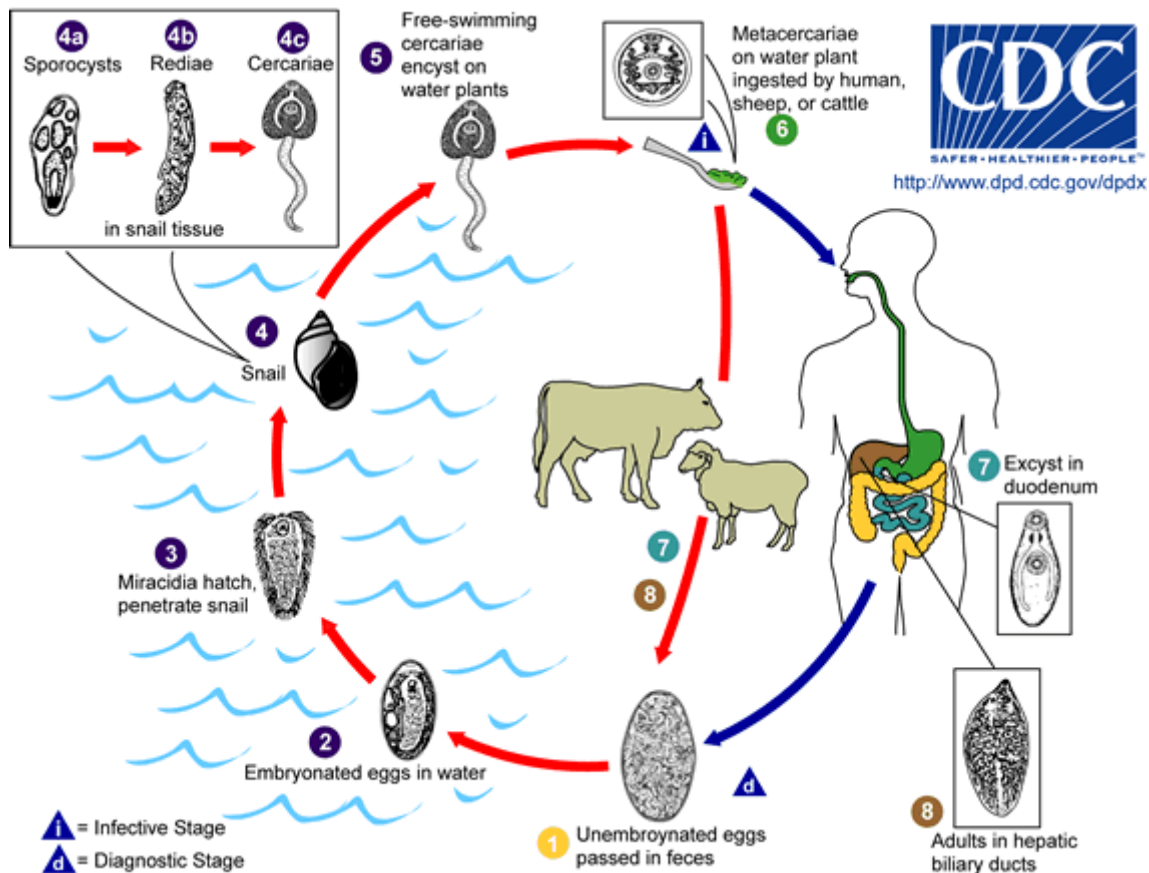


Fascioliasis

Causal Agents:

The trematodes *Fasciola hepatica* (the sheep liver fluke) and *Fasciola gigantica*, parasites of herbivores that can infect humans accidentally.

Life Cycle:



Immature eggs are discharged in the biliary ducts and in the stool **1**. Eggs become embryonated in water **2**, eggs release miracidia **3**, which invade a suitable snail intermediate host **4**, including many species of the genus *Lymnae*. In the snail the parasites undergo several developmental stages (sporocysts **4a**, rediae **4b**, and cercariae **4c**). The cercariae are released from the snail **5** and encyst as metacercariae on aquatic vegetation or other surfaces. Mammals acquire the infection by eating vegetation containing metacercariae. Humans can become infected by ingesting metacercariae-containing freshwater plants, especially watercress **6**. After ingestion, the metacercariae excyst in the duodenum **7** and migrate through the intestinal wall, the peritoneal cavity, and the liver parenchyma into the biliary ducts, where they develop into adults **8**. In humans, maturation from metacercariae into adult flukes takes approximately 3 to 4 months. The adult flukes (*Fasciola hepatica*: up to 30 mm by 13 mm; *F. gigantica*: up to 75 mm) reside in the

large biliary ducts of the mammalian host. *Fasciola hepatica* infect various animal species, mostly herbivores.

Geographic Distribution:

Fascioliasis occurs worldwide. Human infections with *F. hepatica* are found in areas where sheep and cattle are raised, and where humans consume raw watercress, including Europe, the Middle East, and Asia. Infections with *F. gigantica* have been reported, more rarely, in Asia, Africa, and Hawaii.

Clinical Features:

During the acute phase (caused by the migration of the immature fluke through the hepatic parenchyma), manifestations include abdominal pain, hepatomegaly, fever, vomiting, diarrhea, urticaria and eosinophilia, and can last for months. In the chronic phase (caused by the adult fluke within the bile ducts), the symptoms are more discrete and reflect intermittent biliary obstruction and inflammation. Occasionally, ectopic locations of infection (such as intestinal wall, lungs, subcutaneous tissue, and pharyngeal mucosa) can occur.

Laboratory Diagnosis:

Microscopic identification of eggs is useful in the chronic (adult) stage. Eggs can be recovered in the stools or in material obtained by duodenal or biliary drainage. They are morphologically indistinguishable from those of *Fasciolopsis buski*. False fascioliasis (pseudofascioliasis) refers to the presence of eggs in the stool resulting not from an actual infection but from recent ingestion of infected livers containing eggs. This situation (with its potential for misdiagnosis) can be avoided by having the patient follow a liver-free diet several days before a repeat stool examination. Antibody detection tests are useful especially in the early invasive stages, when the eggs are not yet apparent in the stools, or in ectopic fascioliasis.

Diagnostic findings

- Microscopy
- Antibody detection
- Morphologic comparison with other intestinal parasites.

Treatment:

Unlike infections with other flukes, *Fasciola hepatica* infections may not respond to praziquantel. The drug of choice is triclabendazole with bithionol as an alternative