Parasite and Stool examination

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Parasite definition

- A parasite is an organism that lives within or on a host. The host is another organism.
- The parasite uses the host's resources to fuel its life cycle. It uses the host's resources to maintain itself.
- Parasites are not a disease, but they can spread diseases. Different parasites have different effects.

Web Atlas of Human Parasitology


Ascaris lumbricoides


Ascaris lumbricoides

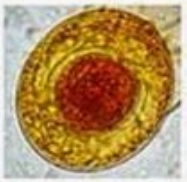

Ascaris lumbricoides infértil


Ancilostomídeo


Enterobius vermicularis

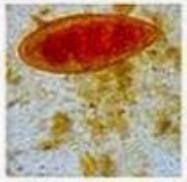

Trichuris trichiura


Taenia sp.


Hymenolepis sp.


Diphylobotrium sp.


Dipylidium sp. (aglomerado de ovos)


Schistosoma mansoni


Fasciola hepatica


Toxocara canis


Taenia saginata proglóte


Taenia solium proglóte


Dipylidium sp. proglótes


Strongyloides stercolaris Larva


Ancilostomídeo sp. (larva filarióide)

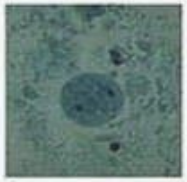

Enterobius vermicularis (larva fêmea)

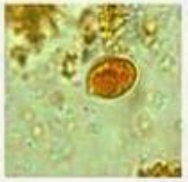

Enterobius vermicularis (larva macho)


Entamoeba coli


Entamoeba histolytica

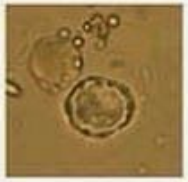

Giardia lamblia


Endolimax nana

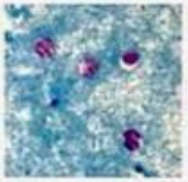

Iodamoeba butschlii

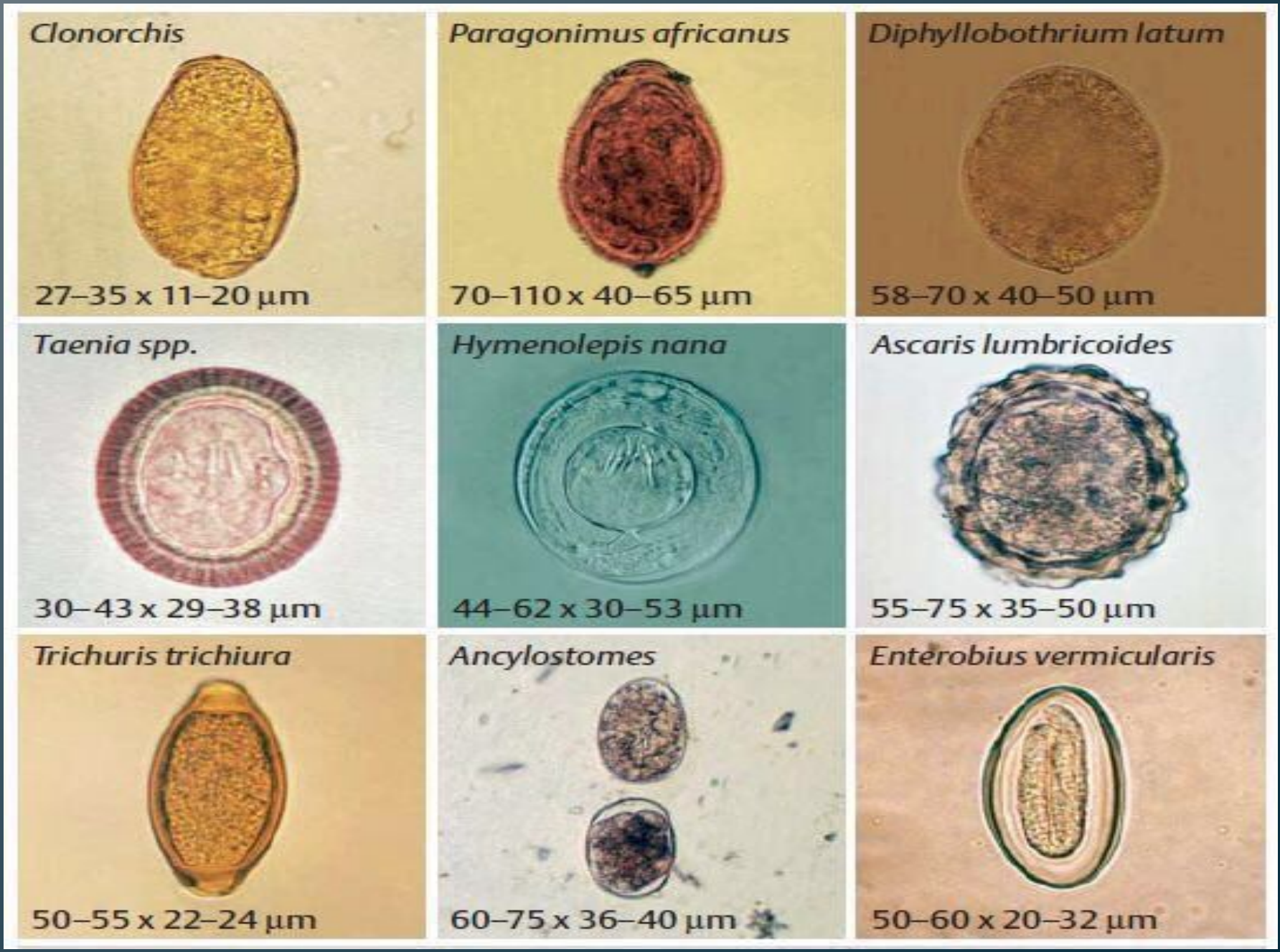

Chilomastix mesneli


Balantidium coli


Blastocystis sp.


Isospora sp.


Cryptosporidium sp.


Clonorchis
27–35 x 11–20 µm
Paragonimus africanus
70–110 x 40–65 µm
Diphyllobothrium latum
58–70 x 40–50 µm
Taenia spp.
30–43 x 29–38 µm
Hymenolepis nana
44–62 x 30–53 µm
Ascaris lumbricoides
55–75 x 35–50 µm
Trichuris trichiura
50–55 x 22–24 µm
Ancylostomes
60–75 x 36–40 µm
Enterobius vermicularis
50–60 x 20–32 µm

Type of parasites

1- Endoparasite

Endoparasites These live inside the host. They include heartworm, tapeworm, and flatworms. An intercellular parasite lives in the spaces within the host's body, within the host's cells. They include bacteria and viruses. Include:

- Protozoa (toxoplasma, plasmodium, Entamoeba histolytica)
- Helminth (round worm, flat worm, tape worm)

- **2- Ectoparasitism**

Ectoparasites are parasites that live on the outside of the host's body include:

- Lice
- Tick
- Mites

Stool examination

- Stool examination: there are many kinds of stool examination that can be used to identify many kinds of parasites, bacteria, viruses, and fungi.
- The most popular stool test that be used to identify infection is general stool examination

Collection of stool sample

1- The stool sample has collected in a clean and dry container, the fecal sample must be free from urine and water that will destroy trophozoites, if present, also the presence of dirt also causes identification problems (artifact).

2- The amount of stool sample approximately 2 grams.

3- The fecal sample should be brought to the lab and examined as soon as it is passed, to avoid deterioration of protozoa and alterations of the morphology of protozoa and helminths, especially in diarrheal specimen.

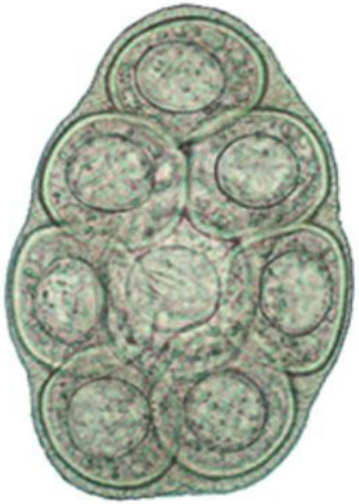
4- The specimen container should be clearly labelled with the patient's name, date, and time of passage of the specimen.

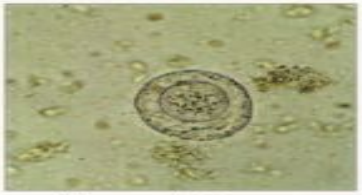
Containers for stool and other samples:

Composition of Stool

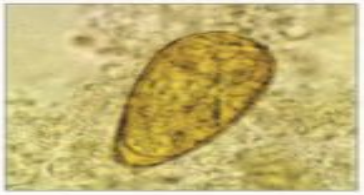
- ¾ Water, ¼ Solid
- Undigested and Unabsorbed food
- Intestinal secretions, Mucous
- Bile pigments and Salts
- Bacteria and Inorganic material
- Epithelial cells & Leukocytes

Nematodes	 *Capillaria philippinensis*	 *Enterobius vermicularis*	 *Trichuris trichiura*	 *Ascaris lumbricoides* fertile	 *Ascaris lumbricoides* infertile	 Hookworm	 *Trichostrongylus* spp.

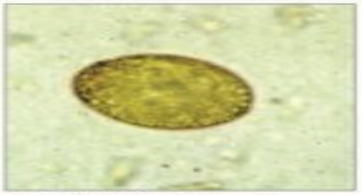
Cestodes	 *Taenia* spp.	 *Hymenolepis nana*	 *Hymenolepis diminuta*	 *Diphyllobothrium latum*	 *Dipylidium caninum*



Hymenolepis nana



Paragonimus species

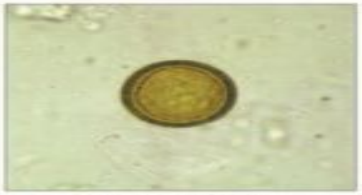


Diphyllobothrium latum

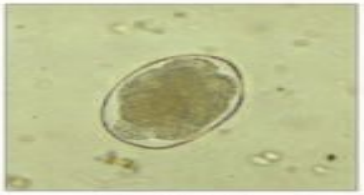
Clonorchis

Hymenolepis diminuta

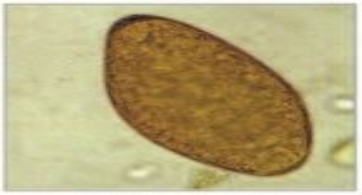
Trichuris trichiura



Taenia species



Hookworm



Fasciola species

General stool examination

1- visual examination or macroscopic examination

- color
- odor
- consistency of stool (watery (diarrhea), solid, semi solid)
- presence of pus or blood
- presence of adult worm (Ascaris)

2- **microscopic examination: help to diagnosis the presence of microorganism in intestine especially parasites**

a. place a drop of saline a clean slide.

b. place a small piece of stool on the slide and mix with saline, cover with a cover slip. If the specimen is watery or contain mucus, the examination prefers to be done without saline.

c. examines under 10X and 40X objectives.

d. report the presence of :

- pus cells
- RBCs
- Amoebas, flagellates
- Eggs, larvae & cysts.

Saline Specimen Preparation

Artifact: objects sometimes mistaken for helminth egg or protozoan cyst