1 microfilariae molt twice, emerging as stage L3 microfilariae. These infective stage L3 microfilariae migrate to the mosquito's mouthpiece.

Picture 3:

The stage L3 microfilariae enter the human through the puncture site in the skin when the mosquito takes its second blood meal. In the span of one year, the microfilariae migrate to the lymphatic system, mature into adult worms, mate and produce more microfilariae.

Picture 4:

The adult worms live in the vessels of the lymphatic system, especially in the legs, arms, scrotum and breasts. They cause the vessels to dilate so that the lymph fluid moves slowly and ineffectively. When bacteria build up and can not be removed, the vessels can become inflamed.

Picture 5:

Clinical presentations of lymphedema disease vary. Half of people infected are asymptomatic. Acute conditions include fever, inflammatory episodes, lymphangitis and tropical pulmonary eosinophilia syndrome. Chronic conditions include lymphoedema, hydrocoele or chyluria.

Picture 6:

Adult worms live for 4-6 years and produce millions of microfilariae. These microfilariae are small larvae that are released in the lymph and find their way into blood circulation via the thoracic duct.

Picture 7:

Microfilariae are sheathed, circulate in the peripheral blood, and show marked periodicity that corresponds to the biting habits of the mosquito vector. In most areas with *W. bancrofti*, periodicity is nocturnal with the highest concentrations of microfilariae in the blood happening around midnight.

*From "Elimination of Lymphatic Filariasis: An Interactive Guide for Programme Managers" CD-ROM, The Wellcome Trust Publishing Group – International Health.