

Parasitology 2

Objectives:

1. Define common terms describing host-parasite relationship.
2. Outline the broad classification of parasites.
3. Name examples of protozoan parasites.
4. Describe the life-cycle of *Giardia lamblia* as an example of intestinal protozoa.
5. Describe the main stages of the life-cycle of *Plasmodium* as an example of blood and tissue protozoa.

Infection: The entry, development and multiplication of an infectious agent in the body of humans or animals.	
inapparent (asymptomatic)	manifest (symptomatic) infection

Host: A person or other living animal which harbours an infectious agent under natural conditions.	
Definitive (primary host) parasite passes its sexual stage	Intermediate (secondary host) parasite passes its larval or asexual stages

Carrier : A person or animal that harbours a specific infectious agent in the absence of discernible clinical disease and serves as a potential source of infection	
Pathogenesis Production and development of disease	pathogenicity Capability of an infectious agent to cause disease in a susceptible host

CLASSIFICATION OF PARASITES

PROTOZOA	HELMINTHS
Unicellular Single cell for all functions	Multicellular Specialized cells
1: Amoebae: move by pseudopodia. 2: Flagellates: move by flagella. 3: Ciliates: move by cilia 4: Apicomplexa (Sporozoa) tissue parasites	<u>Round worms (Nematodes):</u> - elongated, cylindrical, unsegmented. <u>Flat worms :</u> - Trematodes: leaf-like, unsegmented. - Cestodes: tape-like, segmented.

Parasitic Protozoa

	Parasite	Disease
1- Intestinal	Giardia lamblia	giardiasis
	Entamoeba histolytica	amoebiasis
2- Blood and tissues	Plasmodium spp	malaria
	Leishmania major	Cutaneous leishmaniasis



Notes:

- **Parasitism** : A relationship between (the parasite) benefits, association with (the host) "**harmed** in some way"
- Some of parasitism types : **ectoparasite, endoparasite, zoonosis**
- **Commensalism**: A relationship between (the parasite) benefits, association with (the host) " is **neither harmed** or **helped** by the association"
- **Main species of malaria**: *Plasmodium (falciparum (the most dangerous one), vivax, ovale and malariae)*
- **The Giardia life cycle**: cyst → trophozoite → asexual replication → trophozoite and cyst expel outside host → only **cyst** can survive (it is the infective and the diagnostic stage of *Giardia lamblia*)
- **Plasmodium life cycle**:
 - **Inside the mosquito**: zygote appears on mosquito's stomach wall → **where** it will mature to **sporozoites** and locate itself inside the salivary gland of the mosquito.
 - The mosquito will carry the sporozoites and **inject the human body** with it.
 - The sporozoites will go under a **Hepatic (pre-erythrocytic) cycle**{ in which sporozoites will mature and grow inside the human's liver }.
 - **After that** it will go under **Exo-erythrocytic cycle**{ in which the **Hypnozoites** will go to the circulation and attack the RBC's }.
 - **Then** part of them will keep on **attacking the RBC's**{ **Erythrocytic cycle**} causing death of all RBC's inside the human's body **AND** the other part will **form gametocytes** which will be carried by another mosquito and mature there.

