



Hawaii State Department of Health

Disease Investigation Branch

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Malaria

What is malaria?

Malaria is a serious mosquito-borne disease caused by a parasite. It is transmitted to humans by *Anopheles* mosquitoes. There are five types of malaria parasites of which *Plasmodium falciparum* is the most severe and can be fatal. *Plasmodium vivax*, *P. malariae*, *P. ovale*, and *P. knowlesi* also cause human disease that is generally far milder and not life-threatening. Malaria is a significant problem in areas of Asia, Africa, and Central and South America. Unless precautions are taken, any person living in or traveling to a country where malaria is present can get the disease. Malaria is not a problem in Hawaii because the *Anopheles* mosquito is not found here. However, persons who were infected overseas have been diagnosed with malaria after arrival in Hawaii.

How do you get it?

Malaria is spread through the bites of infected *Anopheles* mosquitoes. When the female mosquito bites, she injects malaria parasites directly into the blood. The parasites then travel through the blood to the liver and infect the red blood cells.

What are the symptoms?

Symptoms of malaria include fever, chills, backache, and headache. Cycles of chills, fever, and sweating that subside and then return every 1, 2, or 3 days (depending on the type of malaria) are common signs of malaria infection. Malaria can also cause vomiting, diarrhea, coughing, and yellowing (jaundice) of the skin or whites of the eyes. Patients with severe *P. falciparum* malaria may develop bleeding problems, shock, kidney or liver failure, central nervous system problems, and coma.

When do symptoms start?

The period between the mosquito bite and the start of illness is usually 7 to 21 days. Certain types of malaria parasites can take several months to cause symptoms.

What is the treatment for malaria?

Because different types of malaria have become drug resistant, treatment of malaria infection depends upon the geographic region where a person is infected. Effective medication for each type of malaria must be prescribed by a doctor. As patients infected with *P. falciparum* malaria can die (often as a result of delayed treatment), immediate treatment is critical.

When traveling, how can you keep from getting malaria?

Your doctor can prescribe preventive medicines to take. Be sure to take them as directed.

Avoid exposure to mosquitoes. Wear appropriate clothing such as long-sleeved shirts and long pants especially when outdoors.

Apply insect repellent to exposed skin or clothing. The recommended repellent contains 20% - 35% DEET. Higher concentrations of DEET may have a longer repellent effect, however, concentrations over 50% provide no added protection.

Use mosquito nets treated with insecticides over beds and screens over windows and doors.

Spray permethrin or a similar insecticide in the bedroom before going to bed.

For more information, see the CDC's website at <http://www.cdc.gov/malaria/>