

## **Platyhelminths**

1-Cestoda or Tapeworm ( *Taenia* and *Ecchinococcus*)

2-Trematoda or Fluke ( *Schistosoma* and others)

The cestodes (tapeworms) *Taenia saginata* (beef tapeworm) and *T. solium* (pork tapeworm). *Taenia solium* eggs can also cause cysticercosis.

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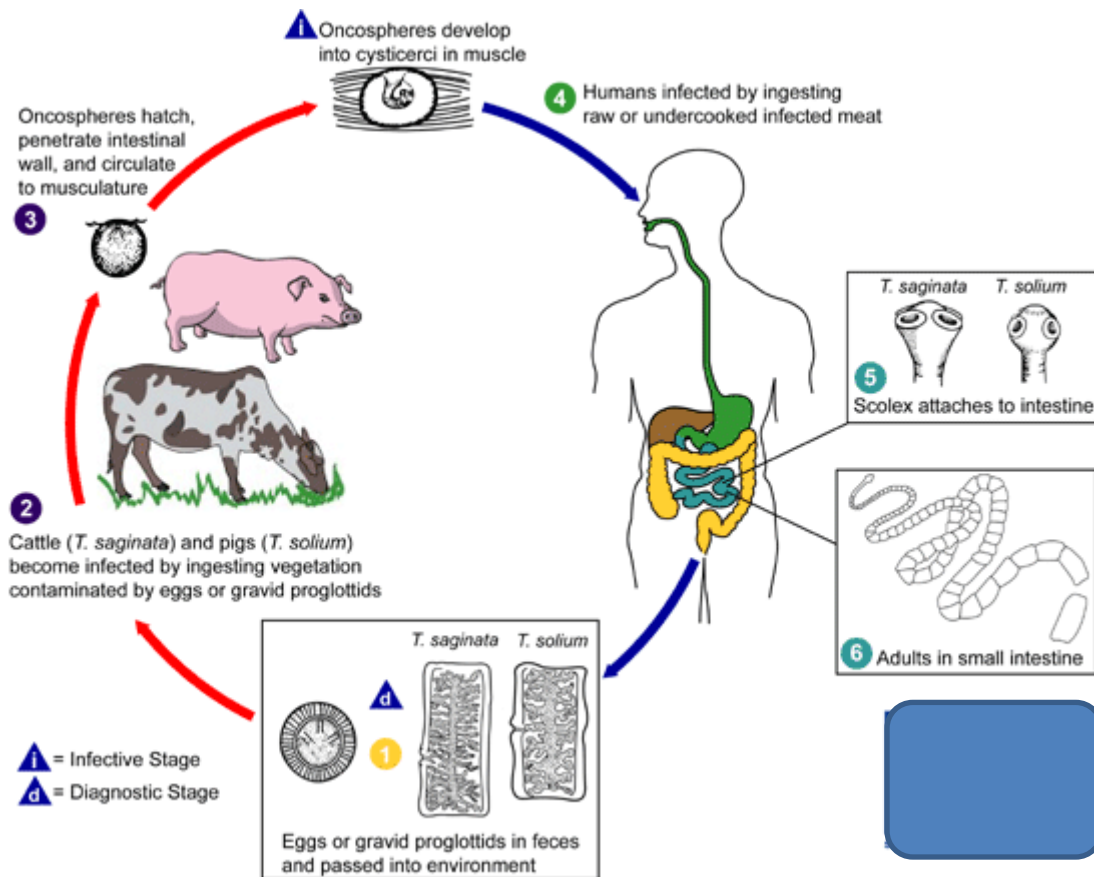
### ***Life Cycle:***

Taeniasis is the infection of humans with the adult tapeworm of *Taenia saginata* or *Taenia solium*. Humans are the only definitive hosts for *T. saginata* and *T. solium*. Eggs or gravid proglottids are passed with feces . the eggs can survive for days to months in the environment. Cattle (*T. saginata*) and pigs (*T. solium*) become infected by ingesting vegetation contaminated with eggs or gravid proglottids .

In the animal's intestine, the oncospheres hatch invade the intestinal wall and migrate to the striated muscles, where they develop into cysticerci. A cysticercus can survive for several years in the animal. Humans become infected by ingesting raw or undercooked infected meat .

In the human intestine, the cysticercus develops over 2 months into an adult tapeworm, which can survive for years. The adult tapeworms attach to the small intestine by their scolex and reside in the small intestine

Length of adult worms is usually 5 m or less for *T. saginata* (however it may reach up to 25 m) and 2 to 7 m for *T. solium*. The adults produce proglottids which mature, become gravid, detach from the tapeworm, and migrate to the anus or are passed in the stool (approximately 6 per day). *T. saginata* adults usually have 1,000 to 2,000 proglottids, while *T. solium* adults have an average of 1,000 proglottids. The eggs contained in the gravid proglottids are released after the proglottids are passed with the feces. *T. saginata* may produce up to 100,000 and *T. solium* may produce 50,000 eggs per proglottid respectively



Infection with the beef tapeworm, *Taenia saginata*, may cause mild gastrointestinal upset or passage of a motile segment in the stool.

Cattle are intermediate hosts for *T. saginata*. Humans are infected by eating cysticerci (larval form) in raw or undercooked beef and pig intermediate hosts for *T. solium*

Larva stage

Cysticercus bovis of *T. saginata*

*Cysticercus cellulosae* of *T. solium*

The larvae mature in about 2 months to adult worms that can live for several years; usually, only 1 or 2 adult worms are present. Adult *T. saginata* tapeworms are usually 4 to 12 meters in length, but can be as long as 25 meters.

*T. saginata* infection occurs worldwide but especially in cattle-raising regions of the tropics and subtropics in Africa, the Middle East, Eastern Europe, Mexico, and South America.

### Symptoms and Signs of *Taenia saginata* Infection

Patients may be asymptomatic or have mild digestive symptoms including epigastric discomfort, nausea, flatulence, diarrhea, or hunger pains. Passage of a motile segment (proglottid) often brings an otherwise asymptomatic .

### Diagnosis of *Taenia saginata* Infection

- Microscopic examination of stool for ova and proglottids

The stool should be examined for proglottids and ova; ova may also be present on anal swabs. The ova of *T. saginata* are indistinguishable from those of *T. solium* (pork tapeworm)