

# Prof.Dr.Hashim Raheem Tarish

## Blood sporozoa

Malaria is a life-threatening disease. It's typically transmitted through the bite of an infected *Anopheles* mosquito. Infected mosquitoes carry the *Plasmodium* parasite. When this mosquito bites human, the parasite is released into their bloodstream.

Once the parasites are inside your body, they travel to the [liver](#), where they mature. After several days, the mature parasites enter the bloodstream and begin to infect red blood cells.

Within 48 to 72 hours, the parasites inside the red blood cells multiply, causing the infected cells to burst open.

The parasites continue to infect red blood cells, resulting in symptoms that occur in cycles that last two to three days at a time.

Malaria is typically found in tropical and subtropical climates where the parasites can live.

Malaria is caused by protozoan parasites of the genus *Plasmodium* – single-celled organisms that cannot survive outside of their host(s).

**1-*Plasmodium falciparum*** is responsible for the majority of malaria deaths globally and is the most prevalent species in sub-Saharan Africa. The remaining species are not typically as life threatening as *P. falciparum*.

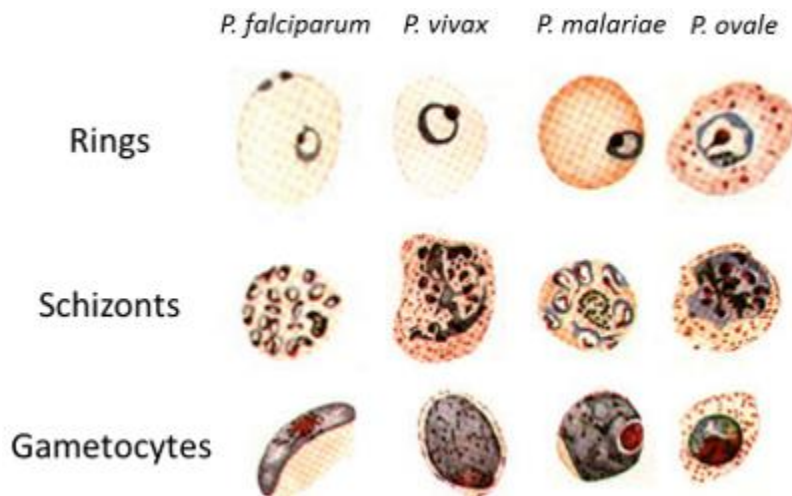
**2-*Plasmodium vivax***, is the second most significant species and is prevalent in Southeast Asia and Latin America.

3- *P. vivax* and *Plasmodium ovale* have the added complication of a dormant liver stage, which can be reactivated in the absence of a mosquito bite, leading to clinical symptoms.

4-*P. ovale* and *Plasmodium malariae* represent only a small percentage of infections.







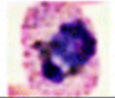



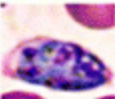




5-A fifth species *Plasmodium knowlesi*– a species that infects primates – has led to human malaria, but the exact mode of transmission remains unclear.

## Morphology

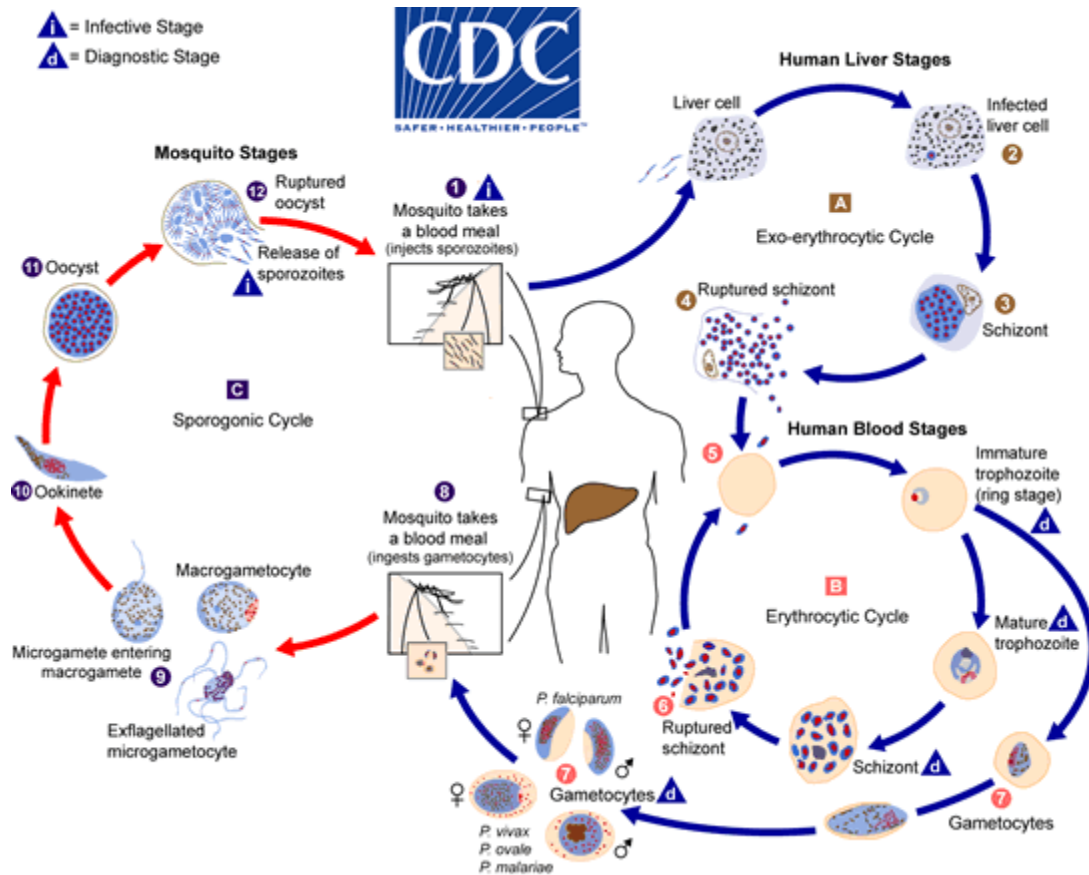


Stages : ring form, trophozoite , schizont , gametocyte (hosts body in R.B.Cs) , Merozoites in hepatocytes of Liver.

Gametocyte , ookinate , oocyst , Sporocyst and Sporozoite ,( vector)

Species Stages	P. Falciparum	P. Vivax	P. Malariae	P. Oval
	Ring Stage			
Trophozoite				
Schizont				
Gametocyte				

## Life cycle



## Malaria Diseases

Malaria is a deadly infectious disease caused by the intraerythrocytic protozoan parasite call *Plasmodium*. The transmits by or during the bite of infect mosquito anophline female fly.

There are 4 types of malaria effect human:

*P.falciparum* .....causes falciparum malaria or malignant tertian malaria (every 48 hour the attack occurs).

*P.vivax* and *P.ovalae* .....*Vivax* and *ovalae* malaria or benign tertian malaria (every 48 hour).

*P. malariae* .....Quartain benign malaria ( every 72 hour ).

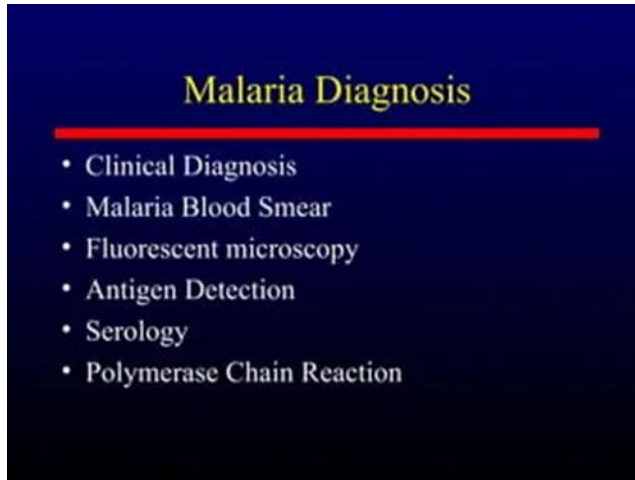
### **Stages of disease:**

1-Cold stage

2- Hot stage

3-Sweat stages

### **Diagnosis:**



1- Microscopy in the detection of malaria parasites and in the identification of species

Thick and thin films is advised for malaria diagnosis.

Thick films should be stained using Giemsa or Field stain.

Thin films should be stained with Giemsa stain or Leishman stain.

2-Rapid diagnostic tests (RDTs) for malarial antigen cannot replace microscopy but are indicated as a supplementary test when malaria diagnosis is performed by relatively inexperienced staff.

