

Companion Animal Hospital Exotic Animal Care

Pinworm and Threadworm Infections in Reptiles and Amphibians

Pinworms/Threadworms are a common finding in the fecal exam of reptiles and amphibians, and differ from pinworms in mammal species such as in humans, rabbits, rodents, etc. Pinworms that infect reptiles and amphibians are members of the orders Rhabditia and Oxyurida, in several families. They are relatively small, slender worms that are typically found in the gastrointestinal tract.

Please note that in mammal-eating reptiles, pinworms that were in the host may be passed into the reptile's stool. Rodent and rabbit pinworm do not infect reptiles, as they are host-specific, and will simply "transit" the digestive tract intact and without developing into adults. This underlines the importance of having a veterinary team that can confidently identify different parasite species, as there is no need to treat mammal pinworms in reptiles.

What do pinworms do to reptiles/amphibians?

In wild reptiles and amphibians pinworms likely cause very little disease and in some species they may actually have a commensal¹ or mutualistic² relationship. However, captivity is not the wild. Most pinworms that infect reptiles and amphibians have a direct life cycle: They only need one host species, and may keep re-infecting the same host in captivity. This results in significant infections that may cause disease.

Pinworm infections may cause a number of health problems. Weight loss or failure to gain weight, diarrhea, mucoid stool, and prolapse of digestive tract tissue out of the cloaca are all possible complications of pinworm infection. If an animal has a "small" infection then becomes otherwise ill, the stress that pinworms put on the animal's system may exacerbate other conditions.

How did my pet catch pinworms?

These parasites are very common in captive reptiles and amphibians, often due to poor hygienic measures in breeding facilities and/or the pet store. Because of their direct life cycle, "superinfections" are common when cages are not cleaned frequently enough, and the animal keeps re-infecting themselves.

Pinworms are spread between different enclosures either directly by the keeper (not washing hands or utensils used in an enclosure, recycling uneaten prey between enclosures), or

¹ Commensal: A symbiotic parasitic relationship where one species benefits while the other is unharmed.

² Mutualistic: A symbiotic relationship where both species benefit.

indirectly by aerosol or even air currents. Some species of pinworm have very light, “airy” ova that may “float” from cage to cage with air currents.

The ova of pinworms are very resistant to many cleaners and disinfectants, and may survive for long periods of time in the enclosure.

How are pinworms diagnosed?

We typically diagnose pinworms using a laboratory technique called fecal centrifugation. This technique uses a small amount of stool added to a solution that aids in separating worm ova (eggs) from the bulk of the stool. This technique is more sensitive than fecal floatation, making it more suitable for smaller species like many companion reptiles and amphibians.

Uncommonly, whole adult worms may be observed in the stool. This is not a reliable method for detecting parasites as it is very rare for adult worms to be found in the stool, even in significant infections. Sometimes pinworms are found incidentally during surgical procedures involving the digestive tract.

How are pinworms treated?

Pinworms are treated using anthelmintic (deworming) medication; however medication is of little use if there is no environmental control implemented. Because of their direct life cycle, the environment can become a constant source of re-infection if it is not adequately cleaned and disinfected. Please take into consideration the following guidelines for environmental control:

1. Animals that have been identified as pinworm-positive should be quarantined from the rest of the reptiles/amphibians in the home to prevent cross-contamination. These animals should be tended to last during the day. Thorough hand-washing between cages is required, although wearing personal protective gear such as disposable gloves is preferred.
2. The enclosure should be cleaned thoroughly and regularly. Non-porous cage materials like plastic, glass, acrylic glass, or screen are ideal for reptiles and amphibians as they are easy to clean and disinfect; you do not want cage walls and floor to potentially hold onto microscopic pathogens like with wood, melamine, and tile.
3. Pinworm ova are resistant to most disinfectants. Cleaning cages surfaces with hot, soapy water will dislodge the ova. Cage materials and decorations that cannot be cleaned effectively should be discarded.
4. All animals in the collection should be treated concurrently for pinworm, as animals that are not displaying symptoms of infection may be carriers.
5. As parasites can shed intermittently, it is strongly recommended to have two to three fecal exams test “negative” before considering an animal to be parasite-free.