

بسم الله الرحمن الرحيم

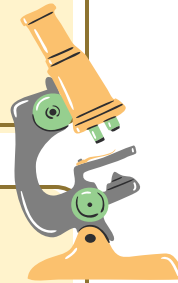


FINAL | Lecture # 2

Micro lab2

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Reviewed by: **Raneem AH**



وَإِن تَتَوَلَّوْا يَسْتَبَدِلْ قَوْمًا غَيْرَكُمْ ثُمَّ لَا يَكُونُوا أَمْثَلَكُمْ

اللهم استعملنا ولا تستبدلنا



إشهاد

Parasites that are pathogenic to GI system



In this lecture , you should know the structure of :

- ❑ The **trophozoite** and the **cyst** of each **Protozoa**.
- ❑ The **egg** and the **worm** of each **Helminths**.
- ❑ The information mentioned besides each picture.



Entamoeba histolytica

Trophozoite

- trophozoites

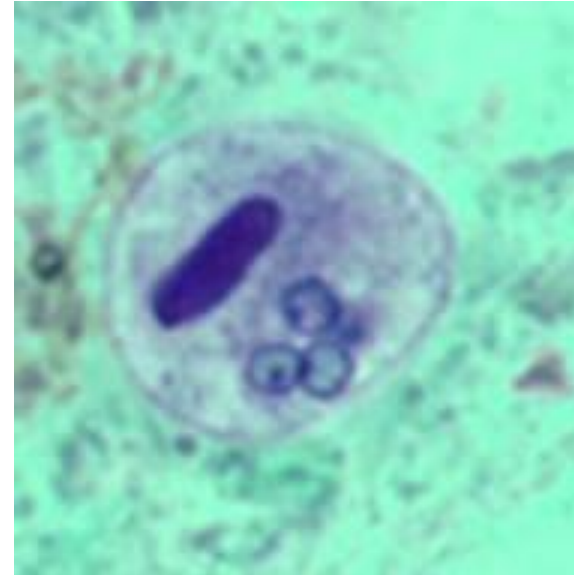
- 15-20 μm
- extended pseudopodia
- progressive movement



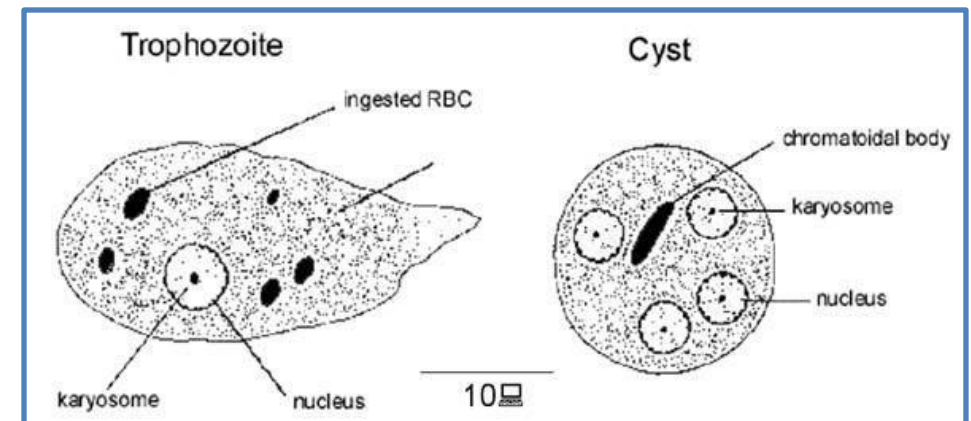
Cyst

- cysts

- 12-15 μm
- 4 nuclei (mature)
- blunt chromatoid bodies



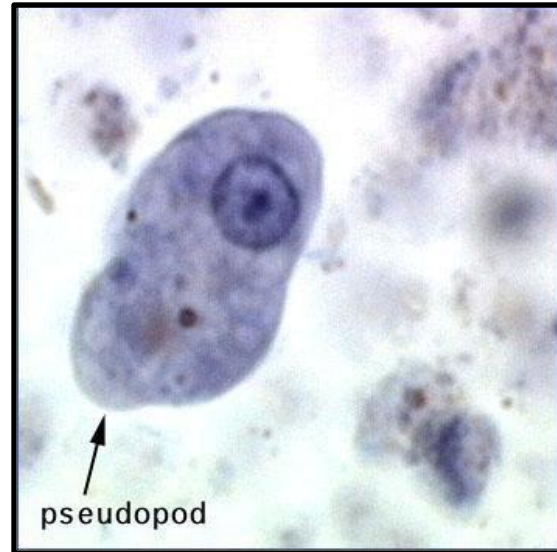
- *Entamoeba histolytica* is a protozoa , class pseudopodia.
- Trophozoite is oval in shape and larger than the cyst and they have different nuclei and chromatin bodies number.



Entamoeba Coli

Trophozoite

- trophozoites
- 20-25 μm
- broad blunt pseudopodia



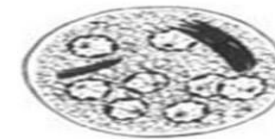
Cyst

- cysts
- 15-25 μm
- 8 nuclei (mature)
- pointed chromatoid bodies (less prominent)



- Differentiate between *E. histolytica* and *E. coli* in the number of the nuclei and the chromatin bodies.

Entamoeba coli



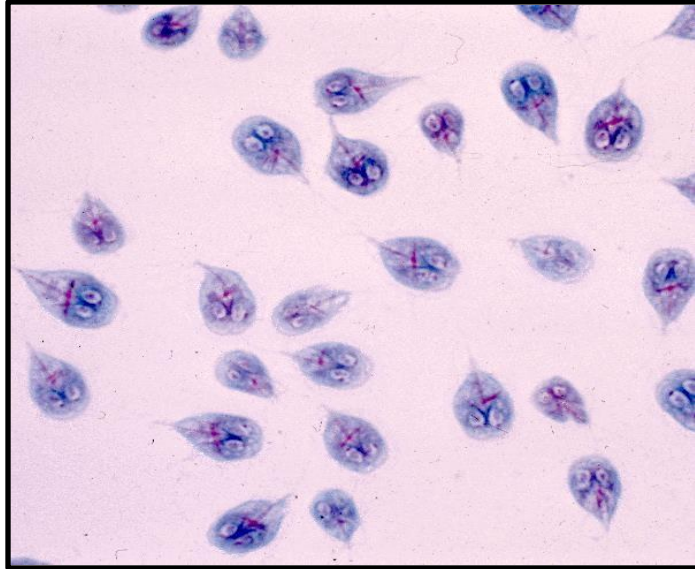
Cyst



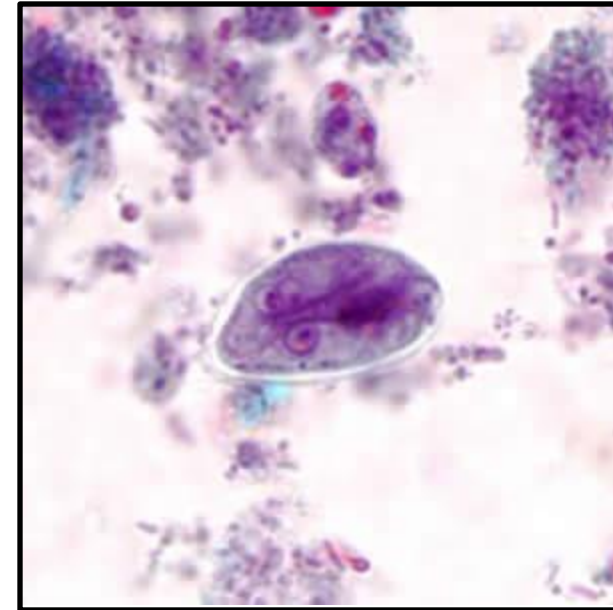
Trophozoite

Giardia lamblia

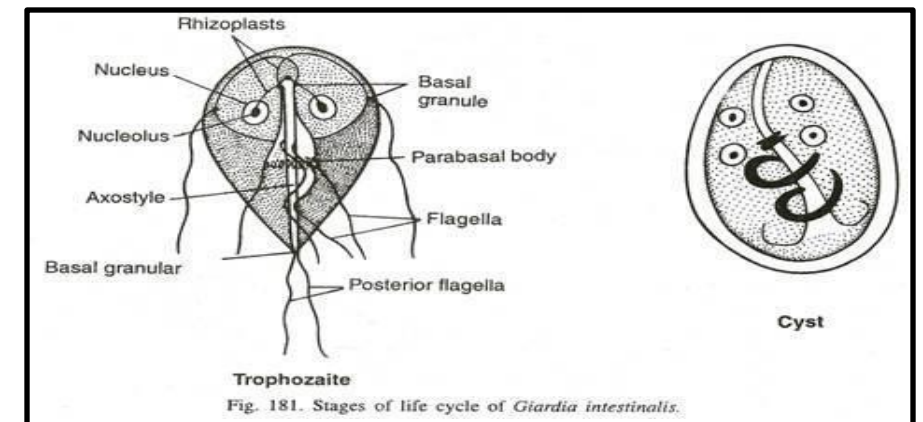
Trophozoite



Cyst



- *Giardia lamblia* is a protozoa, class flagellate.
- Leaf or owl shaped with two prominent nuclei.
- Cyst ➡ flagella is internal.
- Trophozoite ➡ flagella is external.

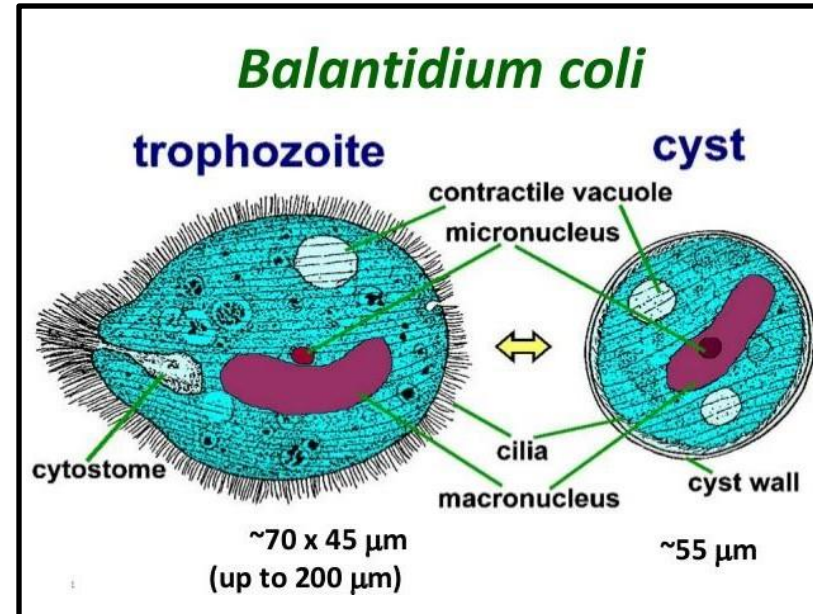


Balantidium coli

Trophozoite



Cyst



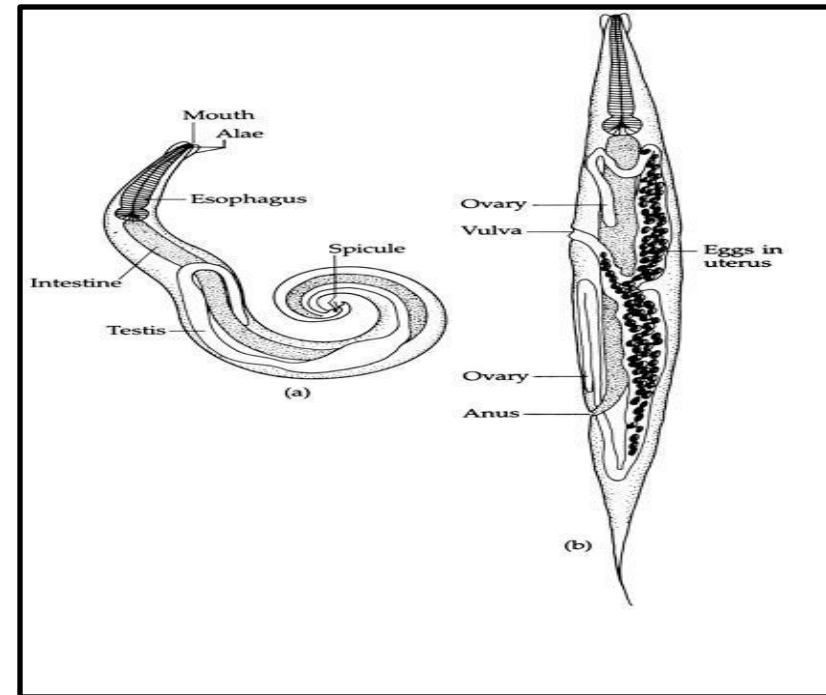
- *Balantidium coli* is a protozoa, class cilia.
- Trophozoite and cyst differ in the structure of cilia
- (short and uniform cilia all over the wall of the trophozoite, but invisible or retracted in the case of the cyst).
- It's special for the kidney shaped nucleus.

Enterobius Vermicularis (Nematode)

Worm



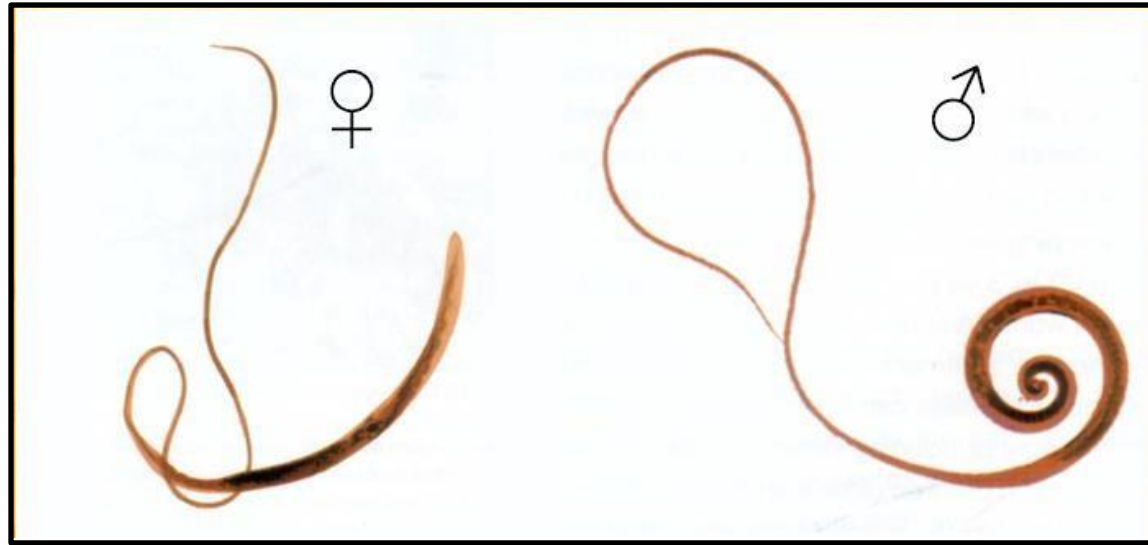
Egg



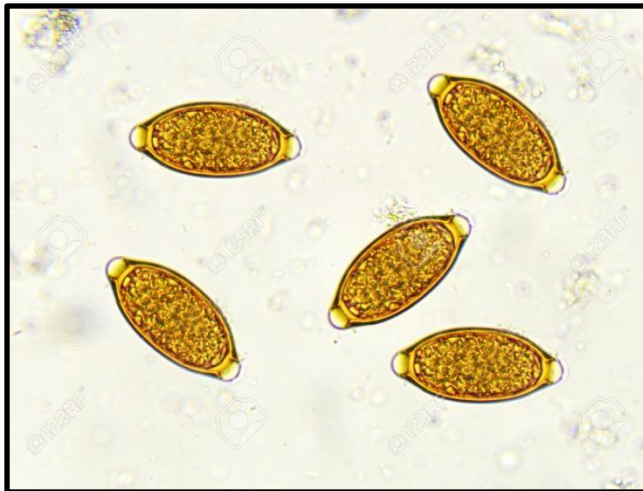
- *Enterobius vermicularis* is a helminths, phyla nematode (roundworm) thin and thread- like.
- The egg is D-shaped.

Trichuris Trichiura

Worm



Egg



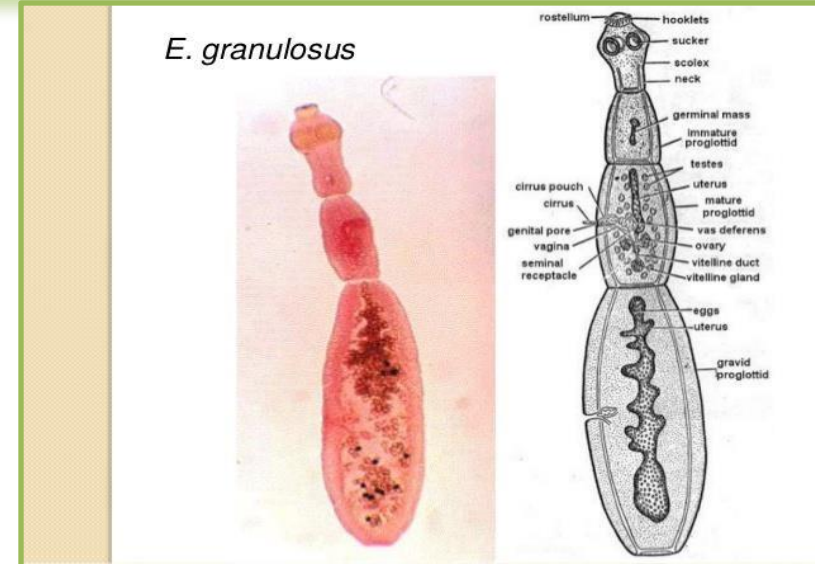
- Trichuris trichiura is a nematode (roundworm).
- Commonly known as the whipworm due to its whip-like shape.
- The egg is barrel-shaped with two poles resembling 'handles'.

Echinococcus granulosus (cestode)



Ova

- ***Echinococcus granulosus*** is a cestode (platyhelminths).
- The worm is short compared to *Ascaris lumbricoides* and others and it's segmented (different types of proglottids).



Worm

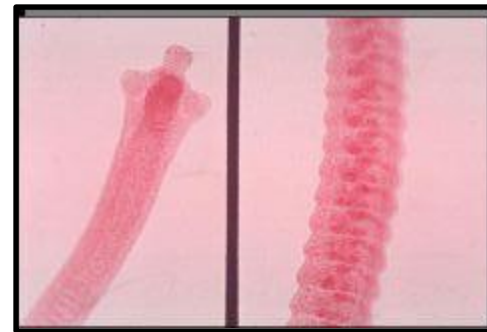
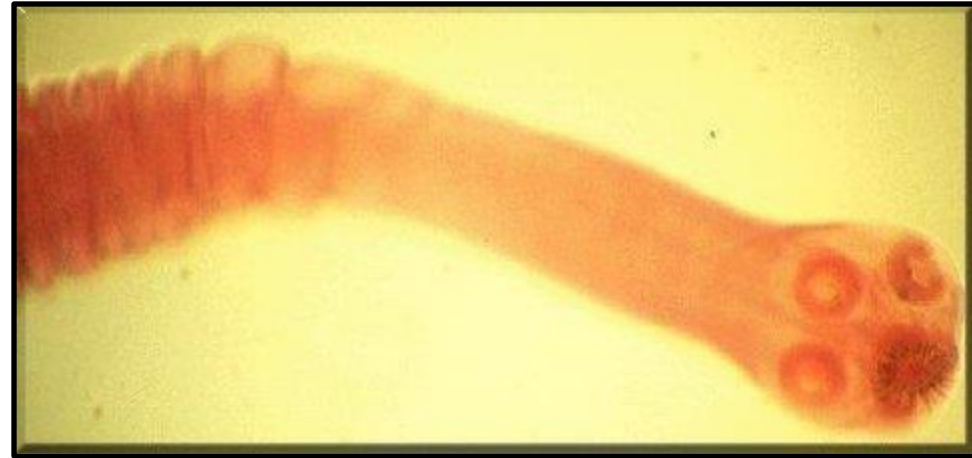
In cestodes, the body is made up of segments called proglottids. These proglottids go through stages of maturity:

- Immature proglottids
- Mature proglottids
- Gravid proglottids (Doctor mentioned this type)

Hymenolepis Nana (Cestode)



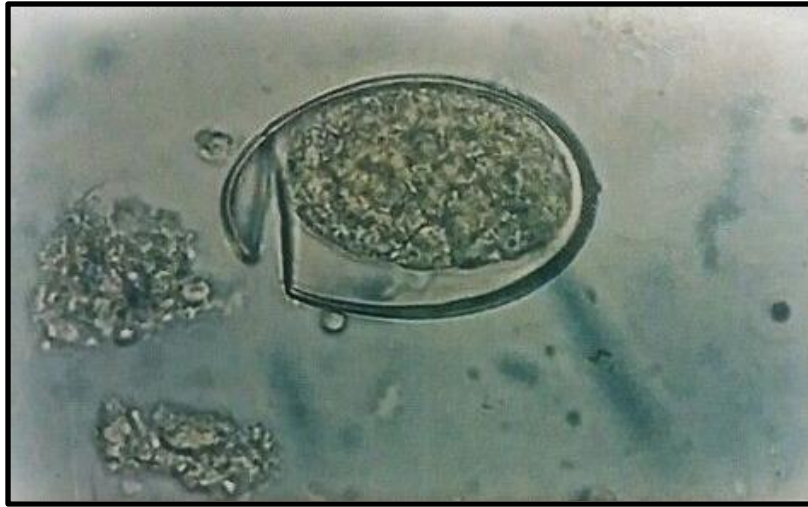
Ova



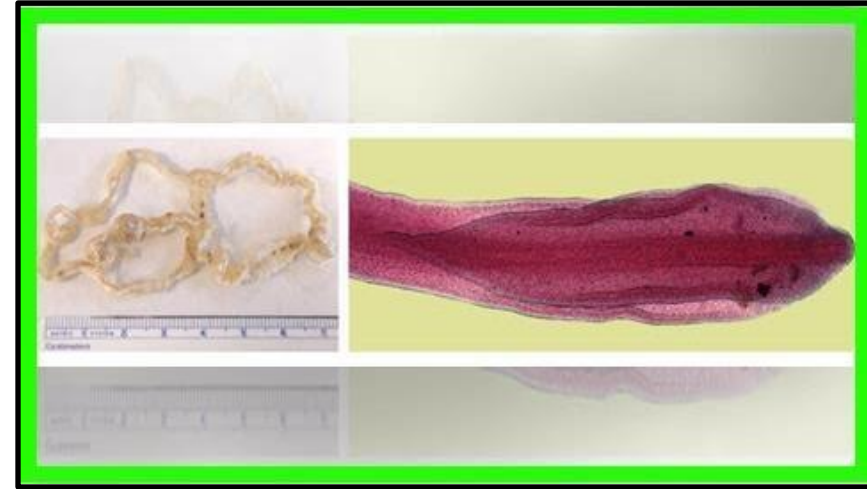
Worm

- ***Hymenolepis nana*** is a cestode (Platyhelminthes).
- Notice the scolex (the head of the worm) that contains hooks.

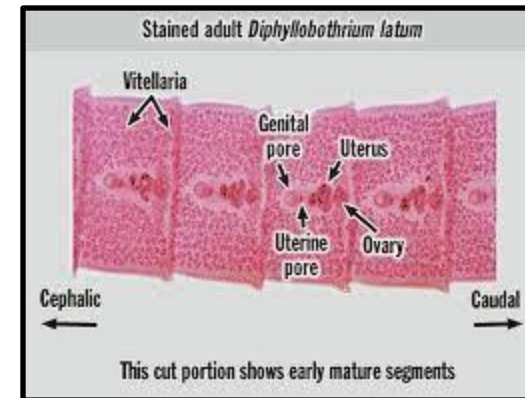
Diphyllobothrium latum(Cestode)



Egg

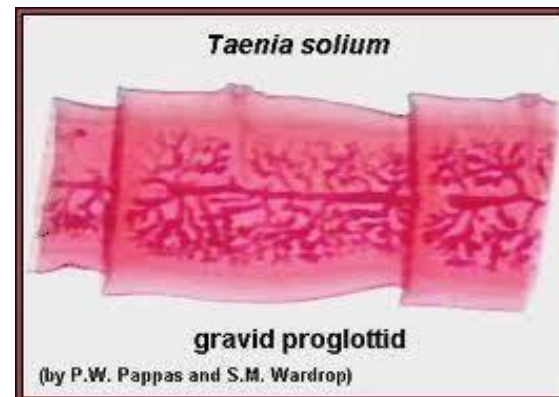


Notice the segments (gravid).



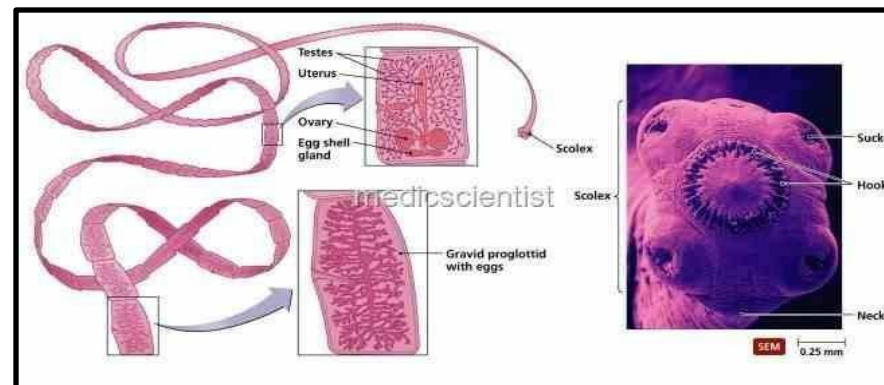
Worm

Taenia solium (Cestode)

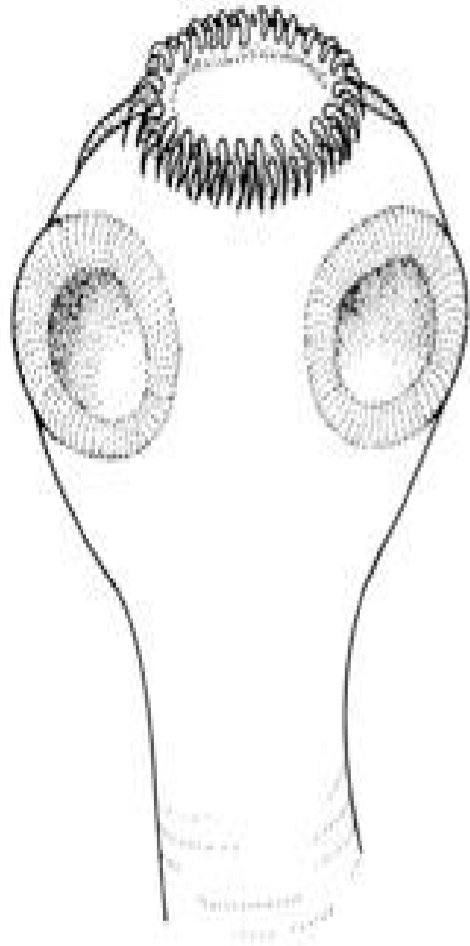


Found in pork meat

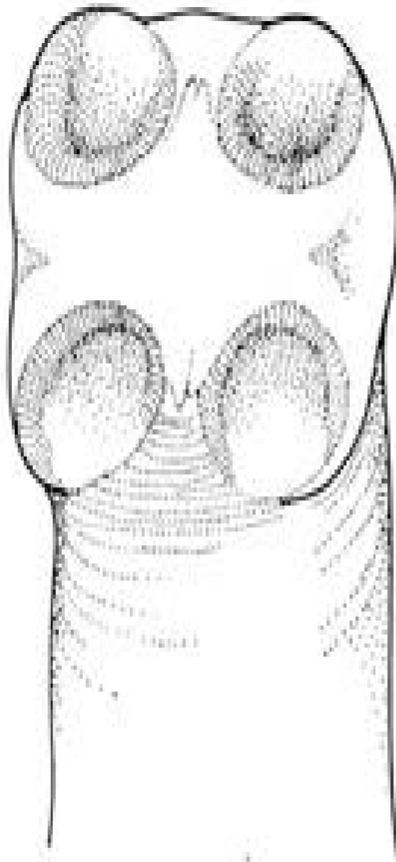
Taenia saginata (Cestode)



Found in beef



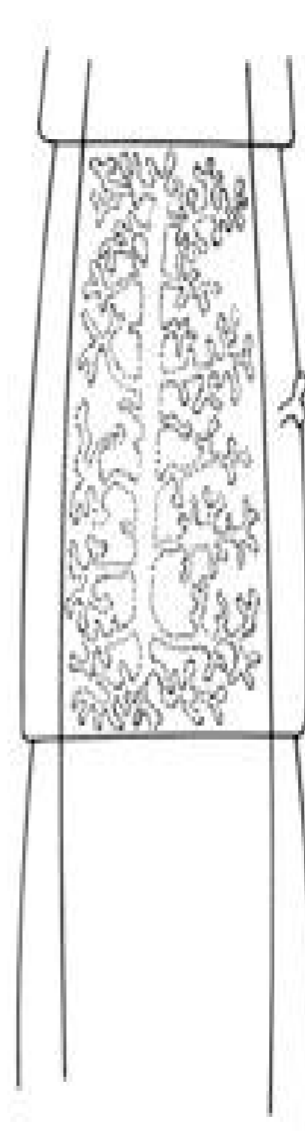
Taenia solium



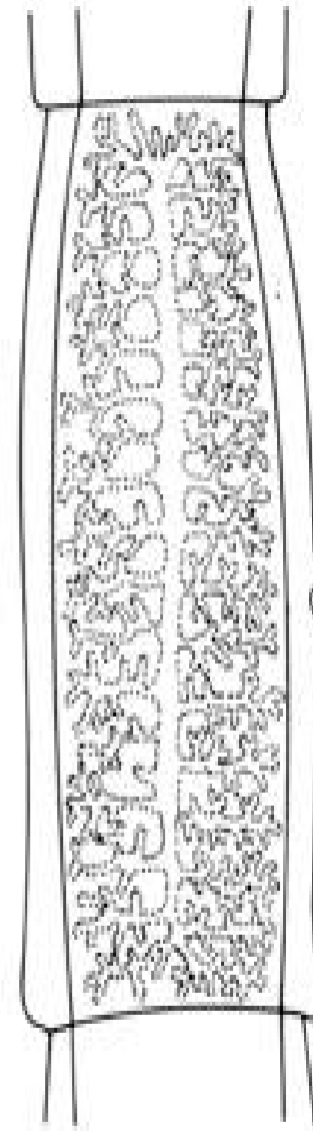
Taenia saginata

(a)

Scolex comparison



Taenia solium

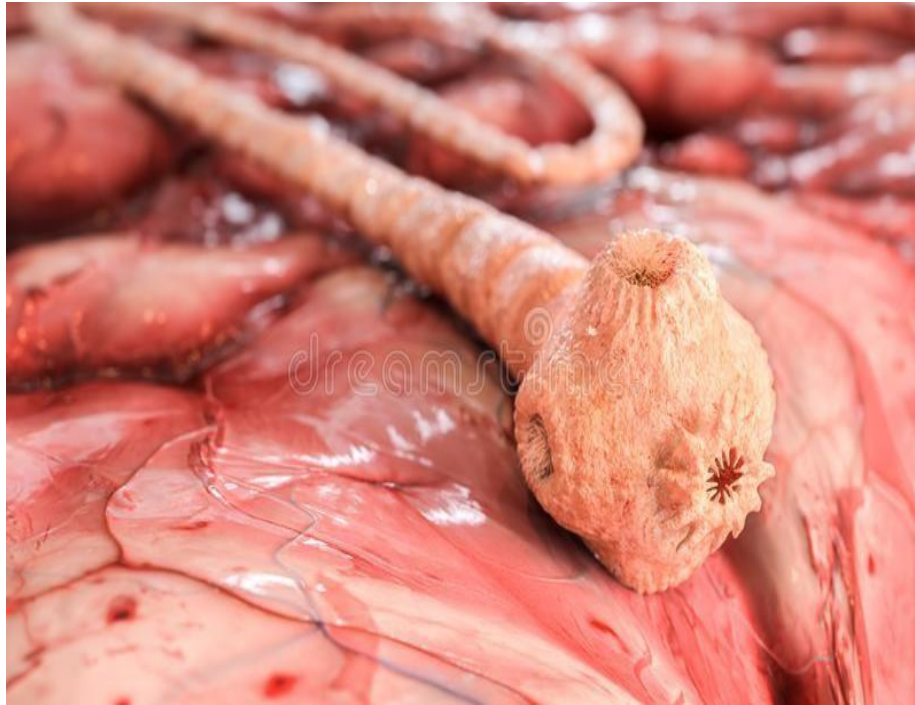


Taenia saginata

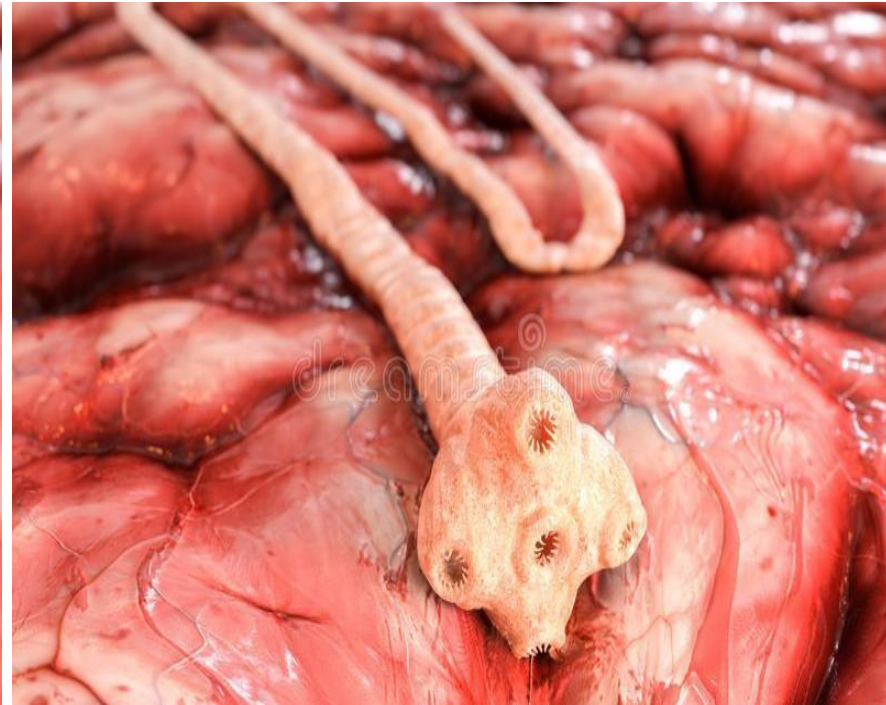
(b)

Gravid comparison

Taenia Solium



Taenia saginata

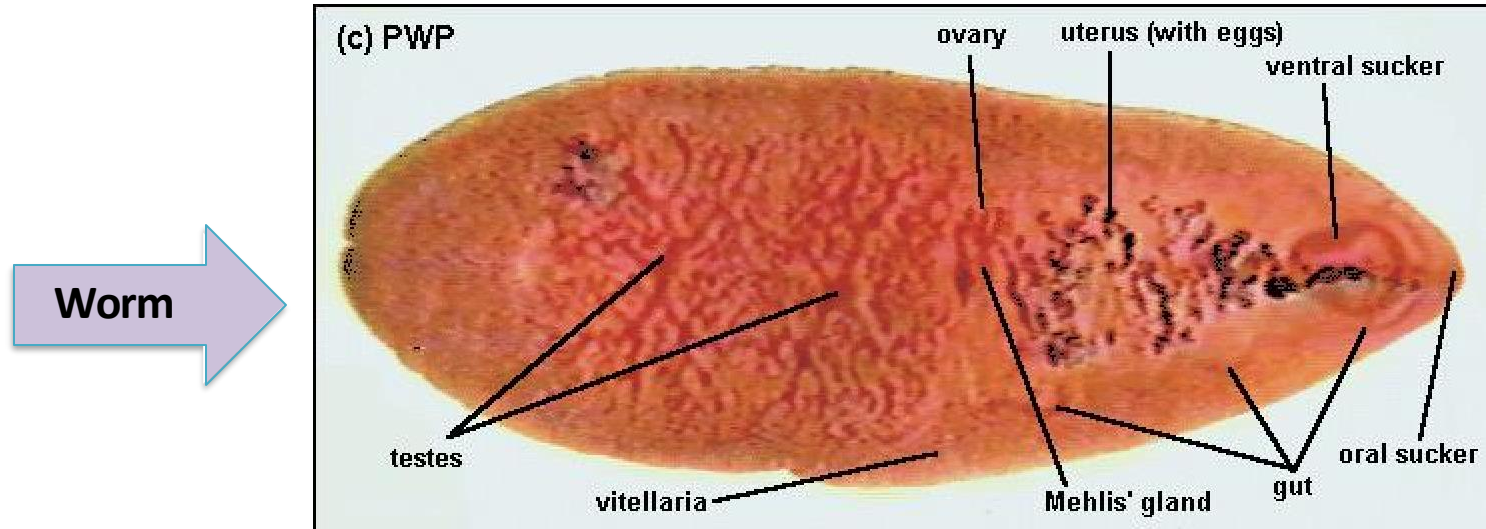


Electron microscope images.

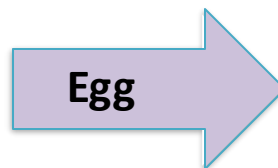
Taenia solium* VS. *Taenia saginata

	<i>Taenia solium</i>	<i>Taenia saginata</i>
Where it's found	Pork	Beef
Scolex (the head)	Has suckers and hooks	Has suckers without hooks
Gravid (uterus and eggs)	Shorter	Longer

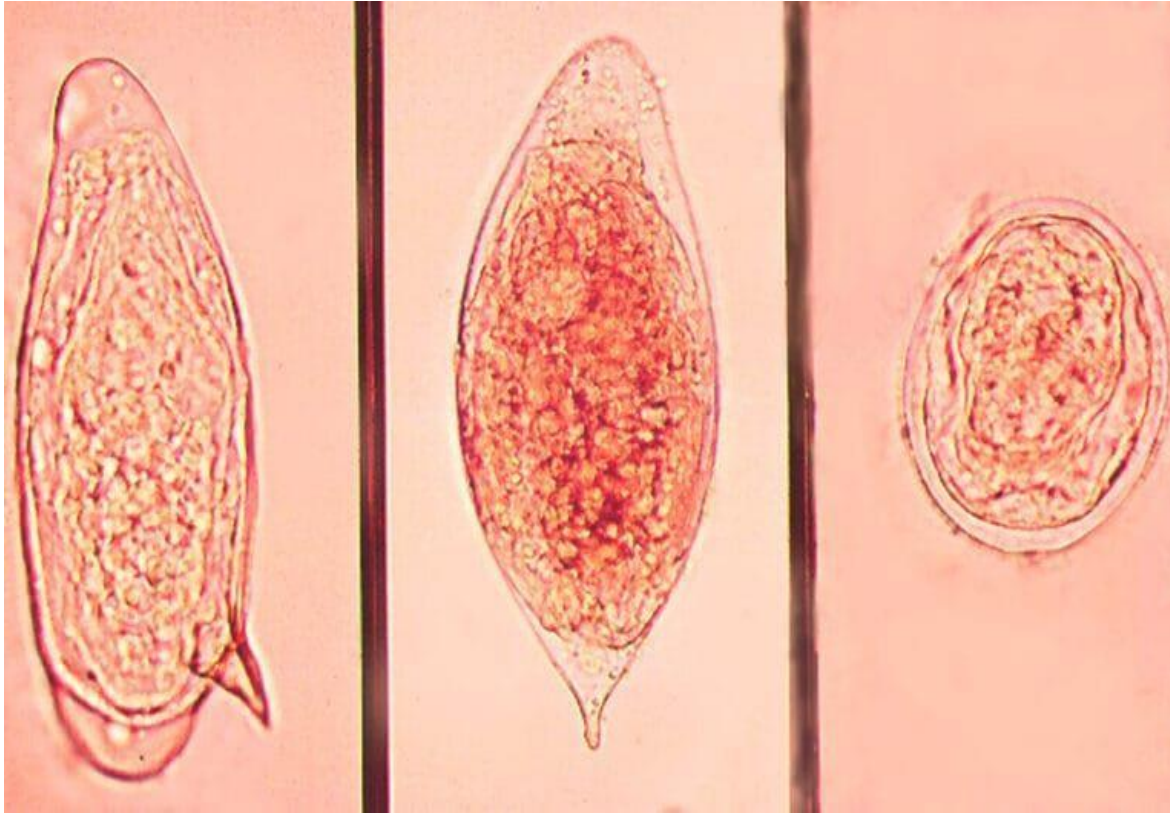
fasciolosis buski (Trematode)



- ***Fasciolosis buski*** is a trematode that is leaf-like shaped.
- It is very big and can be seen with the naked eye.
- The egg has an **operculum** which is a cap- like lid at the end.



Schistosoma (Trematode)



Schistosoma
mansoni (stool)

Schistosoma
haematobium (urine)

Schistosoma
japonicum (stool)



- **Spine location of each egg:**
 - ❑ *S. mansoni*: lateral spine.
 - ❑ *S. haematobium*: terminal spine.
 - ❑ *S. japonicum*: small spine (hard to see).



The background is a complex, colorful geometric pattern composed of various triangles and polygons in shades of blue, green, yellow, orange, and red. A large white circle is centered on the slide, containing the main text.

Thank you for listening!

QUESTIONS?
ALWAYS
WELCOME!

For any feedback, scan the code or click on it.



Corrections from previous versions:

Versions	Slide # and Place of Error	Before Correction	After Correction
V0 → V1			
V1 → V2			

رسالة من الفريق العلمي:

اللَّهُمَّ اغْفِرْ لِي ذَنْبِي كُلَّهُ: دِقَّةً وَجِلَّةً، وَأَوَّلَهُ وَآخِرَهُ، وَعَلَانِيَتَهُ وَسِرَّهُ.

اللهم اجعلني ممن وقَّفته لاغتنام العشر، وكتبت له فيها الخير كله، وبلغته يوم عرفة وهو راضٍ عني.

"ما من أيامٍ العمل الصالح فيها أحب إلى الله من هذه الأيام، قالوا: يا رسول الله ولا الجهاد في سبيل الله؟ قال: ولا الجهاد في سبيل الله، إلا رجل خرج بنفسه وماله ثم لم يرجع من ذلك بشيء" رواه البخاري.
لا تتسونا وأهل غزة من دعائكم



الله أكبر.. الله أكبر.. الله أكبر

لا إله إلا الله

الله أكبر.. الله أكبر

ولله الحمد