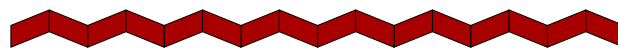




MALARIA



Safety and Security Fact Sheet

WHAT IS MALARIA?

Malaria is a serious disease caused by a parasite. There are four kinds of malaria that can infect humans: *Plasmodium falciparum* (plaz-MO-dee-um fal-SIP-a-rum); *P. vivax* (VI-vacks); *P. ovale* (o-VOL-ley); and *P. malariae* (ma-LER-ee-aa).

HOW COMMON IS MALARIA?

The World Health Organization estimates that yearly 300-500 million cases of malaria occur and more than one million people die of malaria. About 1,200 cases of malaria are diagnosed in the United States each year. Most cases in the United States are in immigrants and travelers returning from malaria-risk areas, mostly from sub-Saharan Africa and the Indian subcontinent.

HOW DO YOU GET MALARIA?

Humans get malaria from the bite of a malaria-infected Anopheles mosquito. The Anopheles mosquito primary feed between dusk and dawn. When a mosquito bites an infected person, it ingests microscopic malaria parasites found in the person's blood. The malaria parasite must grow in the mosquito for a week or more before infection passes to another person. If after a week the mosquito then bites another person, the parasites go from the mosquito's mouth into the person's blood. Parasites then travel to the person's liver, enter the liver, grow, and multiply. During this time the parasites are in the liver, the person is not yet feeling sick. The parasites leave the liver and enter red blood cells; this may take as little as eight days or as many as several months. Once inside the red blood cells the parasites grow and multiply. The red blood cells burst, freeing the parasites to attack other red blood cells. Toxins from the parasite are then released into the blood, making the person feel sick. If a mosquito bites this person while the parasites are in his or her blood, it will ingest the tiny parasites. After a week or more, the mosquito can infect another person.

Each year in the United States, a few cases of malaria result from blood transfusions. Some cases are passed from mother to fetus during pregnancy or are transmitted by locally infected mosquitoes.

WHAT ARE THE SIGNS AND SYMPTOMS OF MALARIA?

Symptoms of malaria include fever and flu-like illness, including shaking, chills, headache, muscle aches, and fatigue. 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, *P. 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 ten days to four weeks after infection, although a person may feel ill as early as eight days or up to one year later. Two kinds of malaria, *P. vivax* and *P. ovale*, can relapse; some parasites can rest in the liver for several months up to four years after a person is bitten by an infected mosquito. When these parasites come out of hibernation and begin invading red blood cells, the person will become sick.

HOW IS MALARIA DIAGNOSED?

Malaria is diagnosed by looking for the parasites in a drop of blood. Blood will be put onto a microscope slide and stained so that the parasites will be visible under a microscope.



WHO IS AT RISK FOR MALARIA?

Persons living in, and travelers to, any area of the world where malaria is transmitted may become infected.

WHAT IS THE TREATMENT FOR MALARIA?

Malaria can be cured with prescription drugs. The type of drugs and length of treatment depend on which kind of malaria is diagnosed, where the patient was infected, the age of the patient, and how severely ill the patient was at start of treatment.

WHAT ARE THE BEST WAYS TO PREVENT INSECT BITES?

Protect your child from mosquito bites. Have him or her wear long-sleeved shirts and long pants. Apply insect repellent to exposed skin. Mosquitoes that transmit malaria bite between dusk and dawn. Use insect repellents that contain DEET.

WHEN USING REPELLENT WITH DEET, FOLLOW THESE PRECAUTIONS:

- Use according to label directions.
- Use only when outdoors and wash skin after coming indoors.
- Do not breathe in, swallow, or get into the eyes.
- Do not put on wounds or broken skin.

The concentration of DEET varies among repellents. Repellents with DEET concentrations of thirty to thirty-five percent are quite effective, lasting about four hours.

DEET PRECAUTIONS

If you are taking your children into the woods or in grassy areas where ticks and mosquitoes are prevalent, applying a DEET-containing insect repellent is the only effective way of protecting them from potentially serious bites. Here are a few guidelines:

- Follow directions correctly. (All concentrations of DEET repellents can be used by people of all ages if directions are correctly followed, according to the Environmental Protection Agency.)
- Apply insect repellents to exposed skin taking care to avoid the eyes and mouth.
- Read the entire product label before using the repellent.
- Never apply on wounds or scratches.
- Apply to clothing (natural fibers only) for added protection as directed on the product label.
- Avoid over-saturation. It is not necessary for adequate protection.
- Do not apply to the hands of small children, since they frequently put their hands into their mouths.
- Do not allow children to apply the product themselves.
- Cleanse the skin with soap and water after returning indoors.
- Keep out of the reach of children, because like many chemicals, DEET can be toxic if ingested.
- Wash the area and seek medical attention if there is a suspected reaction to an insect repellent. (A very small percentage of children and adults may be sensitive to chemicals such as DEET.)

If you need assistance, call the safety section at 571-423-2010.