HUMAN HEALTH AND DISEASE

PRESENTED BY

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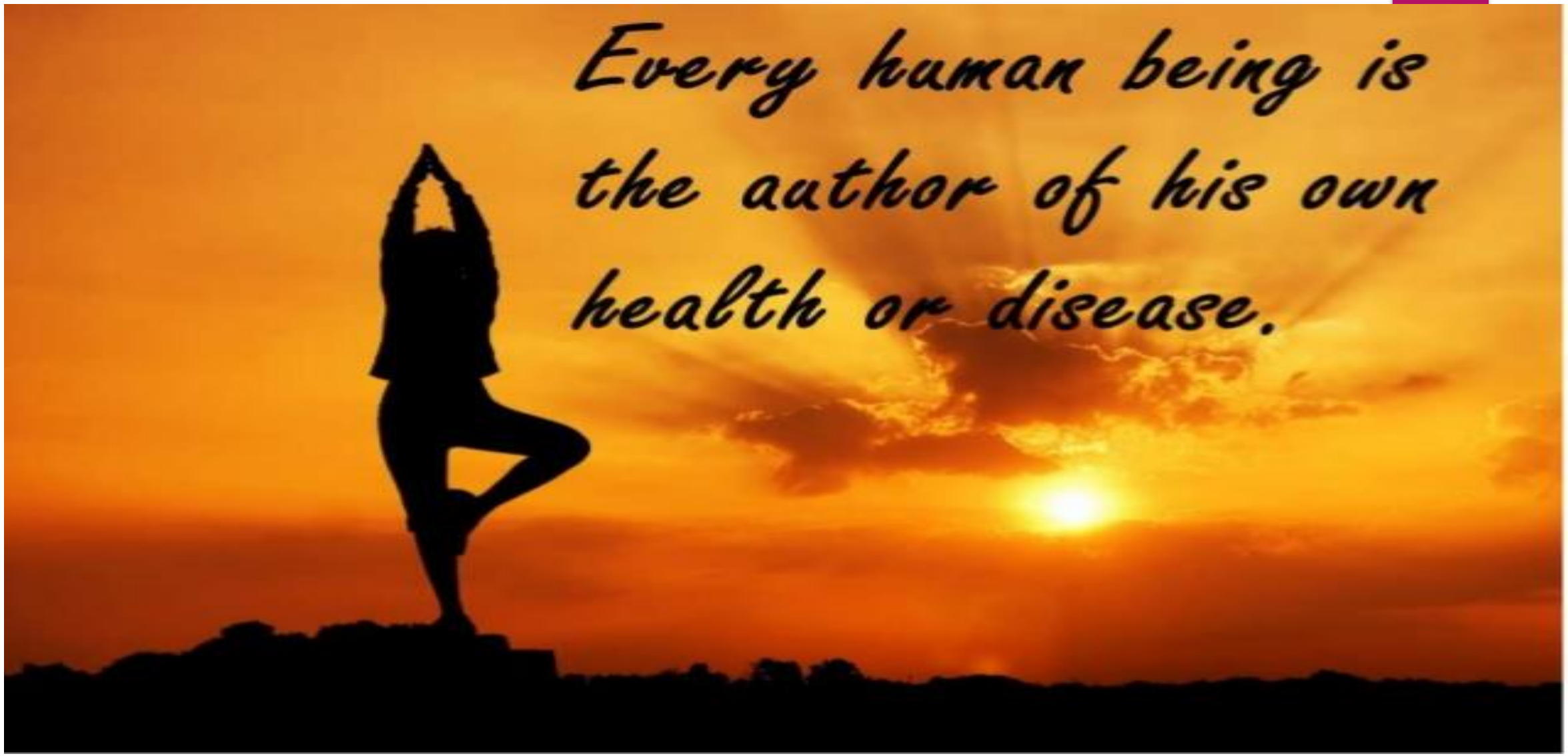

Every human being is
the author of his own
health or disease.

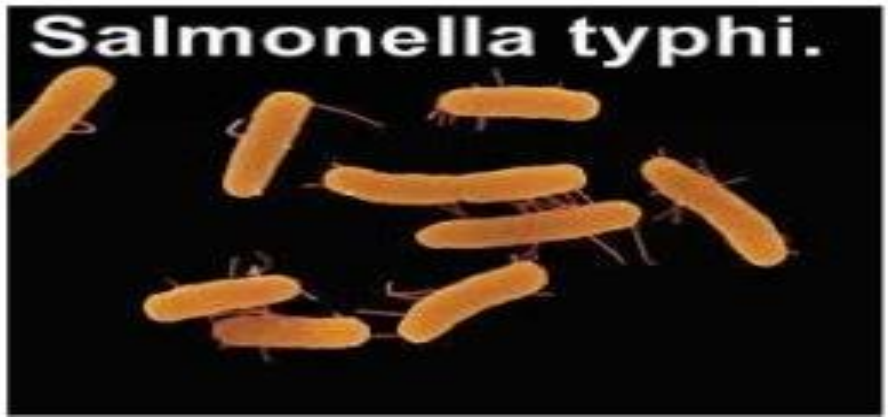
- **Health:**
- Health is defined as a state of complete physical, mental and social well-being.
- When people are healthy, they are more efficient at work. This increases productivity and brings economic prosperity.
- Health also increases long life and reduces infant and maternal mortality.
- The good health is maintained by balanced diet, personal hygiene and regular exercise.

- The health is affected by –

1. Genetic disorders .
2. Infections.
3. Life style including Diet, rest and exercise. Drug and alcohol abuse also affect our health adversely.

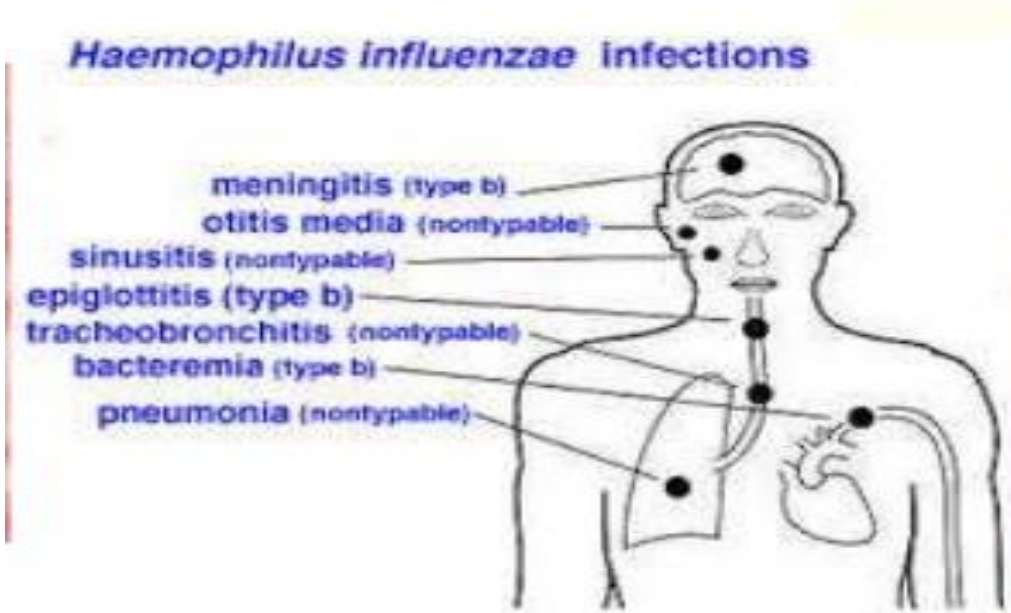
- Diseases are grouped into infectious and non-infectious.
- Diseases which are easily transmitted from one person to another are called infectious diseases.
- Diseases which are not transmitted from one person to another are called non infectious diseases..
- Cancer is the non-infectious that cause death.

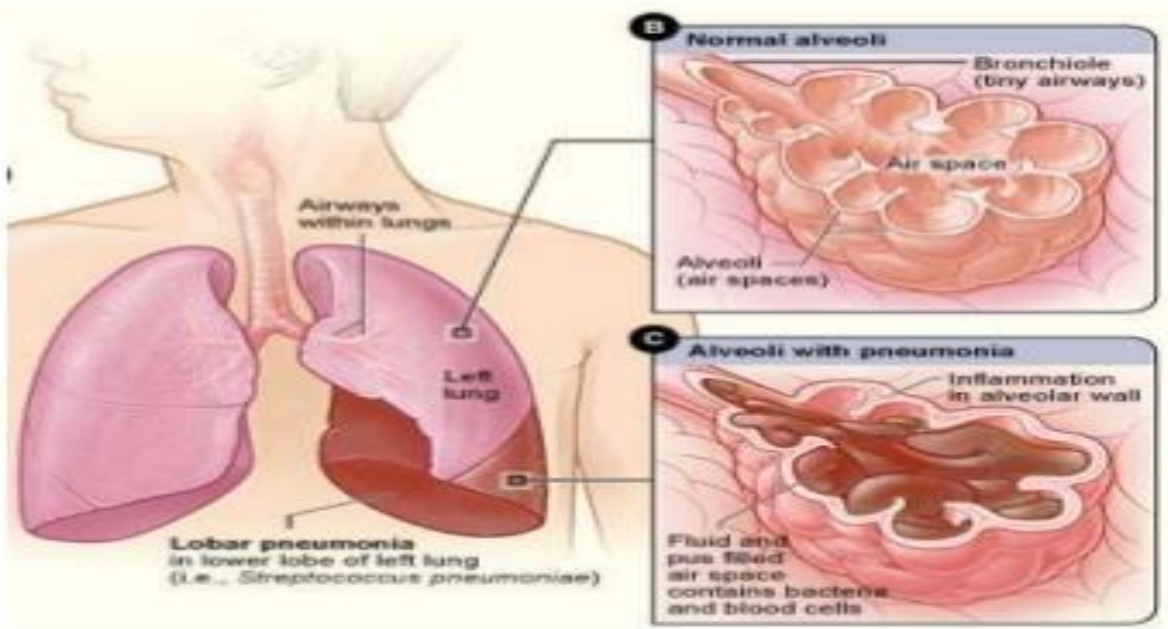
- **COMMON DISEASES IN HUMANS:**
- organisms belonging to bacteria, viruses, fungi, protozoans, helminths, etc., could cause diseases in man. Such disease causing organisms are called pathogens.
- **TYPHOID:**
- **Pathogen:** ***Salmonella typhi (bacterium)***
- **Organs affected:** small intestine, migrate to other organs through blood.
- **Method of transmission:** contamination of food and water



- **Symptoms:**
- High fever (39^0 to 40^0 C)
- Weakness, stomach pain, constipation, headache and loss of appetite.
- Intestinal perforation may leads to death.
- **Test:** Typhoid fever could be confirmed by Widal test.

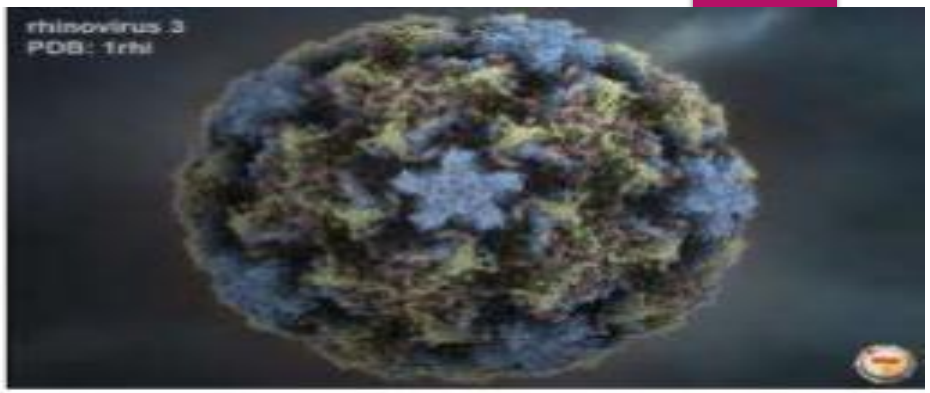
- **PNEUMONIA:**
- **Pathogen:** Streptococcus pneumoniae and Haemophilus influenzae.
- **Organs affected:** Alveoli of lungs, alveoli get filled with fluid.



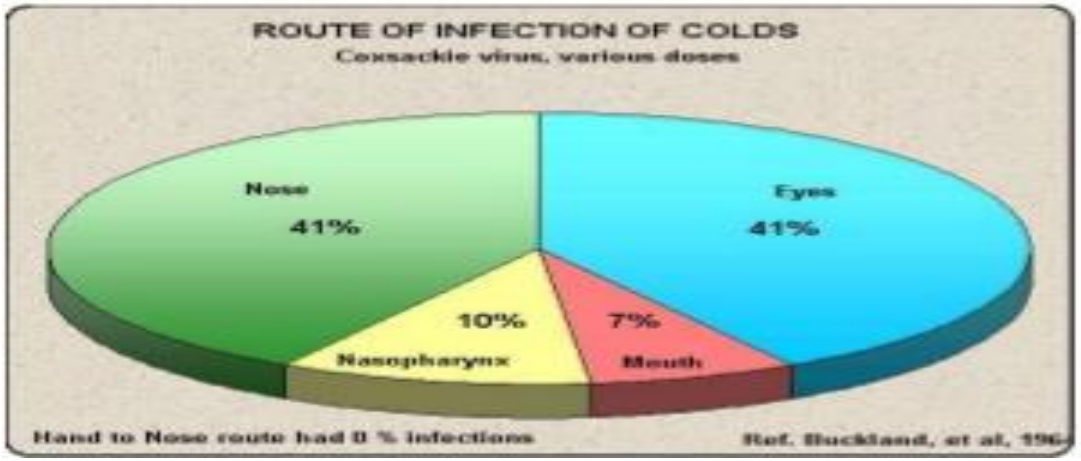


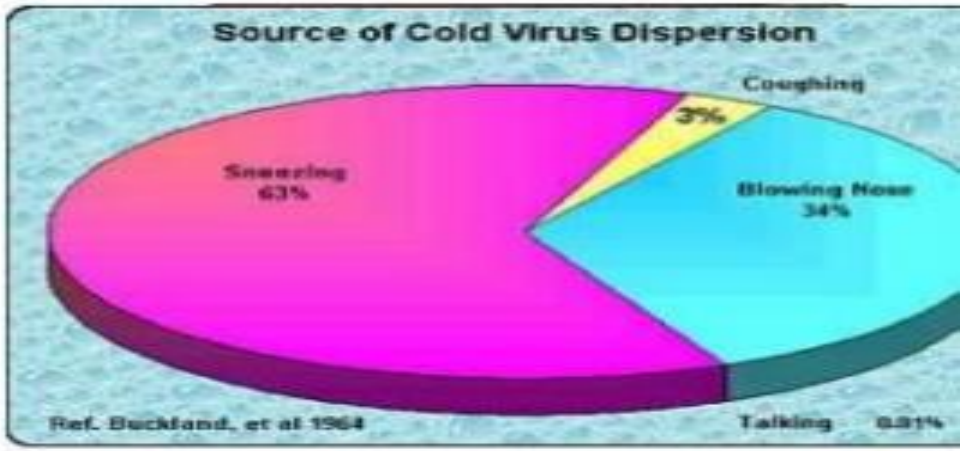
- **Method of transmission:** Inhaling the droplets/aerosols released by infected person.
- **Symptoms:**
- Fever, chills, cough and headache.
- In severe cases the lips and finger nails turn gray to bluish colour.

- **COMMON COLD:**
- **Pathogen:** Rhino viruses.
- **Organs affected:** nose and respiratory passage

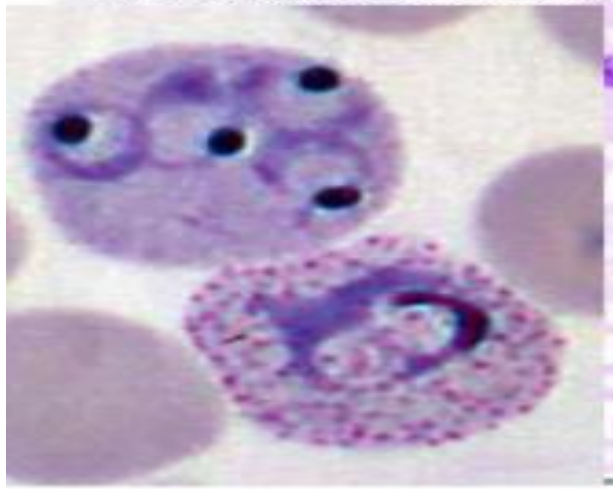


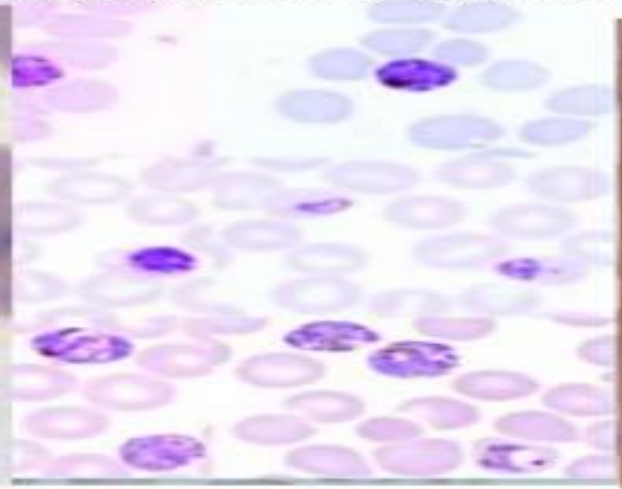
- **Method of transmission:**
- Direct inhalation of droplets from infected person.
- Through contaminated objects like pen, books, cups, computer key board.



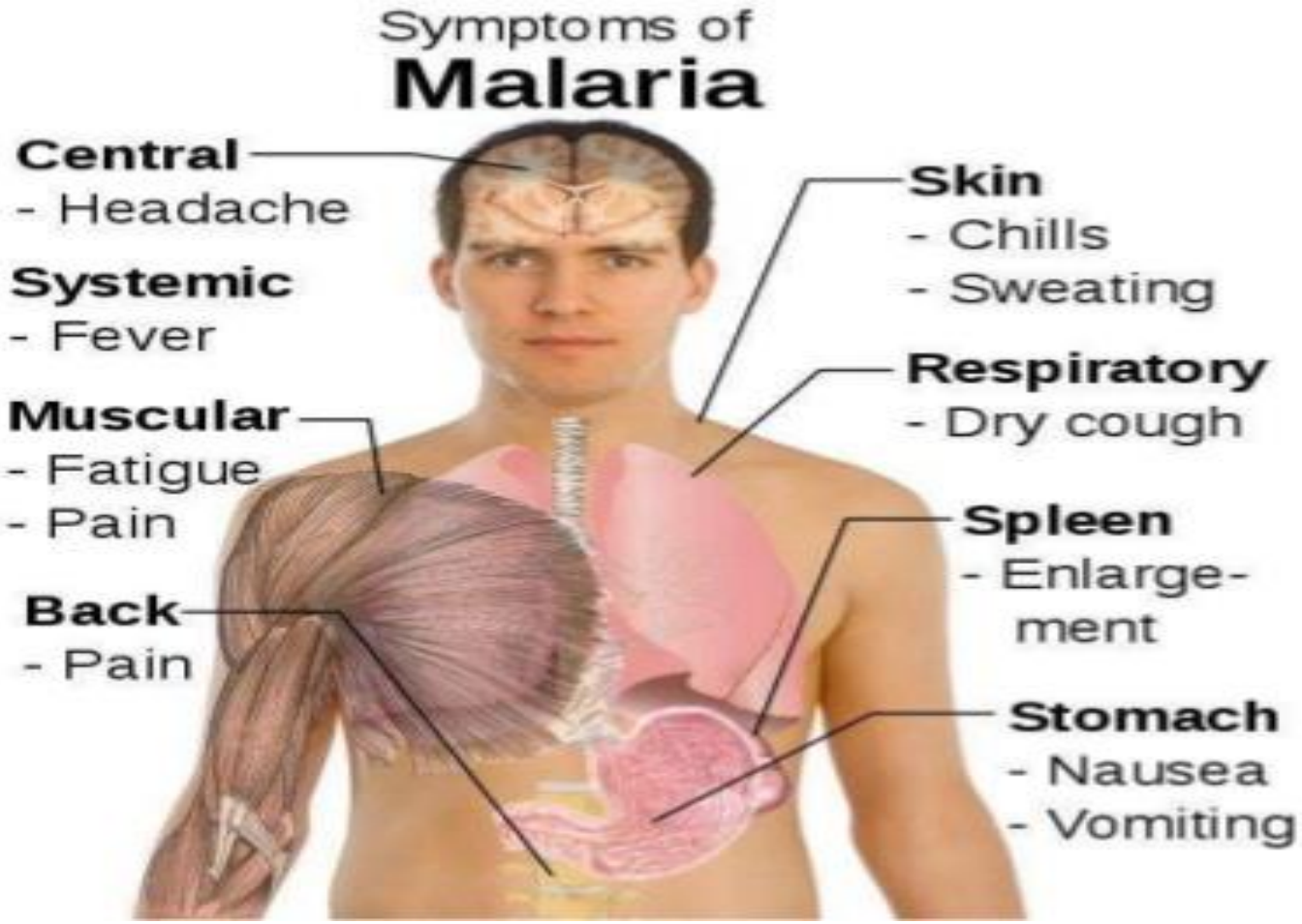


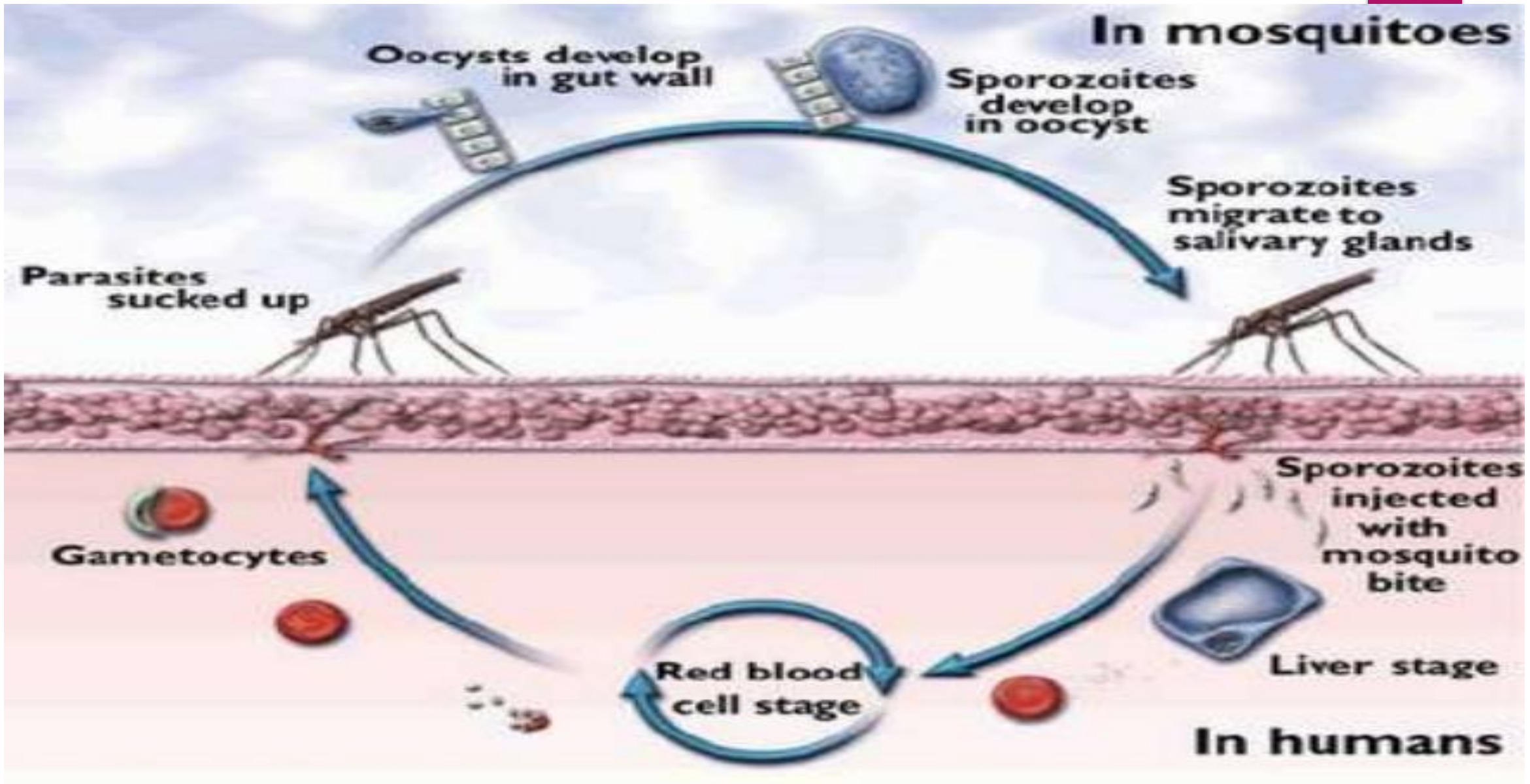
- **MALARIA:**
- **Pathogen:** Plasmodium. (P. vivax, P. malariae, P. ovale, P. falciparum)
- Malignant malaria caused by P. falciparum is fatal.
- **Organs affected:** liver, RBC.
- **Method of transmission:** By biting of female anopheles mosquito (vector)

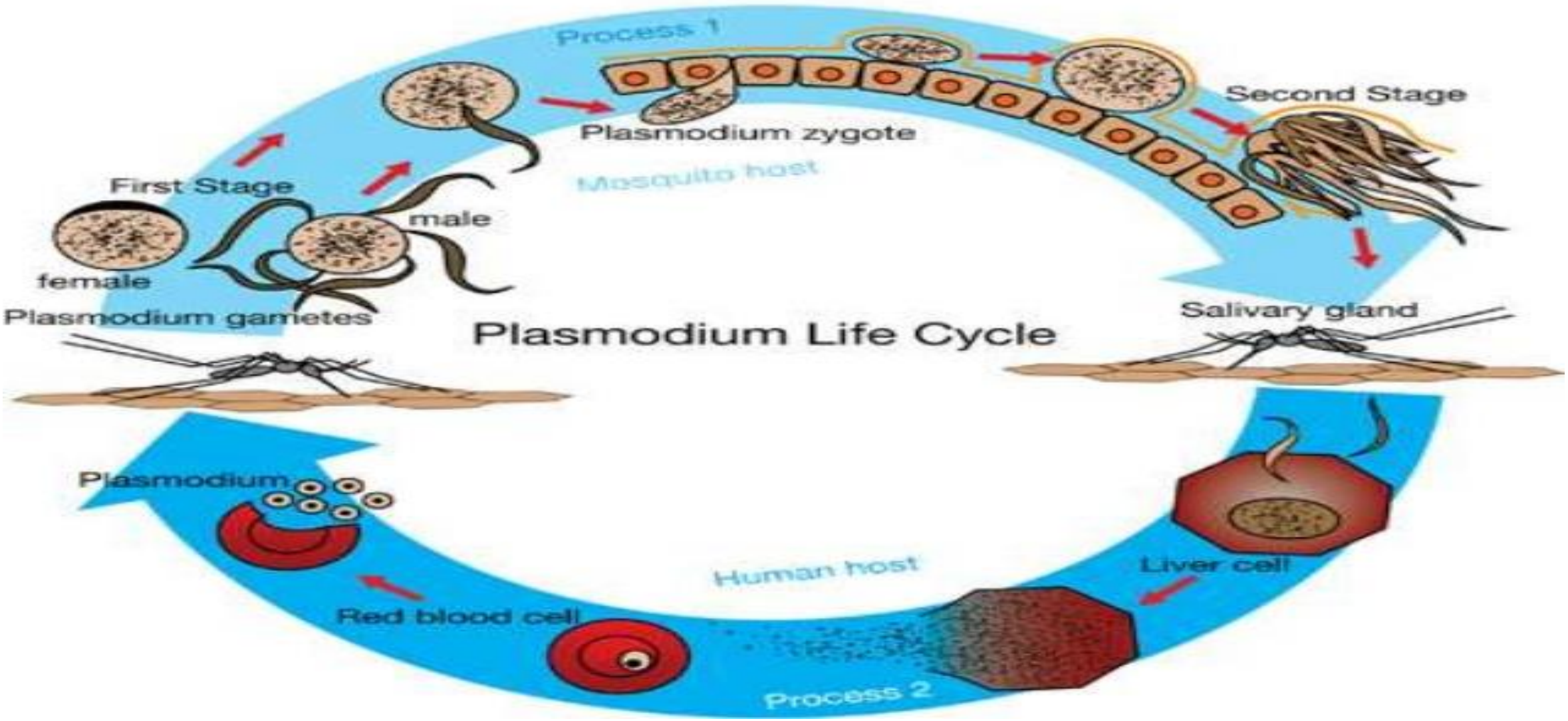




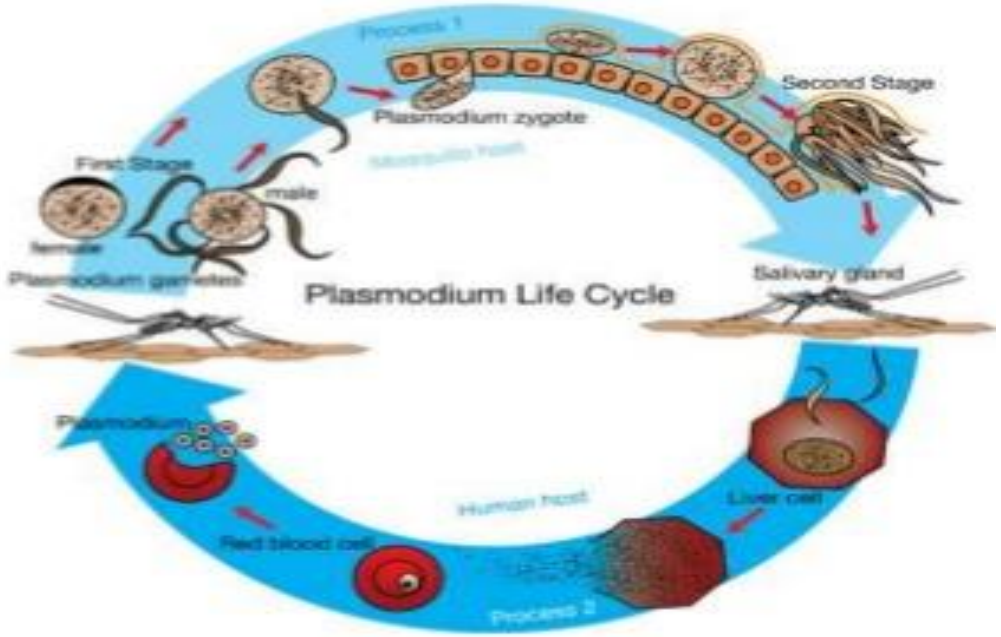
- Symptoms: high fever and chill, fever occurs on every alternate day, vomiting.



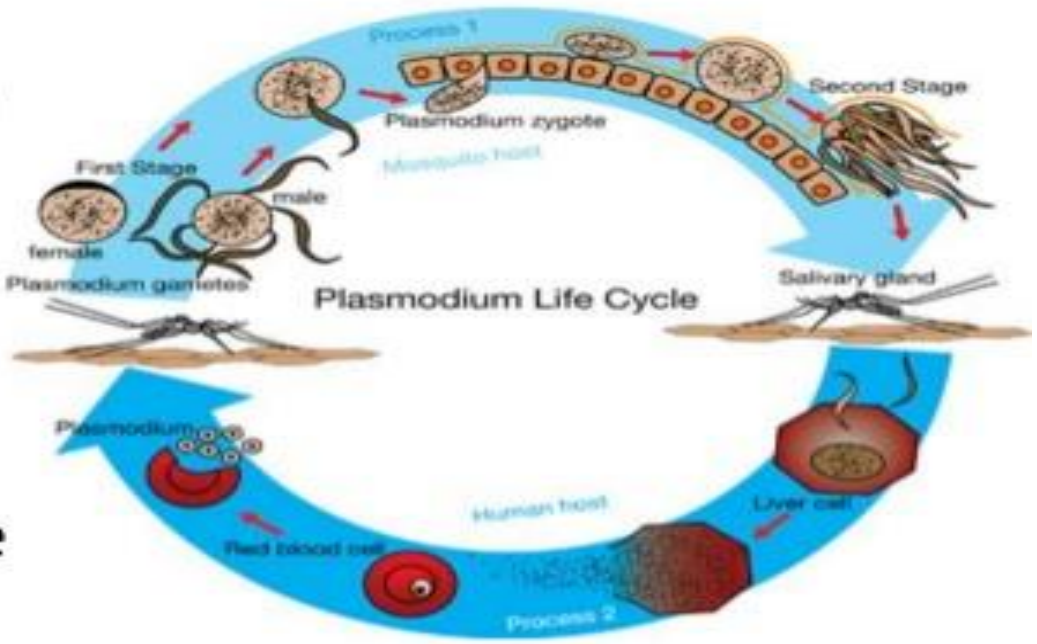

In mosquitoes
Oocysts develop in gut wall
Sporozoites develop in oocyst
Sporozoites migrate to salivary glands
Parasites sucked up
Gametocytes
Sporozoites injected with mosquito bite
Liver stage
Red blood cell stage
In humans


Process 1
Plasmodium zygote
Mosquito host
Second Stage
First Stage
male
female
Plasmodium gametes
Plasmodium Life Cycle
Salivary gland
Plasmodium
Human host
Liver cell
Red blood cell
Process 2

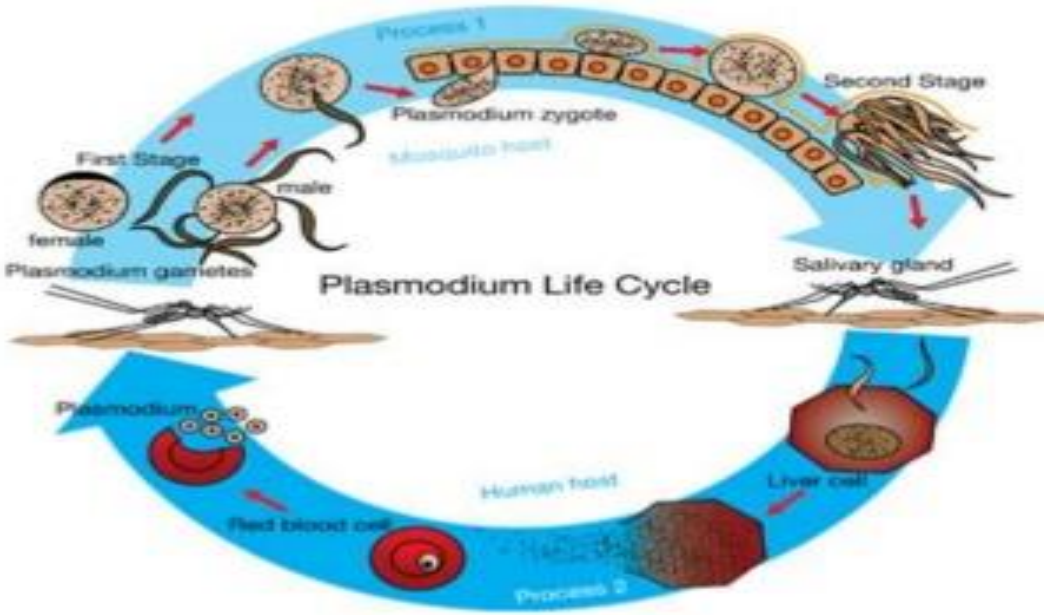
- **life cycle of malaria parasite:**
- The malarial parasite requires two hosts – human and Anopheles, to complete their life cycle.
- Life cycle of plasmodium starts with injecting sporozoites through the bite of infected female Anopheles mosquitoes.
- The parasite initially multiplied within the liver cells and then attack the red blood cells (RBCs) resulting in their rupture.



- There is release of a toxic substance called hemozoin from the ruptured RBCs. It is responsible for the chill and high fever.
- From the infected human the parasite enters into the body of Anopheles mosquito during biting and sucking blood.
- Further development takes place in the body of Anopheles mosquitoes.

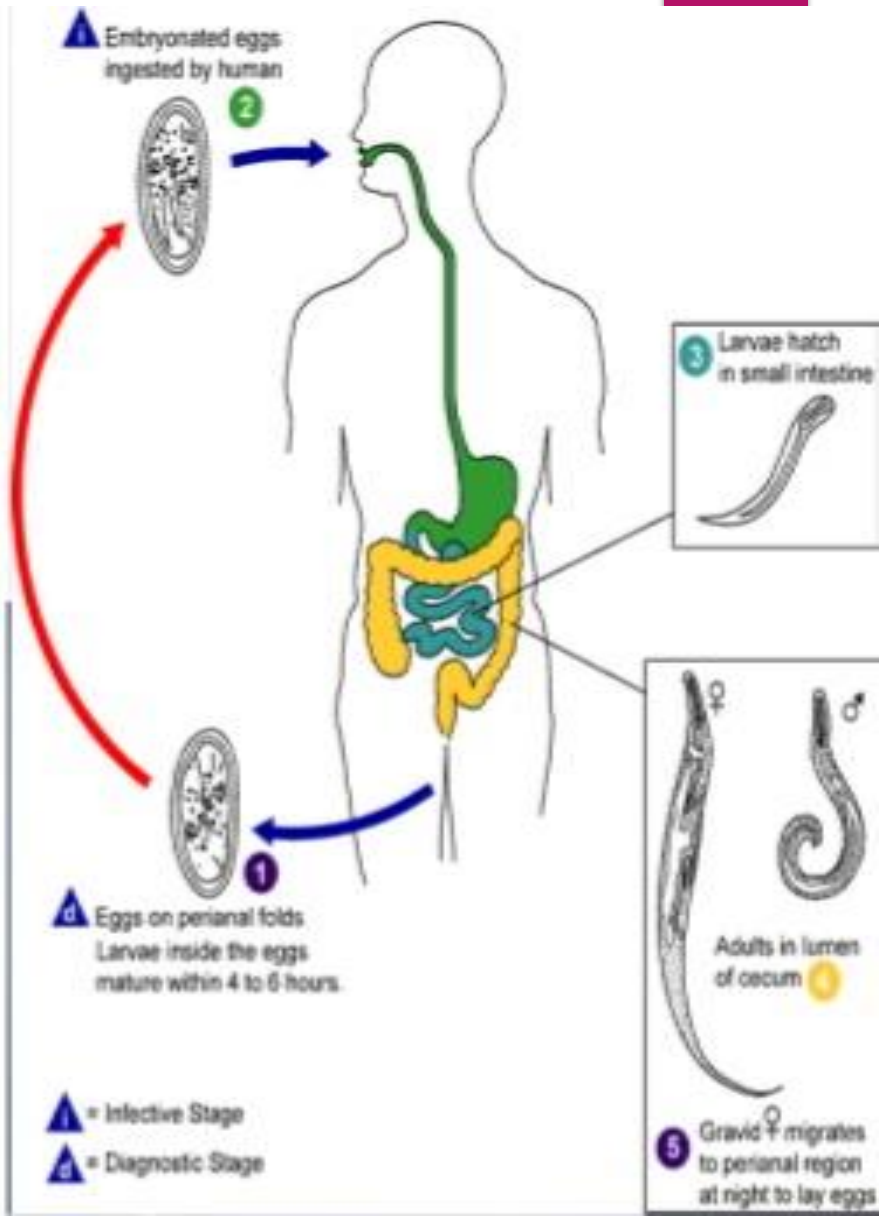


- The female mosquito takes up gametocytes with the blood meal.
- Formation of gametes and fertilization takes place in the intestine of mosquito.
- The zygote develops further and forms thousands of sporozoites.
- These sporozoites migrated into the salivary gland of mosquito.
- When the mosquito bite another human sporozoites are injected.



- **AMOEBIASIS (Amoebic dysentery)**
- **Pathogen:** Entamoeba histolytica a protozoan parasite.
- **Organs affected:** large intestine of man
- **Method of transmission:**
- House fly acts as mechanical carrier.
- Contamination water and food with faecal matter.
- **Symptoms:**
- Loose motion and abdominal pain.
- Stools with excess mucous and blood clots.

- **ASCARIASIS:**
- **Pathogen:** Ascaris lumbricoids (nematode)
- **Organs affected:** intestine of man
- **Method of transmission:** Contaminated water, vegetables, fruits.
- **Symptoms:**
- Internal bleeding, muscular pain, fever, anemia.
- Blockage of the intestinal passage.



- **FILARIASIS OR ELEPHANTIASIS:**
- **Pathogen:** Wuchereria (W.bancrofti and W. Malayi) (nematode parasite)
- **Organs affected:** lymphatic vessels of the lower limbs, genital organs.
- **Methods of transmission:** biting of infected female culex mosquito
- **Symptoms:**
- Chronic inflammation of the organs.
- Abnormal swelling of lower limb, scrotum, penis.
- Hence the disease named as elephantiasis or Filariasis.

- **RING WORMS:**
- **Pathogen:** Microsporum, Trichophyton and Epidermophyton (fungi)
- **Organs affected**: Skin, nails, folds of skin, groin.
- **Method of transmission:**
- Acquired from the soil.
- Using towel, clothes or even comb of infected individuals.
- **Symptoms:**
- Appearance of dry, scaly lesions in skin nails and scalp.
- Lesion accompanied with intense itching.

- **PREVENTION AND CONTROL OF INFECTIOUS DISEASES:**
- Maintenance of personal and public hygiene.
- Personal hygiene includes Consumption of clean drinking water, food vegetable fruits. Keeping the body clean.
- Public hygiene includes Proper disposal of waste and excreta
- Periodic cleaning water reservoirs, pools.
- Avoiding close contact with the infected persons.
- For vector borne diseases controlling vectors and the breeding places.
- Avoiding stagnation of water in and around residential areas.
- Use of mosquito nets.
- Window and doors must be fitted with wire mesh.
- All these precautions are use full for vector borne disease like dengue and Chickungunya, malaria and filarial etc.


Thank
you