

***Ancylostoma caninum*, dog hookworm**

Note: description of *Ancylostoma duodenale*, and *Necator americanus* (human-specific hookworms) can be found [here](#).

cellular organisms - Eukaryota - Fungi/Metazoa group - Metazoa - Eumetazoa - Bilateria - Pseudocoelomata - Nematoda - Chromadorea - Rhabditida - Strongylida - Ancylostomatoidea - Ancylostomatidae - Ancylostomatinae - Ancylostoma - Ancylostoma caninum

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Brief facts

- Dog hookworms are one of the most common parasitic nematodes found in small intestine of foxes, dogs, and cats. They use their teeth-like plates to attach to capillary beds in the small intestine of a host where they draw mucus into their buccal cavity and suck the blood and tissue. Infection by a hookworm usually results in bloody diarrhea and anemia. In dogs receiving good veterinary care, hookworms are usually expelled in course of routine heartworm chemoprophylaxis (milbemycin oxime and a combination of ivermectin with pyrantel pamoate, benzimidazole antihelmintics).

- In humans exposure to *Ancylostoma caninum* larvae can cause a severe rash known as "creeping eruption." The skin irritation occurs because the larvae cannot get below the skin in the normal human host. However, recently, *A. caninum* is started to be recognized as a potential causative agent of eosinophilic enteritis (EE) although proper diagnostics can be performed only by doctors who are aware of the hookworm's potential to infiltrate human intestine.

Developmental stages (life cycle)

Life Cycle Stages

The life cycles of *Ancylostoma* species are similar. Parasites are dioecious, with male and female organs in separate individuals. Here they mate and the females produce eggs. Following copulation, female lays her eggs in the hosts intestine.

- **egg**

usual daily output of eggs for a single female hookworm is between 10,000 and 30,000 eggs

- **rhabditiform larva**

- **rhabditiform larva 1 (L1)**

rhabditiform larvae hatch from eggs in a warm soil (~48 hours); it feeds on bacteria and other microorganisms

- **rhabditiform larva 2 (L2)**

rhabditiform larvae first stage molt to rhabditiform larvae second stage by third day

- **filariform larva (L3)**

rhabditiform larva second stage molts to filariform larva (third stage of development) on 5th-8th day; this is infectious stage of the hookworm; the larvae migrate to the grass blades and "stand up" on their tails ready to stick to the passing host; they adhere to the host on contact, locate the skin in furred animals by thermotaxis and burrow into it through hair follicles; larva can also enter the host by being swallowed or infect fetus prenatally

- **immature adult**

when L3 larvae reach the small intestine of the host they attach to the mucosa and start feeding; in about 6 days they molt for the last (forth) time; juvenile worms re-attach themselves to the host's tissues and continue feeding pushing for deeper folds

- **adult**

it takes 5–7 weeks for adult worms to mature, mate and produce eggs; worm longevity averages 6 months; in humans both sexes have been found, although they never been fertile, and survive probably for a few weeks

References

PubMed articles

- Schad GA. Hookworms: pets to humans. *Ann Intern Med.* 1994 Mar 1; 120(5):434-5. **PMID: 8304663**
- Prociv P, Croese J. Human enteric infection with *Ancylostoma caninum*: hookworms reappraised in the light of a "new" zoonosis. *Acta Trop.* 1996 Sep; 62(1):23-44. **PMID: 8971276**

Websites

- [Wikipedia: Hookworm](#)
 - [NEMAPLEX: *Ancylostoma caninum*](#)
 - [eMedicine: Ancylostoma Infection](#)
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