

# Malaria

## Introduction:

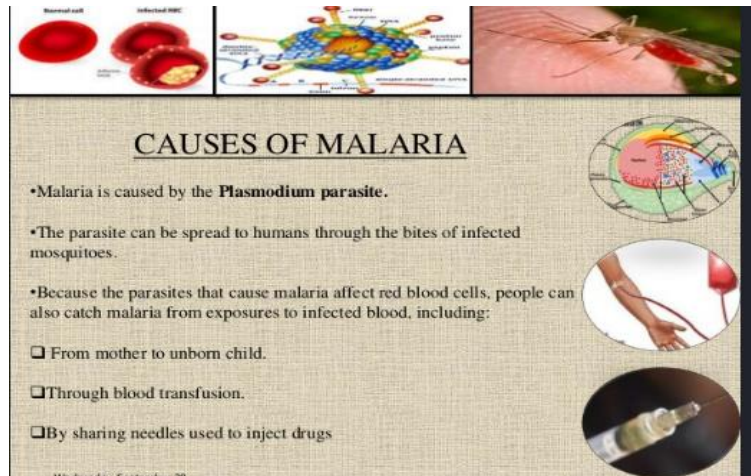
Malaria is a life-threatening mosquito-borne blood disease. The parasites in mosquitos that spread malaria belong to the *Plasmodium* genus. Over 100 types of *Plasmodium* parasite can infect a variety of species. Different types replicate at different rates, changing how quickly the symptoms escalate, and the severity of the disease.



## Causes:

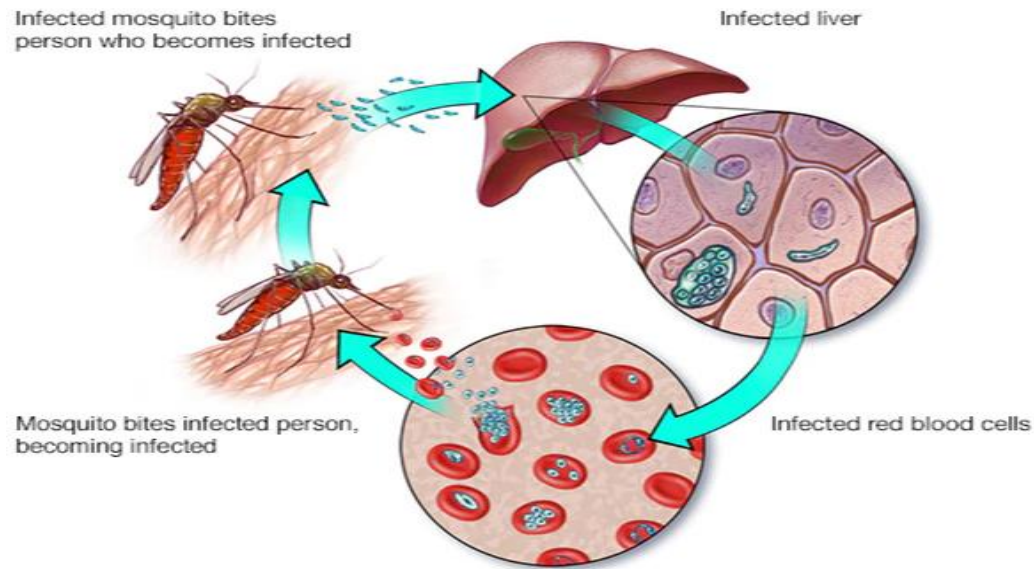
Malaria is caused by the protozoan parasite Plasmodium. Human malaria is caused by four different species of Plasmodium:

- *P. falciparum*,
- *P. malariae*,
- *P. ovale* and
- *P. vivax*.



## Mosquito transmission cycle

- **Uninfected mosquito.** A mosquito becomes infected by feeding on a person who has malaria.
- **Transmission of parasite.** If this mosquito bites you in the future, it can transmit malaria parasites to you.
- **In the liver.** Once the parasites enter your body, they travel to your liver — where some types can lie dormant for as long as a year.
- **Into the bloodstream.** When the parasites mature, they leave the liver and infect your red blood cells. This is when people typically develop malaria symptoms.
- **On to the next person.** If an uninfected mosquito bites you at this point in the cycle, it will become infected with your malaria parasites and can spread them to the other people it bites.



### **Other modes of transmission:**

Because the parasites that cause malaria affect red blood cells, people can also catch malaria from exposure to infected blood, including:

- From mother to unborn child
- Through blood transfusions
- By sharing needles used to inject drugs

### Symptoms:

A malaria infection is generally characterized by the following signs and symptoms:

- Fever
- Chills

- Headache
- Nausea and vomiting
- Muscle pain and fatigue

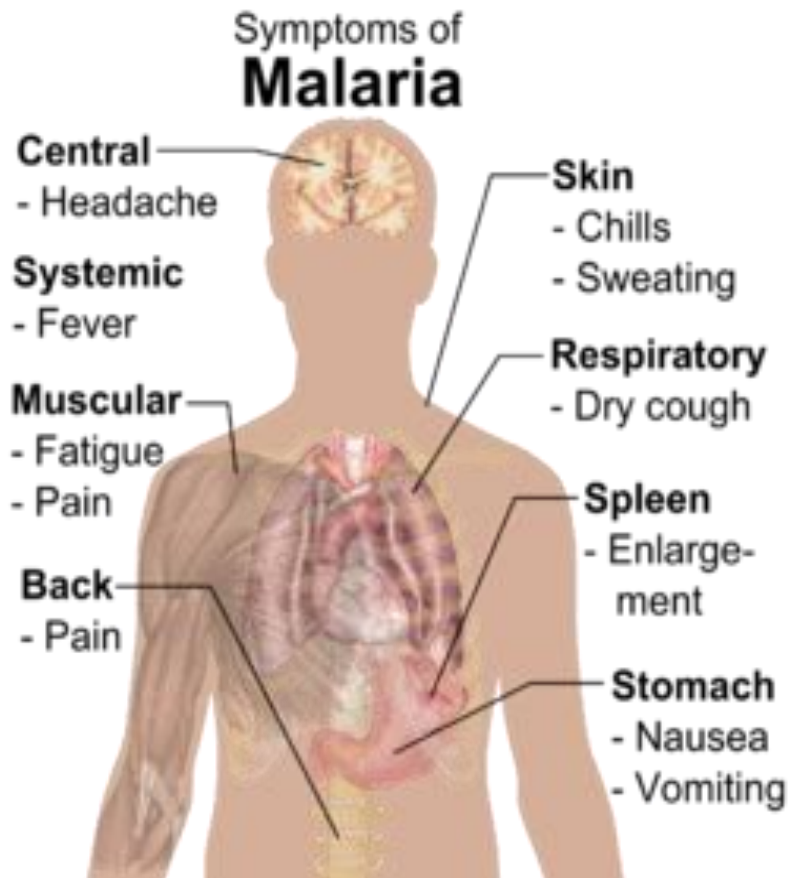
Other signs and symptoms may include:

- Sweating
- Chest or abdominal pain
- Cough

Some people who have malaria experience cycles of malaria "attacks." An attack usually starts with shivering and chills, followed by a high fever, followed by

sweating and a return to normal temperature. Malaria signs and symptoms typically begin within a few weeks after being bitten by an infected mosquito.

However, some types of malaria parasites can lie dormant in your body for up to a year.



Prevention:

Prevention of malaria can aim at either:

- preventing infection, by avoiding bites by parasite-carrying mosquitoes, or
- preventing disease, by using antimalarial drugs prophylactically. The drugs do not prevent initial infection through a mosquito bite, but they prevent the development of malaria parasites in the blood, which are the forms that cause disease. This type of prevention is also called “suppression.”

### **Prevention of Malaria Infection**

- Infection is prevented when malaria-carrying *Anopheles* mosquitoes are prevented from biting humans.

- Vector control aims to reduce contacts between mosquitoes and humans. Some vector control measures (destruction of larval breeding sites, insecticide spraying inside houses) require organized teams (for example, from the Ministry of Health) and resources that are not always available.
- An alternate approach, insecticide-treated bed nets (ITNs), combines vector control and personal protection. This intervention can often be conducted by the communities themselves and has become a major intervention in malaria control.

### **Prevention of Malaria Disease**

- Administration of antimalarial drugs to vulnerable population groups does not prevent infection, which happens through mosquito bites. But drugs can prevent disease by eliminating the parasites that are in the blood, which are the forms that cause disease.
- Pregnant women are the vulnerable group most frequently targeted. They may receive, for example, “intermittent preventive treatment” (IPT) with antimalarial drugs given most often at antenatal consultations during the second and third trimesters of pregnancy.

# Control Strategy for Malaria

