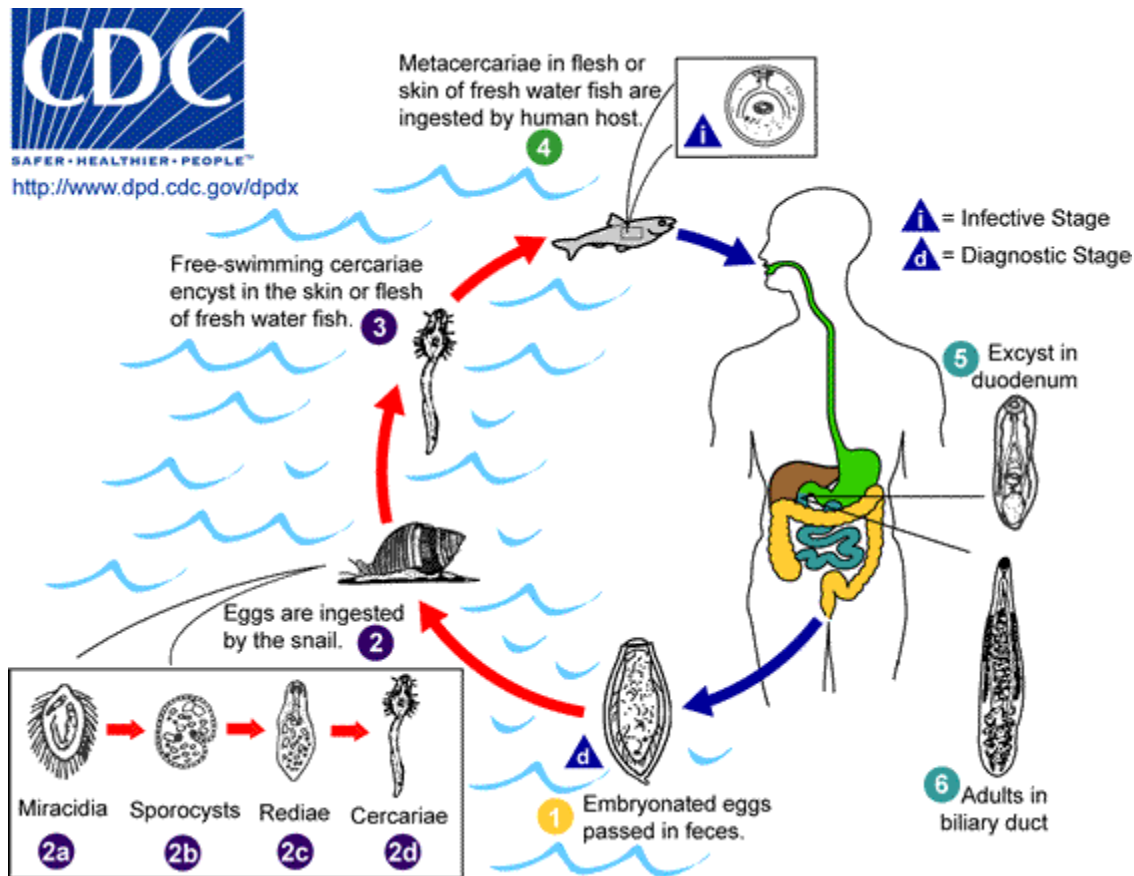


# Clonorchiasis

## Causal Agent:

The trematode *Clonorchis sinensis* (Chinese or oriental liver fluke).

## Life Cycle:



Embryonated eggs are discharged in the biliary ducts and in the stool **1**. Eggs are ingested by a suitable snail intermediate host **2**; there are more than 100 species of snails that can serve as intermediate hosts. Each egg releases a miracidia **2a**, which go through several developmental stages (sporocysts **2b**, rediae **2c**, and cercariae **2d**). The cercariae are released from the snail and after a short period of free-swimming time in water, they come in contact and penetrate the flesh of freshwater fish, where they encyst as metacercariae **3**. Infection of humans occurs by ingestion of undercooked, salted, pickled, or smoked freshwater fish **4**. After ingestion, the metacercariae excyst in the duodenum **5** and ascend the biliary tract through the ampulla of Vater **6**. Maturation takes approximately 1 month. The adult flukes (measuring 10 to 25 mm by 3 to 5 mm) reside in small and medium sized biliary ducts. In addition to humans, carnivorous animals can serve as reservoir hosts.

### **Geographic Distribution:**

Endemic areas are in Asia including Korea, China, Taiwan, and Vietnam. Clonorchiasis has been reported in non endemic areas (including the United States). In such cases, the infection is found in Asian immigrants, or following ingestion of imported, undercooked or pickled freshwater fish containing metacercariae.

### **Clinical Features:**

Most pathologic manifestations result from inflammation and intermittent obstruction of the biliary ducts. In the acute phase, abdominal pain, nausea, diarrhea, and eosinophilia can occur. In long-standing infections, cholangitis, cholelithiasis, pancreatitis, and cholangiocarcinoma can develop, which may be fatal.

### **Laboratory Diagnosis:**

Microscopic demonstration of eggs in the stool or in duodenal aspirate is the most practical diagnostic method. The adult fluke can also be recovered at surgery.

### **Diagnostic findings**

- Microscopy
- Morphologic comparison with other intestinal parasites.

### **Treatment:**

Praziquantel or albendazole\* are the drugs of choice.

\* This drug is approved by the FDA, but considered investigational for this purpose.