T. saginata

- Usually less than 5 m long but can grow up to 25 m; 12 mm broad.
- The head, called the scolex, is pear-shaped.
- It has no hooks and no neck.
- It has four suckers in the head.
- The body is long and flat with several hundred segments called proglottids - hermaphroditic, egg-producing sections.
- Each proglottid is 18 x 6 mm with a branched uterus.
- Eggs are round and yellow-brown in colour.

T. solium

- It has a variable size and can be up to 7 m long; it has a neck and a long flat body.
- The scolex is globular in shape.
- There are four suckers and hooks.
- *Proglottids are 5 x 10 mm and also have branched uteri.*

Cysticercosis

T. solium can also lead to cysticercosis whereby larval cysts infiltrate the lung, liver, eye or brain.

This results in inflammation leading to clinical features such as severe sight impairment and neurological symptoms. Making it an important cause of morbidity and mortality worldwide.

The life cycle of *T saginata*.

Gravid segments break off from the worm and are carried in the fecal bolus or by their own crawling activity to the soil.

The segments move away from the bolus and adhere to grass. If ingested by a bovine intermediate host, the segments are digested open in the gut, each releasing 50,000 to 100,000 eggs.

The eggs hatch, each releasing a six-hooked larva, the oncosphere (also called the hexacanth),

which penetrates the gut wall and reaches the muscles via the circulation.

There the oncosphere fills with fluid and develops into the 8-mm cysticercus.

If human eats raw or undercooked infected beef, the cysticercus is digested free and inverts the scolex,

which attaches to the wall of the small intestine and begins to bud off the long chain of segments.

In about 3 months the worm reaches 4-5 m in length and gravid segments begin to pass through the anus.

The worm is long-lived, surviving 5 to 20 years or more.

Treatment

Treatment is readily available for the intestinal adult worms.

Niclosamide, is a nonabsorbed oxidative phosphorylation inhibitor that kills the scolex and anterior segments on contact, after which the worm is expelled. **Praziquantel,** a synthetic isoquinoline-pyrazine derivative, is an equally effective and relatively nontoxic cesticidal compound. Since the scolex is usually but not always destroyed, and a new worm can regenerate if the scolex and a minute portion of the neck survive, the patient should be observed for several months, as egg-bearing segments can reappear in 10-12 weeks.

TABLE E1. Common Cestode Parasites of Humans, Their Typical Vectors, and Their Usual Symptoms

Parasite Species	Developmental Stage Found in Humans	Common Name	Transmission Source	Symptoms Associated with Infection
Diphyllobothrium latum	Tapeworm	Fish tapeworm	Plerocercoid cysts in freshwater fish	Usually minimal; with prolonged or heavy infection, vitamin B_{12} deficiency
Hymenolepis nana	Tapeworm, cysticercoids	Dwarf tapeworm	Infected humans	Mild abdominal discomfort
Taenia saginata	Tapeworm	Beef tapeworm	Cysts in beef	Abdominal discomfort, proglottid migration
Taenia solium	Tapeworm	Pork tapeworm	Cysticerci in pork	Minimal
Taenia solium (Cysticercus cellulosae)	Cysticerci	Cysticercosis	Eggs from infected humans	Local inflammation, mass effect; if in central nervous system, seizures, hydrocephalus, arachnoiditis
Echinococcus granulosus	Larval cysts	Hydatid cyst disease	Eggs from infected dogs	Mass effect leading to pain, obstruction of adjacent organs; less commonly, secondary bacterial infection, distal spread of daughter cysts
Echinococcus multilocularis	Larval cysts	Alveolar cyst disease	Eggs from infected canines	Local invasion and mass effect leading to organ

Parasite Species	Developmental Stage Found in Humans	Common Name	Transmission Source	Symptoms Associated with Infection
				dysfunction; distal metastasis possible
Taenia multiceps	Larval cysts	Coenurosis, bladder worm	Eggs from infected dogs	Local inflammation and mass effect
Spirometra mansonoides	Larval cysts	Sparganosis	Cysts from infected copepods, frogs, snakes	Local inflammation and mass effect