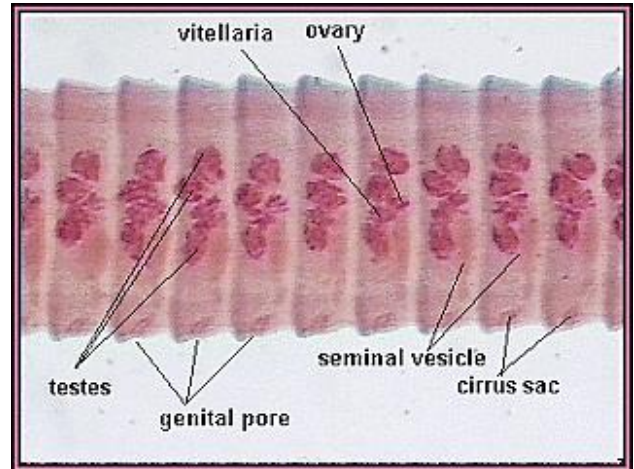
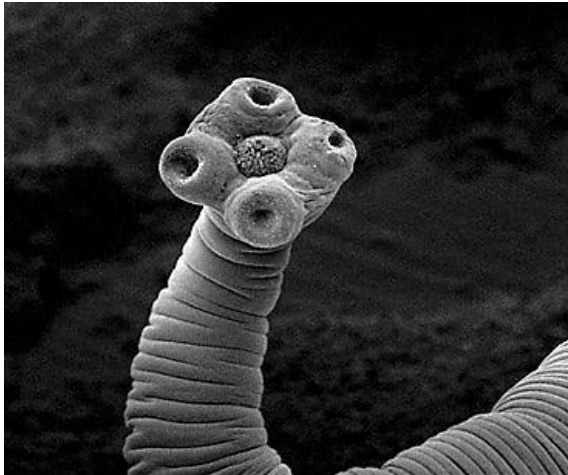


Hymenolepis nana



Hymenolepis nana (Von Siebold, 1852) Blanchard, 1891, the dwarf tapeworm, was discovered by Bilharz, in 1851, in the small intestine of a native boy autopsied in Cairo, Egypt. Dwarf tapeworm infection in human beings is primarily limited to children in warm climates.

Morphology, Biology and Life Cycle

Hymenolepis nana is the smallest of the tapeworms which parasitize the human intestine. The entire worm has a length of only 25 to 40 mm and a maximum breadth not usually exceeding 1 mm. The terminal gravid proglottids usually disintegrate before separation from the strobila, so that the eggs are thoroughly mixed with the feces. The average infection consists of a few to several worms, but thousands have reported from some patients. The eggs of *H. nana* are grayish hyaline, nearly spherical, 30 to 47 microns in diameter.

When eggs are swallowed, they hatch in the duodenum where they rapidly transform into cysticercoid larvae. These then migrate into the duodenal or jejunal canal, become attached to the mucosa, and in about 2 weeks develop into complete worms. Thus, both the larval and mature stages are developed in the same individual. Moreover, in heavy infections it seems entirely probable that reinfection may occur by internal autoinfection, due to hatching of eggs in the upper levels of the small bowel.

Certain strains of the murine variety of *H. nana* can utilize fleas and beetles for development of the cysticercoid larval stage.



Eggs



Cynticeroid

Pathogenicity and Symptomatology

Infection with a few *Hymenolepis nana* may produce no detectable symptoms or it may be responsible for diarrhea, anorexia, vomiting, insomnia, loss of appetite and weight, irritability and urticaria. Heavy infection invariably is pathogenic, causing moderate to profuse diarrheic stools, abdominal pain, anorexia and exaggerated nervous disorders, or extreme apathy.

Diagnosis and Treatment

Diagnosis is based on recovery of the species characteristic eggs in the stools. Treatment is available. A prescription drug called praziquantel is given. **Praziquantel**, adults and children, 25mg/kg in a single-dose therapy. Sometimes more than one treatment is necessary.

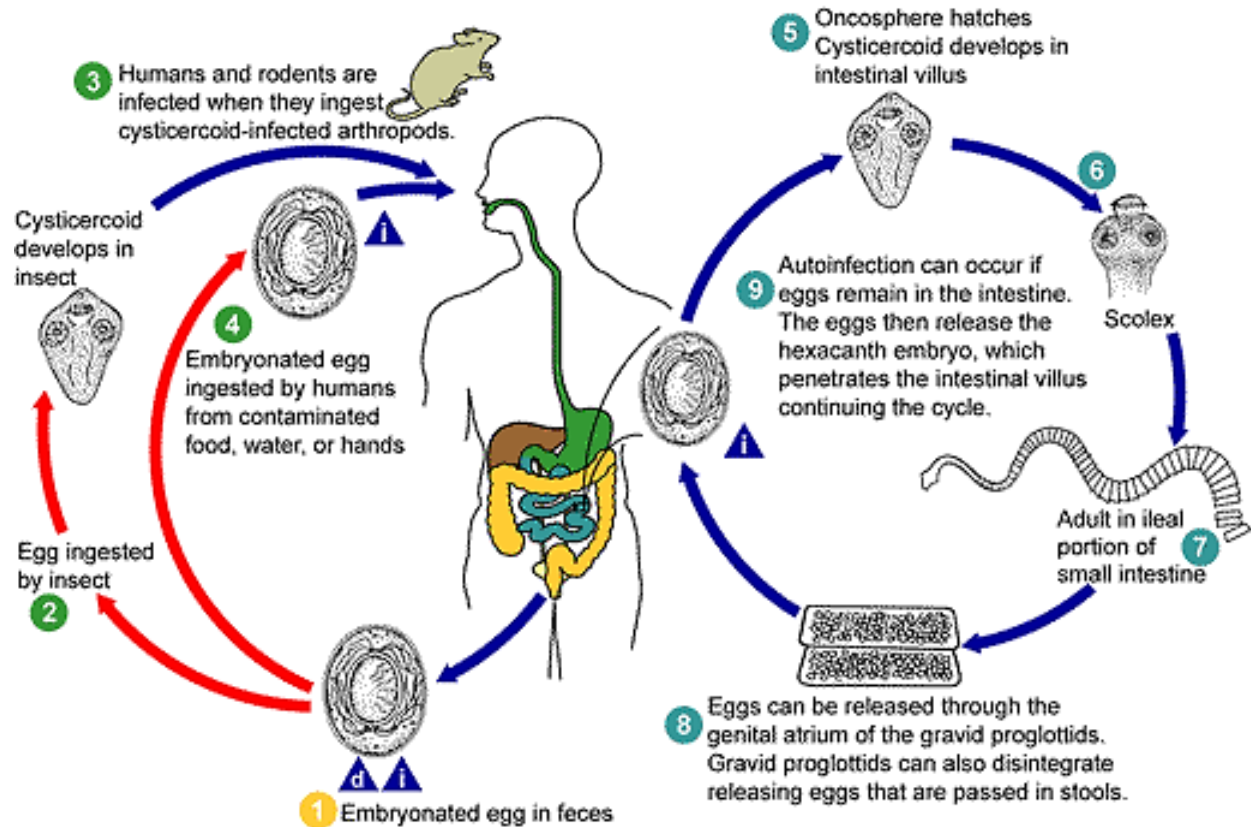
Epidemiology

H. nana (human strain) requires no extrinsic development and has only a single host; infection is essentially one of anus-to-mouth transmission. For this reasons younger children are particularly susceptible subjects. Moreover, although young children can be infected with *H. nana* eggs from rodent sources, this type of infection is probably uncommon. Lack of personal cleanliness and particularly the soiling of clothing with egg-laden feces provide opportunity for repeated exposure of the small child and his playmates.

i = Infective Stage
d = Diagnostic Stage



<http://www.dpd.cdc.gov/dpdx>



Life Cycle of *Hymenolepis nana*