

What is malaria?

Malaria is a mosquito-borne disease caused by a parasite called *Plasmodia*. The disease is transmitted to people by the *Anopheles* mosquito. Worldwide, between 300 and 500 million cases of malaria occur each year causing one million deaths. In the United States, approximately 1,300 cases of malaria are diagnosed each year. In Oklahoma, there were an average of eight cases of malaria reported during 2003 and 2004. Cases of malaria occur in travelers and immigrants returning from parts of southern Asia and Africa.

What are the different types of malaria parasites?

There are four different strains of malaria parasites, called *Plasmodium*. *Plasmodium falciparum* (*P. falciparum*) is commonly found in very warm areas closer to the equator and tends to cause the most serious symptoms and sometimes death. The other three types of malaria: *P. vivax*, *P. malariae*, and *P. ovale* are fairly widespread in occurrence and do not usually cause life-threatening conditions.

How is malaria spread?

Malaria is spread by the bite of an infected *Anopheles* mosquito. With certain types of malaria, there may be dormant forms which may cause relapsing symptoms from months to years after the initial infection. Malaria may also be transmitted by a blood transfusion from an infected person or by the use of contaminated needles or syringes.

Who is most likely to get malaria?

Anyone who travels to or lives in a country where malaria readily occurs is at risk of developing the disease. Malaria is currently a problem in tropical or subtropical areas of Asia, Africa and Central and South America.

How soon after exposure do symptoms of malaria appear?

The time between the bite of an infected mosquito and when symptoms develop depends on the strain of malaria. With *P. falciparum*, it is usually nine to 14 days between exposure and when symptoms develop. The time from exposure to when symptoms develop is 12 to 18 days for *P. vivax* and *P. ovale* as well as 18 to 40 days for *P. malariae*. With one strain of *P. vivax*, it may be eight to ten months between exposure and when symptoms develop. When someone is infected through a blood transfusion, this time depends on the number of parasites transferred but is usually less than two months.

What are the symptoms of malaria?

Symptoms of malaria include fever, shaking chills, headache, muscle aches, and tiredness. Nausea, vomiting, and diarrhea may also occur. Cycles of these symptoms generally occur every three days for *P. vivax*, *P. falciparum*, and *P. ovale*. With *P. malariae*, symptoms generally cycle every four days. Malaria may cause anemia and yellowing of the skin and eyes due to loss of red blood cells. If untreated, *P. falciparum* may cause kidney or liver failure, seizures, mental confusion, coma, and sometimes death.

How can malaria be prevented?

The mosquitoes that spread malaria are most active in the early morning before sunrise and in the evening before sunset. If outdoor activities are planned, it is important to wear a mosquito repellent with an active ingredient, such as DEET (N, N-diethyl-m-toluamide) or picaridin (KBR 3023), that is proven to repel the mosquitoes that transmit malaria. Many experts believe that DEET is the best active ingredient to prevent mosquito bites from *Anopheles* mosquitoes since it is known to provide long-lasting protection.

Are there any medications to prevent malaria?

Before traveling to an area with regularly occurring malaria, it is recommended to make an appointment with a healthcare provider to discuss taking antimalarial medication preventatively. The area that people are visiting or traveling around helps to determine which anti-malaria medicine should be given. It is very important to take the medication according to directions given by the healthcare provider. Take care not to miss a dose of the medicine.

Travelers going to areas of Africa, South America, the Indian Subcontinent, Tajikistan, Asia, and the South Pacific with regularly occurring malaria should take one of the following antimalarial drugs: atovaquone/proguanil, doxycycline , or mefloquine. Primaquine, another effective antimalarial medication, should only be taken if the person cannot tolerate one of the other drugs.

Travelers going to malaria-risk areas in Mexico, Haiti, the Dominican Republic, and certain countries in Central America, the Middle East, and Eastern Europe should take chloroquine as their antimalarial drug. Hydroxychloroquine sulfate may be taken as an alternative.

Are there any effective homeopathic or natural medications to prevent malaria?

There are no effective homeopathic or natural medications to prevent a person from getting malaria. Taking a homeopathic medicine does not protect a person from getting malaria.

