

# Baylisascariasis

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The raccoon roundworm is known as *Baylisascaris procyonis* or simply *Baylisascaris*. Humans can develop severe neurologic and/or ocular disease when they accidentally ingest roundworm eggs that are passed by the raccoon in fecal matter that then contaminates the environment. This typically is the result of fecal contamination of a water or feed source.

## Baylisascaris has three life cycle options:

1. In most cases, the roundworm egg is ingested by a raccoon, passes into the intestine, hatches and matures into an adult worm. It then produces more eggs and passes them in raccoon fecal material. Raccoons are considered the reservoir host and maintain the infection in nature.
2. In some cases, the roundworm egg is ingested by a different kind of mammal (typically a rabbit or rodent) or bird. The egg hatches and releases a larva that migrates through the mammal or bird tissues but never develops into an adult worm. The larva may migrate to the brain of the mammal or bird, resulting in a debilitated state. This debilitated state may make the animal easier for a predator to catch and kill it. If a raccoon eats a mammal or bird containing the larva, the larva develops into a normal adult worm and begins passing eggs in the raccoon's fecal material.
3. *In rare cases*, the roundworm egg is ingested by a human (often a child) who is working or playing in an area contaminated by raccoon feces. *Baylisascaris* eggs are not infective when they initially are passed in raccoon feces. The eggs take two to four weeks to embryonate or become infective. The thick shell makes the eggs highly resistant and able to persist in the environment for months to years. Once inside, the egg hatches in the human intestine and releases a larva that never develops into an adult worm but migrates to different tissues in the body. Frequently, the brain and eye are affected. The larva does not mature but continues to grow and causes tissue damage. The person's condition often is severe, depending on the extent of tissue damage and the tissue affected.

## The Disease in Humans

- Infected humans may show signs of disease
- After ingestion, larva may grow and migrate through body tissues
- Infection of internal organs, particularly the brain and spinal cord
  - *Visceral larval migrans*
- Infection of the eye
  - *Ocular larval migrans*
- No definitive diagnostic test is available
- Blood samples can be drawn to look for antibody to the parasite
- No effective cure has been accepted

## The Disease in Animals

Virtually any animal species can ingest *Baylisascaris* eggs accidentally and develop clinical disease similar to that seen in humans.

## Diagnosis

No live human or animal test is available for this infection. Diagnosis is made by microscopic examination of selected tissues and observation of the parasite and the inflammation it causes.

## Risk of Exposure

Close contact between raccoons and humans presents the highest risk. Scavenging raccoons may prowl near homes and buildings. Raccoon defecation sites are dangerous exposure areas for humans.

Because the eggs are resistant to environmental conditions and disinfectants, once an area becomes contaminated, it is difficult to clean up completely. Pet raccoons also can harbor this parasite and may be a potential exposure point for humans.

**According to North Dakota Century Code 36-01-08.4,** owning a pet raccoon in North Dakota is illegal. In particular, do not “adopt” orphaned raccoon babies from the wild because they can present a source of infection. Instead, contact your local animal control officer or Fish and Wildlife representative for proper disposition of the animal.

**For more information on this and other topics, see [www.ag.ndsu.edu](http://www.ag.ndsu.edu)**

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