

## General Information

The word Malaria is from the Italian/Latin languages meaning “bad air”. The disease is caused by protozoan parasites that attack and destroy red blood cells. The parasites are transmitted through the bite of an infected mosquito.

At present malaria transmission occurs mainly in the tropical and subtropical regions of the world. Every year, thousands of cases of malaria are imported into the United States as a result of infections that were acquired in other countries. Every California county has reported imported malaria cases.

Occasionally, transmission occurs within the United States by local mosquitoes. The source of parasites in those instances is from an infected person arriving from another country. A notable outbreak occurred in San Diego county in 1986. Without prompt action by health officials and mosquito control agencies, malaria could again become established in California.

Malaria was epidemic in California during the 1800's. Its continued presence in the early part of this century became a strong impetus for the formation of many of the state's mosquito control districts.

## Susceptible Populations

All individuals, both sexes or any age group are susceptible to the malaria parasite. In some areas of California the risk of infection is greater because of the high number of imported malarial cases as well as the presence of higher numbers of Anopheline mosquitoes.

## Protection from Mosquito Bites

The greatest risk of mosquito bites occurs during the first few hours after sunset. Some ways you can reduce the risk of being bitten by mosquitoes are:

- ◆ Reduce outdoor activities during the first few hours after sunset
- ◆ Wear long sleeved clothing and long pants
- ◆ Apply insect repellent as needed according to the product label
- ◆ Ensure that door and window screens are in good repair

For more information about mosquitoes and the diseases they can transmit contact your local mosquito control district or health department.

Sutter-Yuba Mosquito & Vector Control District  
701 Bogue Road / P.O. Box 726  
Yuba City, CA. 95992  
(530) 674-5456 Ext. 0  
[www.sutter-yubamvcd.org](http://www.sutter-yubamvcd.org)

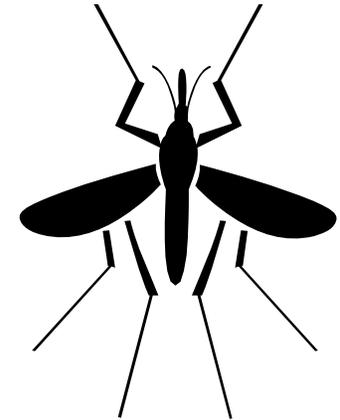
January 2006

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# Malaria

## “Intermittent Fever”

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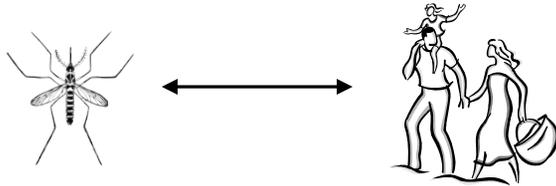
**Sutter-Yuba Mosquito &  
Vector Control District**

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## Transmission Cycle

Malaria is transmitted to man primarily by *Anopheles* mosquitoes. In California there are three species of mosquitoes that can transmit the malaria parasite, *An. freeborni* (the western malaria mosquito), *An. punctipennis* (the woodland malaria mosquito) and *An. hermsi* (the coastal mosquito).

The natural cycle of malaria transmission in the United States involves mosquitoes and humans. The mosquito becomes infected while feeding on a human that is infected with the malarial parasite. Once infected, the mosquito can transmit the parasite to other humans.



Species of *Anopheles* mosquitoes that can transmit the malarial parasite occur in nearly every county in California.

## Additional Information

Check these web links for more information on malaria:

- ◆ <http://www.cdc.gov/malaria/facts.htm>
- ◆ <http://www.cdc.gov/malaria/faq.htm>

## Malaria Types

There are 4 types of malaria. They are *Plasmodium vivax* (benign tertian fever), *Plasmodium falciparum* (aestivoautumnal fever), *Plasmodium ovale* (ovale tertian) and *Plasmodium malariae* (quartan fever). The incubation period as well as the number of hours between episodes of fever varies between the types.

## Symptoms

Depending on the type of malaria, symptoms of infection appear 9 to 30 days after the bite from an infected mosquito. The first symptoms of malaria are flu-like with headache, back pain, nausea and generally feeling ill. The fever is irregular for the first 2 to 4 days, but soon becomes intermittent with marked swings from morning to evening up to 105°F or higher.

After the primary attack, malaria symptoms are characterized by sudden recurring attacks called paroxysms. Paroxysms have three distinct stages of cold, hot and then sweating that begin in the afternoon and last 8 to 12 hours.

## Effects of Malaria

Human malaria can result in:

- ◆ enlargement of the spleen and liver
- ◆ kidney failure
- ◆ suppression of the immune system
- ◆ death

## Diagnosis of Infection

A physician cannot confirm a case of malaria without specific laboratory tests for the parasite. A malaria infection can be diagnosed by examining a blood sample for the presence of the parasite. Diagnosis and reporting of cases is important in order to alert public health and mosquito control agencies of the risk to others so that preventative measures can be taken.

## Medical Treatment

There are a number of therapeutic or prophylactic drugs available through your medical doctor. In some regions of the world malaria parasites have become resistant to all of the anti-malarial drugs.