

Lymphatic Filariasis: Elimination in the Americas



The Burden of Lymphatic Filariasis (LF)

To date, close to 700 million people in some of the poorest areas globally have received treatment to prevent one of the world's most incapacitating diseases, lymphatic filariasis.

Lymphatic filariasis (LF) is a disabling parasitic disease caused by microscopic worms that are spread from person-to-person by the bite of an infected mosquito. The adult worms live in the human lymphatic system and can cause lymphedema (swelling) affecting the legs, arms, or breasts. They can also cause hydrocele (severe fluid accumulation) affecting the genitalia of men. Chronic manifestations of lymphatic filariasis, which usually take place years after initial infection, can cause pain, severe and irreversible disfigurement, and stigmatization.

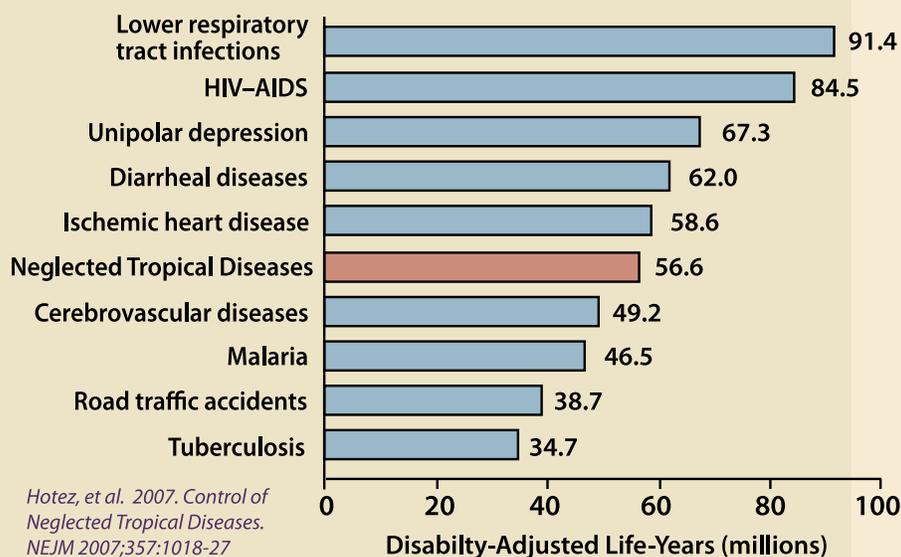
Lymphatic filariasis is one of the world's neglected tropical diseases (NTDs), a group of infectious diseases affecting more than 1 billion people that is responsible for tremendous suffering and economic loss. LF is recognized as one of the most disabling and economically costly NTDs, as infection with the disease can lead to lower productivity and inability to work.

Over 120 million persons are infected with LF, a disease that can be eliminated

In 2000, the World Health Organization launched The Global Programme to Eliminate Lymphatic Filariasis, with a target elimination date of 2020. This initiative is driven by a two-fold strategy to interrupt the spread of infection and reduce the suffering of persons already infected. These efforts to interrupt transmission and improve disease management ensure that future generations will not suffer the same disability.

Infected persons can take a yearly dose of the medications albendazole plus either ivermectin or diethylcarbamazine (DEC) that kills the worms circulating in the blood. These medications, which are readily available through donations made by Merck, GlaxoSmithKline, and Eisai are distributed to the entire at-risk population through mass drug administration (MDA). **Within the first 9 years of the worldwide elimination program, 2.8 billion treatments for LF were delivered to more than 800 million people in 53 countries** Although drug treatment may not reverse the symptoms of LF, better disease management, such as properly washing affected limbs, can improve a patient's condition and prevent the progression of symptoms. Patients can carry out many of these activities with little training. Self-management to reduce suffering caused by LF includes regular washing and elevation of affected limbs, in addition to exercise. Surgery can cure hydrocele.

The 10 Leading Causes of Life-Years Lost to Disability and Premature Death



Lymphatic Filariasis in the Americas



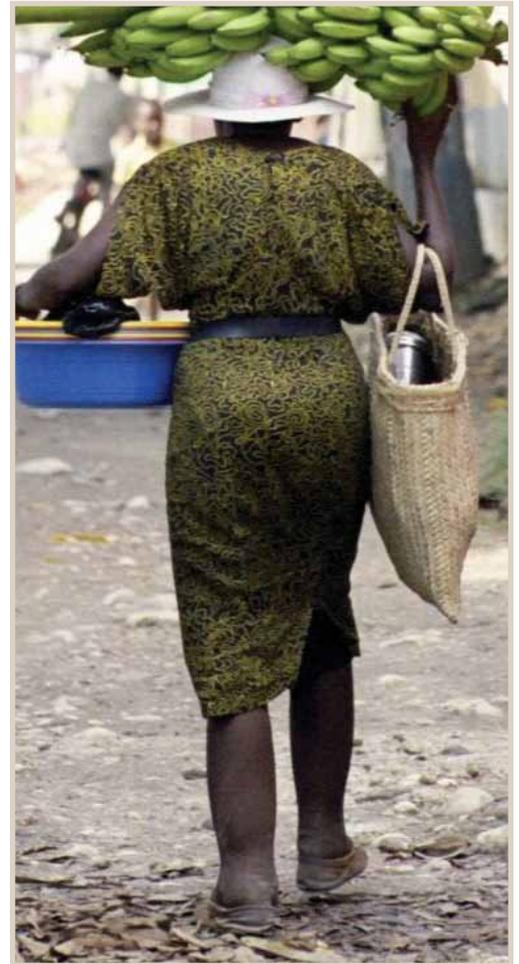
Interruption of LF transmission has been successful in Costa Rica, Suriname, and Trinidad and Tobago.

In the Americas, 11.3 million persons are at-risk for acquiring the disease. Transmission has been interrupted in Costa Rica, Suriname, and Trinidad and Tobago through focused public health efforts bringing treatment to affected communities. Currently, there is active transmission in only four countries in the Americas: Brazil, the Dominican Republic, Guyana, and Haiti. As of late 2009, nearly 5 million persons living in the Americas have received MDA.

Notable Achievements in the Americas

Although LF remains a public health problem in Brazil, the Dominican Republic, Guyana, and Haiti, much progress has been made toward elimination of the disease.

- Brazil has eliminated transmission in several areas
- Surveys carried out in the Dominican Republic that monitor children for new LF infection suggest that transmission has been interrupted in the largest endemic area
- MDA treatment is expanding in Haiti
 - 4.5 million of the 8.6 million Haitians at-risk for LF have received the benefit of annual treatment
 - 3 million Haitians have been treated since the January 2010 earthquake
- Disease management programs are operating in all four endemic countries



The areas in red indicate the geographic distribution of lymphatic filariasis.

CDC's Response to Combat Lymphatic Filariasis in the Americas

In-country Support

In the Americas, CDC and its partners work alongside ministries of health to offer advice and expert consultation. Additionally, CDC and partner organizations develop monitoring and evaluation strategies and provide countries with technical support, as needed. These organizations also work to carry out operational research and translate research into practice.

Operational Research

CDC's operational research to improve programs includes work to understand compliance, transmission dynamics, and strategies to accelerate elimination. The following publications are recommended for further information:

- Addiss DG, Louis-Charles J, Roberts J, LeConte F, Wendt JM, et al. 2010. Feasibility and effectiveness of basic lymphedema management in Leogane, Haiti, an area endemic for Bancroftian filariasis. *PLoS Negl Trop Dis*. April 20; 4(4): e668
- Boyd A et al. 2010. A community-based study of factors associated with continuing transmission of lymphatic filariasis in Leogane, Haiti. *PLoS Negl Trop Dis*. Mar 23;4(3):e640
- Grady CA et al. 2007. Endpoints for lymphatic filariasis programs. *Emerg Infect Dis*. April;13(4):608-10

Collaborations and Partnerships to Promote LF Elimination

CDC has built a number of successful partnerships with the following organizations:

- The Bill & Melinda Gates Foundation
- CBM International
- Eisai
- GlaxoSmithKline
- IMA World Health
- Inter-American Development Bank
- Merck
- Pan American Health Organization
- RTI International
- The Task Force for Global Health
- University of Notre Dame
- United States Agency for International Development (USAID)

Future Direction

CDC and its team of partners are advancing elimination of LF from the Americas by:

- Eliminating LF in Haiti by 2016
- Developing tools and strategies to detect areas where transmission still exists in Haiti and Guyana
- Utilizing mass media outlets in Haiti and Guyana to promote a national mobilization strategy that supports MDA programs
- Training workers to administer MDA in Haiti and Guyana
- Distributing MDA to 100% of the geographic regions of Haiti and Guyana
- Evaluating the progress of MDA in Haiti and Guyana
- Developing a surveillance strategy in Haiti and the Dominican Republic

For more information on lymphatic filariasis, please visit
www.cdc.gov/parasites/lymphaticfilariasis
800-CDC-INFO (800-232-4636) • TTY: 888-232-6348