

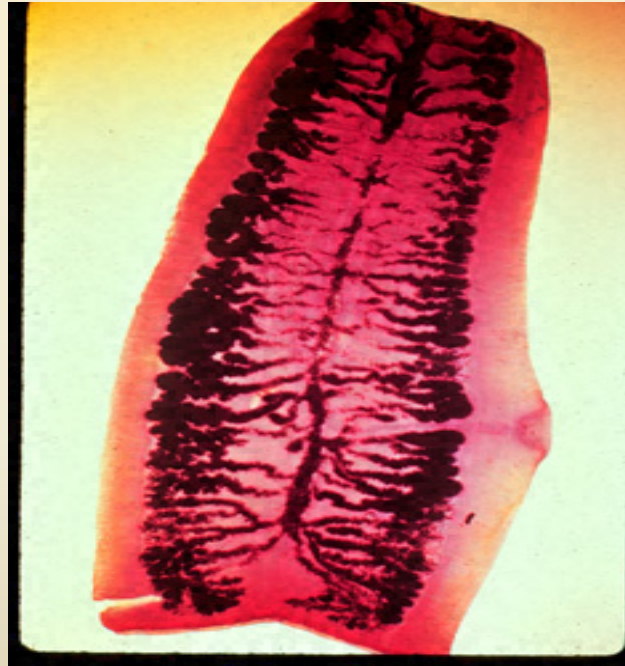
TENIA SOLIUM T. SAGINATA (TENIASIS)

Epidemiology

These cestodes have a worldwide distribution but incidence is higher in developing countries. Infection rate is as low as 1 per 1000 in most of North America and as high as 10% in the third world. Pork tapeworm shows a higher incidence but this is ..dependent on dietary habits

Morphology ●

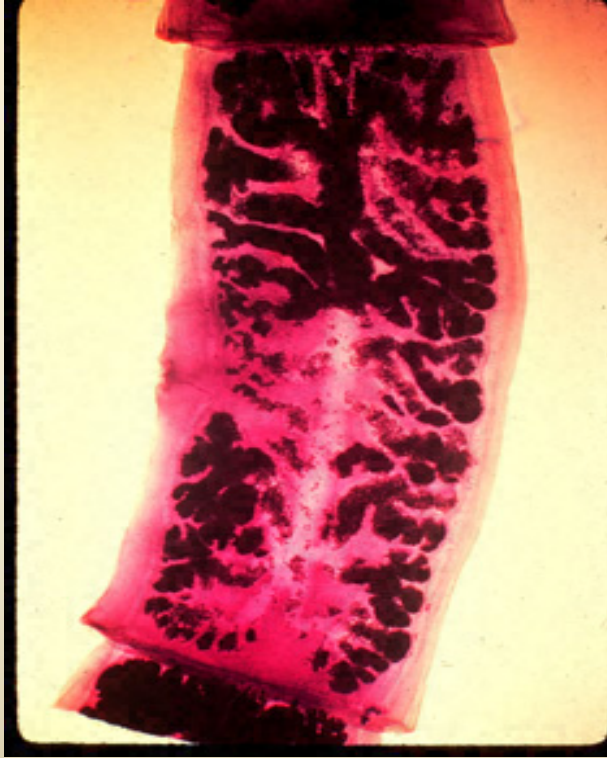
T. saginata: can be up to 10 to 12 meters long and 12 mm broad; it has a pear-shaped head (scolex) with four suckers but no hooks or rostrum. It has a long flat body with several hundred segments (proglottids). Each segment is about 18 x 6 mm with a branched uterus (15-30 branches). The egg is 35 x 45 micrometers, roundish and yellow-brown. It has peripheral radial striations and contains an embryo with 3 pear hooklets ●





Morphology

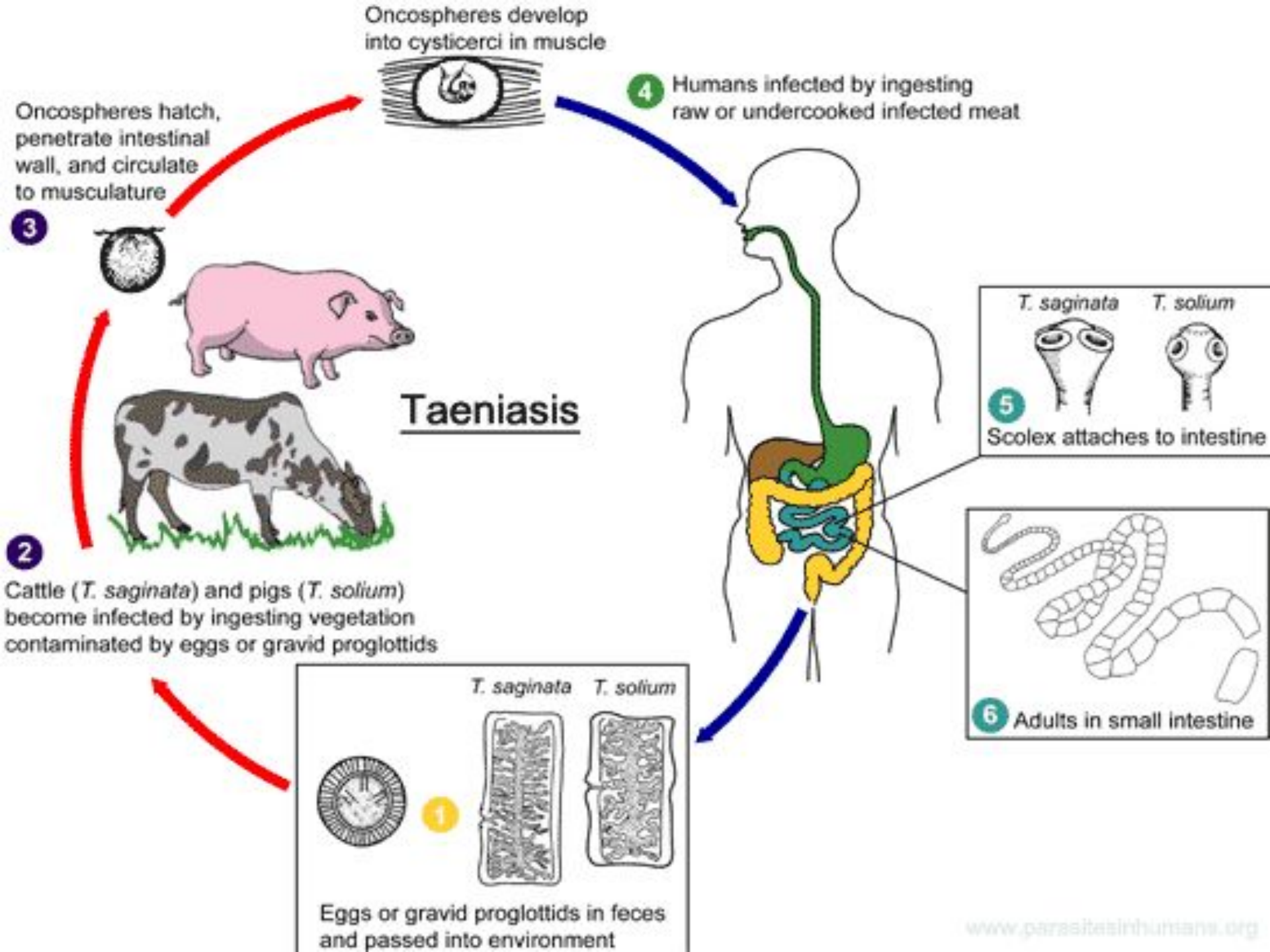
T. solium: is slightly smaller than *T. saginata*. It has a globular scolex with four suckers and a circular row of hooks (rostellum) that gives it a solar appearance. There is a neck and it has a long flat body (4 to 6 meter in length). The proglottids are 5 x 10 mm with a 7-12 branch uterus. The eggs of *T. solium* and *T. saginata* are indistinguishable





Taeniid eggs: The eggs of *Taenia saginata* and *T. solium* are undistinguishable morphologically (morphologic species identification will have to rely on the proglottids or scolices). The eggs are rounded or subspherical, diameter 31 - 43 μm , with a thick radially striated brown shell. Inside each shell is an embryonated oncosphere with 6 hooks.





- Larva The larval stage of Taenia is called as cysticercus. *Cysticercus bovis* is the larva of *T. saginata* (*Cysticercus cellulosae* is the larva of *T. solium*)



Symptoms

Light infections remain asymptomatic, but heavier infections may produce abdominal discomfort, epigastric pain, vomiting and diarrhea. The disease is often asymptomatic. Taeniasis caused by *Taenia saginata* is more noticeable than taeniasis caused by *Taenia solium* (although *T. solium* is overall more dangerous because of the risk of cysticercosis).

Heavy infection of *Taenia saginata* can cause some of the following **symptoms**

allergic reactions

constipation

diarrhea

dizziness

headache

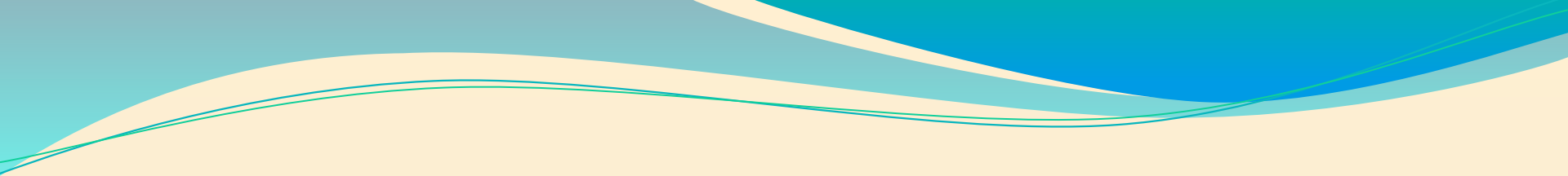
loss of appetite

nausea

obstruction of the bowel

stomach ache

weight loss



:Migrating proglottids can cause ●
(inflammation of the appendix ●
(inflammation of the bile duct ●
unpleasant surprise when seen in the feces ●

Pathology and Immunology

Gastrointestinal symptoms are due to the presence of the tape worm.

Cysticercosis symptoms are a result of inflammatory/immune responses.

.Antibodies are produced in cysticercosis and are useful epidemiological tools

Diagnosis

Diagnosis is based on the recovery of eggs or proglottids in stool or from the

.perianal area. Cysticercosis is confirmed by the presence of antibodies

Treatment and control ●

●
Praziquantel is the drug of choice. Expulsion of scolex must be assured to assume a satisfactory treatment. A thorough inspection of beef and pork, adequate cooking or .freezing of meat are effective precautions

:To **prevent** infection ●

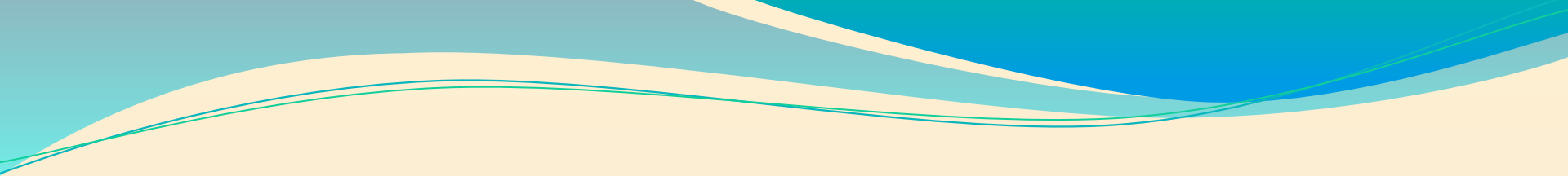
Cook beef at or above 60 °C until it is no longer pink ●
inside. Alternatively freeze the meat at or below -5 °C for
.a few days

Prevent cattle from eating in areas, where vegetation ●
.might be contaminated with humans feces



cysticercosis ●

Ingestion of *T. solium* eggs or proglottid rupture within the host intestine can cause larvae to migrate into host tissue and cause cysticercosis. This is the most frequent and .severe disease caused by *T. solium* ●



In symptomatic cases, a wide spectrum of symptoms may be expressed, including headaches, dizziness and .(occasional seizures ●

The severity of cysticercosis depends on location, size and number of parasite larvae in tissues, as well as the host immune response. Other symptoms include sensory deficits, involuntary movements, and brain system dysfunction ●

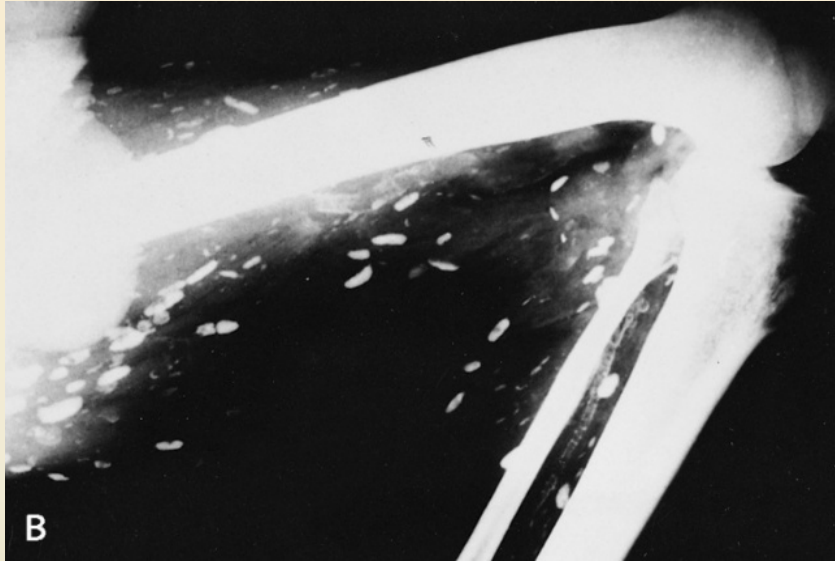
In children, ocular location of cysts is more common than cystation in other locations of the body. Heavy infection with *T. solium* can lead to neurocysticercosis, which can lead to epilepsy, seizures, lesions in the brain, blindness, tumor-like growths, and low eosinophil levels ●

- **Diagnosis** requires biopsy of the infected tissue and examination of feces.
- *T. solium* eggs and proglottids found in feces diagnoses taeniasis and not cysticercosis.
- Cysticercosis is diagnosed primarily on confirming the presence of hooks on the scolex of *T. solium*. Radiological tests, such as X-ray, CT scans which demonstrate "ring-enhancing brain lesions", and MRIs, can also be used to detect diseases. X-rays are used to identify calcified larvae in the subcutaneous and muscle tissues, and CT scans and MRIs are used to find lesions in the brain.

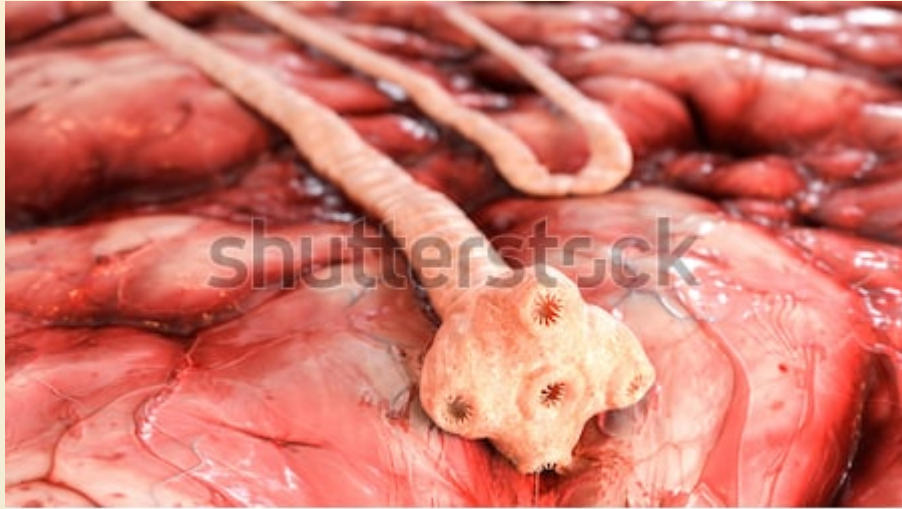
Cysticercosis It is caused by larval stage (*cysticercus cellulosae*) of *T. solium*.

- 1-Cysticercus cellulosae may be solitary or more often multiple.
- 2-Any organ or tissue may be involved, the most common being subcutaneous tissues and muscles. It may also affect the eyes, brain, and less often the heart, liver, lungs, abdominal cavity, and spinal cord.
- 3-The cysticercus is surrounded by a fibrous capsule except in the eye and ventricles of the brain. The larvae evoke a cellular reaction starting with infiltration of neutrophils, eosinophils, lymphocytes, plasma cells, and at times, giant cells.

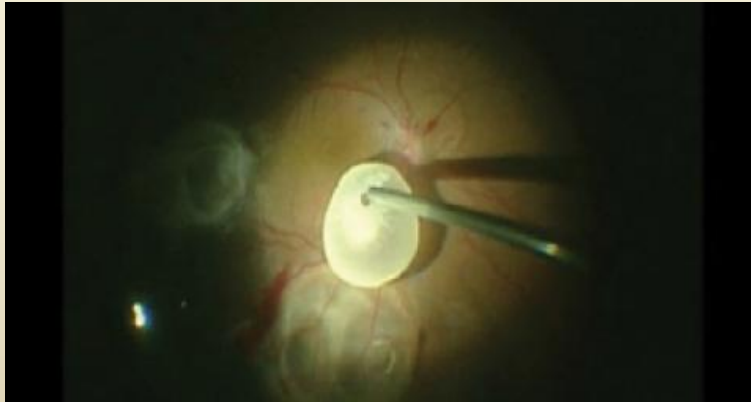
- 4-This is followed by fibrosis and death of the larva with eventual calcification.
- 5-The clinical features depend on the site affected
Subcutaneous nodules are mostly asymptomatic Muscular cysticercosis may cause acute myositis Neurocysticercosis (cysticercosis of brain) is the most common and most serious form of cysticercosis. About 70% of adult onset epilepsy is due to neurocysticercosis.







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