



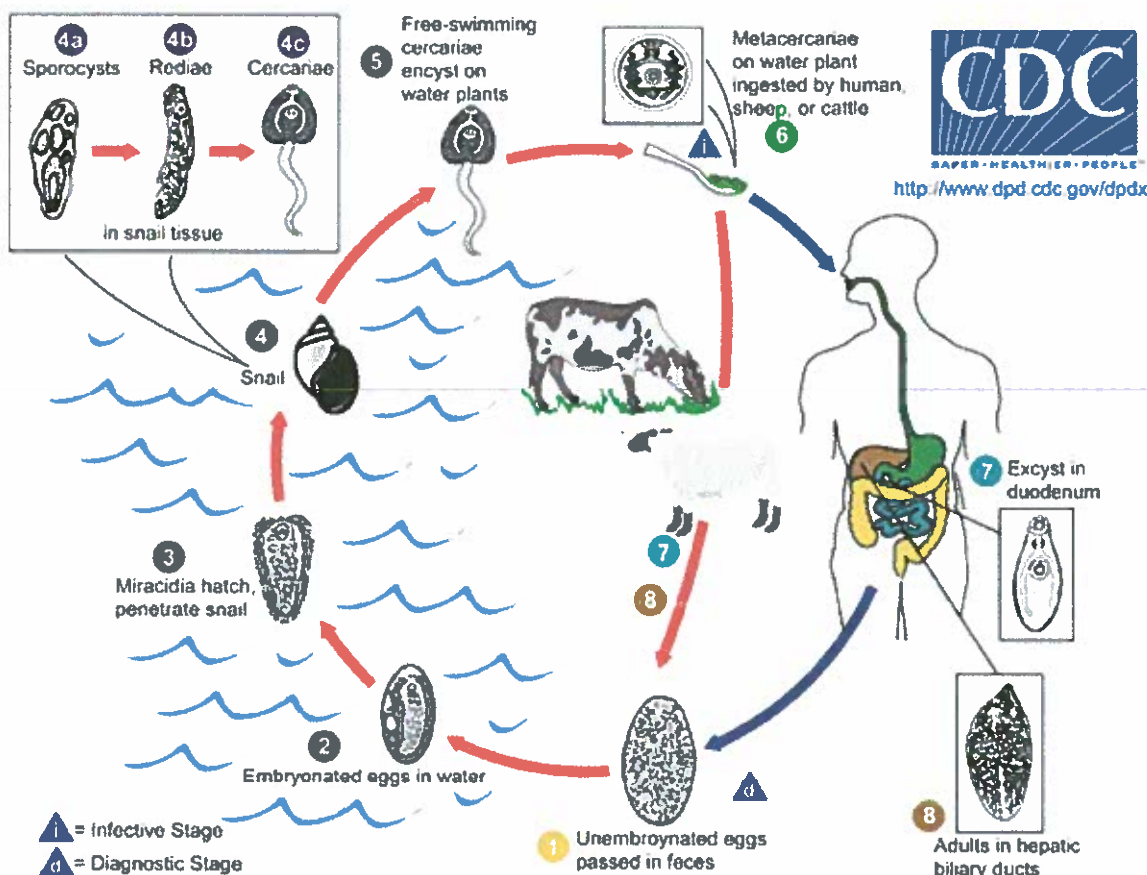
Biology

Causal Agent:

Fascioliasis is caused by *Fasciola hepatica* and less often by *F. gigantica*, which are flat worms classified as liver flukes (trematodes). Some human cases have been caused by hybrid species. Additional *Fasciola* species have been found in animals.

Life Cycle:

As shown below, *Fasciola* parasites develop into adult flukes in the bile ducts of infected mammals, which pass immature *Fasciola* eggs in their feces. The next part of the life cycle occurs in freshwater. After several weeks, the eggs hatch, producing a parasite form known as the miracidium, which then infects a snail host. Under optimal conditions, the development process in the snail may be completed in 5 to 7 weeks; cercariae are then shed in the water around the snail. The cercariae lose their tails when they encyst as metacercariae (infective larvae) on water plants. In contrast to cercariae, metacercariae have a hard outer cyst wall and can survive for prolonged periods in wet environments.



Immature *Fasciola* 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 the genera *Galba*, *Fossaria* and *Pseudosuccinea*. 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 adult **flukes** **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 (plant-eating animals).

Life cycle image and information courtesy of DPDx (<http://dpd.cdc.gov/>).

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Fascioliasis is a parasitic infection typically caused by *Fasciola hepatica*, which is also known as "the common liver fluke" or "the sheep liver fluke." A related parasite, *Fasciola gigantica*, also can infect people. Fascioliasis is found in all 5 continents, in over 50 countries, especially where sheep or cattle are reared. People usually become infected by eating raw watercress or other water plants contaminated with immature parasite larvae. The immature larval flukes migrate through the intestinal wall, the abdominal cavity, and the liver tissue, into the bile ducts, where they develop into mature adult flukes, which produce eggs. The pathology typically is most pronounced in the bile ducts and liver. *Fasciola* infection is both treatable and preventable.

Image: Left: Fasciola hepatica egg in an unstained wet mount (400x magnification). F. hepatica eggs are broadly ellipsoidal, operculated, and measure 130-150 μ m by 60-90 μ m. Center: Adult Fasciola hepatica fluke stained with carmine (30 mm by 13 mm). Right: Fossaria bulamoides, a host for F. hepatica in the western United States. Credit: DPDx (<http://dpd.cdc.gov/>), Conchology, Inc, Mactan Island, Philippines.

Explore

General Information

Most common questions
 (/parasites/fasciola/gen_info/index.html)

Epidemiology & Risk Factors

Who gets it and how...
 (</parasites/fasciola/epi.html>)

Biology

Stages of parasite development...
 (</parasites/fasciola/biology.html>)

Disease

Signs and symptoms of the
 (</parasites/fasciola/disease.html>)

Diagnosis

[Tests for infection...](#)
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Treatment

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Prevention & Control

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Resources for Health Professionals

[What you need to know...](#)
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