

### Flukes

### Tapeworms

### Roundworms

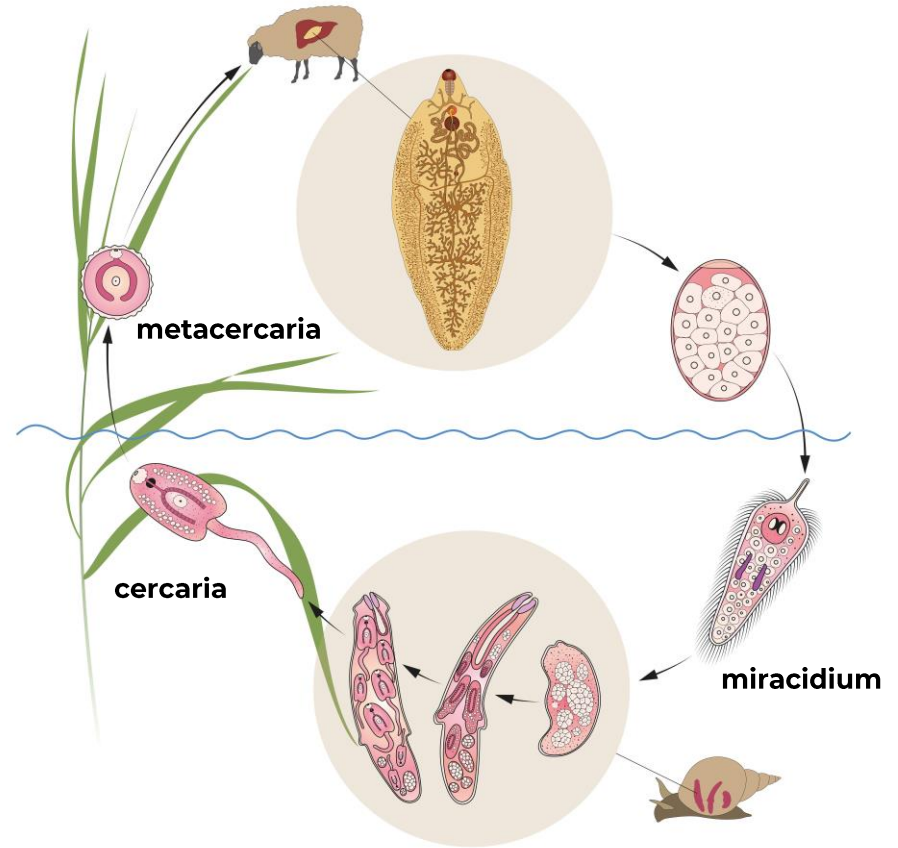
Flukes or trematodes are a type of flatworm. Eggs of these organisms must first mature in water, and snails serve as the first intermediate host. The snail ingests or is penetrated by the first-stage larva, termed a miracidium. The second-stage larva, called a cercaria, develops within the snail and is released into the water. The cercaria invades other aquatic organisms or attaches to aquatic vegetation and develops into an infective metacercaria. Infection is usually caused by consumption of undercooked animals or plants or by direct penetration through the skin. Flukes include liver flukes, lung flukes, intestinal flukes, and blood flukes. Select each button to learn more about clinically relevant species.

Liver flukes

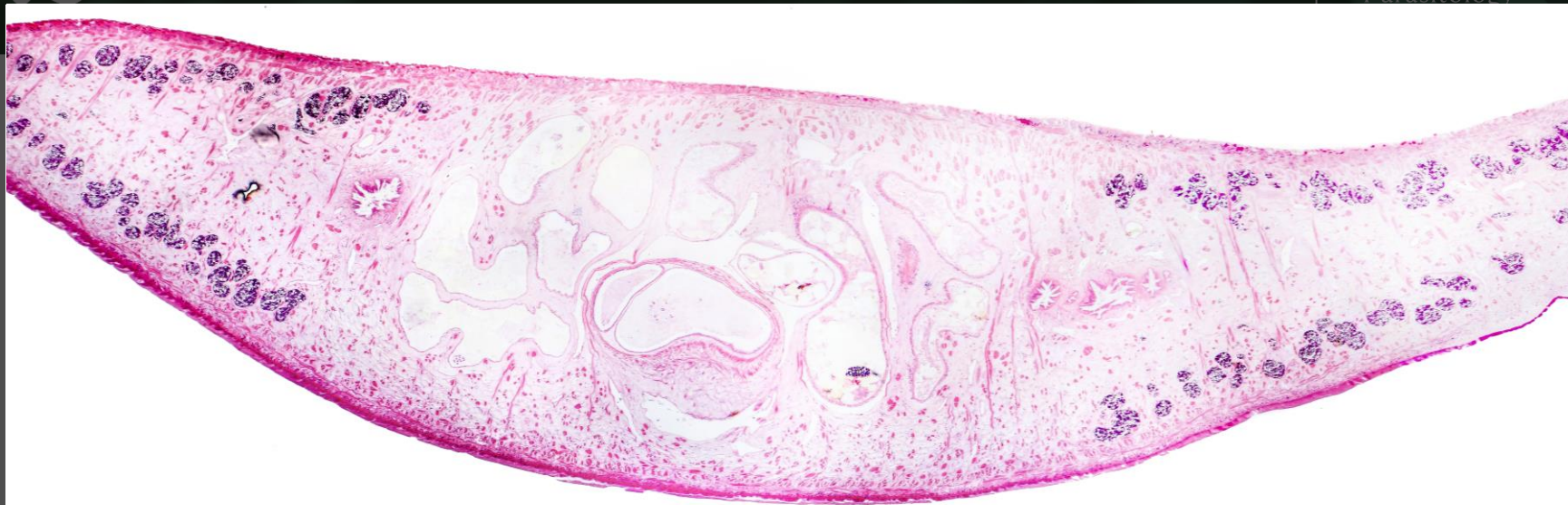
Lung flukes

Intestinal  
flukes

Blood flukes



General lifecycle of flukes



*Fasciola hepatica*

## Liver Flukes

*Fasciola hepatica* is the sheep liver fluke that causes a disease known as **liver rot** in sheep. Humans become infected by ingesting metacercariae present on raw water vegetation such as watercress. The larvae then migrate through the intestinal wall and body cavity and settle in the liver and gallbladder. Infections are usually light and typically do not cause symptoms. When symptoms do occur, they include diarrhea; abdominal pain (upper right quadrant); enlarged, scarred liver; liver obstruction; and **jaundice**.

*Clonorchis sinensis*, the Chinese liver fluke, is found in East Asia where dogs and cats serve as the reservoir hosts. Humans become infected by eating raw, undercooked, or pickled fish. Light infections do not typically produce symptoms. Heavy infections may cause fever, diarrhea, pain, scarring of the liver, or liver obstruction.