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Facts about Malaria

What is malaria?

Malaria is a serious and sometimes fatal disease caused by a parasite. Patients with malaria typically are very sick with high fevers, shaking chills, and flu-like illness. Four kinds of malaria parasites can infect humans: *Plasmodium falciparum*, *P. vivax*, *P. ovale*, and *P. malariae*.

Infection with any of the malaria species can make a person feel very ill; infection with *P. falciparum*, if not promptly treated, may be fatal. Although malaria can be a fatal disease, illness and death from malaria are largely preventable.

Is malaria a common disease?

Yes. The World Health Organization estimates that each year 300-500 million cases of malaria occur and more than 1 million people die of malaria.

Is malaria a serious disease?

Yes. Malaria is a leading cause of death and disease worldwide, especially in developing countries. Most deaths occur in young children. Since many countries with malaria are already among the poorer nations, the disease maintains a vicious cycle of disease and poverty.

Where does malaria occur?

Malaria typically is found in warmer regions of the world -- in tropical and subtropical countries. Higher temperatures allow the Anopheles mosquito to thrive. Malaria parasites, which grow and develop inside the mosquito, need warmth to complete their growth before they are mature enough to be transmitted to humans.

How is malaria transmitted?

Usually, people get malaria by being bitten by an infected female Anopheles mosquito. Only Anopheles mosquitoes can transmit malaria and they must have been infected through a previous blood meal taken on an infected person.

When a mosquito bites, a small amount of blood is taken in which contains the microscopic malaria parasites. The parasite grows and matures in the mosquito's gut for a week or more, then travels to the mosquito's salivary glands. When the mosquito next takes a blood meal, these parasites mix with the saliva and are injected into the bite.

Once in the blood, the parasites travel to the liver and enter liver cells to grow and multiply. During this "incubation period", the infected person has no symptoms. After as few as 8 days or as long as several months, the parasites leave the liver cells and enter red blood cells. Once in the cells, they continue to grow and multiply. After they mature, the infected red blood cells rupture, freeing the parasites to attack and enter other red blood cells. Toxins released when the red cells burst are what cause the typical fever, chills, and flu-like malaria symptoms.

If a mosquito bites this infected person and ingests certain types of malaria parasites ("gametocytes"), the cycle of transmission continues.

Because the malaria parasite is found in red blood cells, malaria can also be transmitted through blood transfusion, organ transplant, or the shared use of needles or syringes contaminated with blood. Malaria may also be transmitted from a mother to her fetus before or during delivery ("congenital" malaria).

Malaria is not transmitted from person to person like a cold or the flu. You cannot get malaria from casual contact with malaria-infected people.

Who is at risk for malaria?

Anyone can get malaria. Most cases occur in residents of countries with malaria transmission and travelers to those countries. In non-endemic countries, cases can occur in non-travelers as congenital malaria, introduced malaria, or transfusion malaria (see above).

If I live in an area where malaria is a problem, how can I prevent myself and my family from getting sick?

You and your family can prevent malaria by

- keeping mosquitoes from biting you, especially at night
- taking antimalarial drugs to kill the parasites
- eliminating places around your home where mosquitoes breed
- spraying insecticides on your home's walls to kill adult mosquitoes that come inside
- sleeping under bed nets - especially effective if they have been treated with insecticide, and
- wearing insect repellent and long-sleeved clothing if out of doors at night

What are the signs and symptoms of malaria?

Symptoms of malaria include fever and flu-like illness, including shaking chills, headache, muscle aches, and tiredness. Nausea, vomiting, and diarrhea may also occur. Malaria may cause anemia and jaundice (yellow coloring of the skin and eyes) because of the loss of red blood cells. Infection with one type of malaria, *Plasmodium falciparum*, if not promptly treated, may cause kidney failure, seizures, mental confusion, coma, and death.

How soon will a person feel sick after being bitten by an infected mosquito?

For most people, symptoms begin 10 days to 4 weeks after infection, although a person may feel ill as early as 7 days or as late as 1 year later. Two kinds of malaria, *P. vivax* and *P. ovale*, can relapse. In *P. vivax* and *P. ovale* infections, some parasites can remain dormant in the liver for several months up to about 4 years after a person is bitten by an infected mosquito. When these parasites come out of hibernation and begin invading red blood cells ("relapse"), the person will become sick.

How do I know if I have malaria?

Most people, at the beginning of the disease, have fever, sweats, chills, headaches, malaise, muscles aches, nausea and vomiting. Malaria can very rapidly become a severe and life-threatening disease. The surest way for you and your doctor to know whether you have malaria is to have a diagnostic test where a drop of your blood is examined under the microscope for the presence of malaria parasites.

If you are sick and there is any suspicion of malaria (for example, if you have recently traveled in a malaria-risk area) the test should be performed without delay.

Tests for Malaria

Peripheral Smear for Malarial Parasite
Rapid Malaria Antigen Test.