

Animal Health Advisory: Raccoon Roundworm in Los Angeles County
9.17.2024

Key Points:

- The Los Angeles County Department of Public Health is investigating two human cases of a rare parasitic infection, *Baylisascaris procyonis*, also known as raccoon roundworm.
- Raccoon roundworms are common in raccoons. Eggs from the parasites are in raccoon feces and become infectious 2-4 weeks after the feces are deposited in the environment.
- People and pets can become infected by ingesting raccoon feces or by ingesting items contaminated by them such as soil or dirt.
- Infection in pets is rare and the risk of a person getting the parasite from a pet is very low overall. Infected cats do not shed parasite eggs. Infected dogs do sometimes shed parasite eggs.
- Animal Health professionals are encouraged to learn about and teach others how to prevent raccoon roundworm infection.

Dear Veterinary Colleagues,

This month, the Los Angeles County Department of Public Health is investigating two human cases of infection with the parasite *Baylisascaris procyonis*, also known as raccoon roundworm. The two cases were found in the South Bay area of Los Angeles County. The investigation is ongoing.

Life Cycle and Transmission

Raccoon roundworm (*Baylisascaris procyonis*) is common in raccoons. Raccoons are the definitive host for this parasite. This means that adult worms mature and reproduce within their intestines, and infected raccoons shed eggs in their feces, contaminating the environment. Infected raccoons typically have no clinical signs and normal stool. Raccoon roundworm eggs become infectious to other animals, including humans, two to four weeks after the feces are deposited. Therefore, fresh raccoon feces cannot transmit the parasite. Other animals can become infected by ingesting the infectious eggs, ingesting items contaminated by raccoon feces, or by eating infected prey.

Raccoons prefer to defecate on elevated hard surfaces, such as rooftops and woodpiles, and at the base of trees. Raccoons typically keep returning to the same locations to defecate, creating latrines.

Over 150 species of mammals and birds, including cats, can become infected, and act as paratenic hosts. When such animals ingest 2–4-week-old feces from an infected raccoon, or items contaminated by those feces, instead of developing into adult worms in the intestines,

the larvae hatch and migrate through tissues such as the eyes and central nervous system (larva migrans) and can cause the individual animal to become very sick. Because the parasite does not develop into adult worms inside a paratenic host, no parasite eggs are shed in their feces. A paratenic host can only transmit a parasite to another animal if it is consumed by that animal.

- **Raccoon Roundworm in Cats:** Infection in cats is extremely rare. Even when infected, cats serve only as paratenic hosts. Raccoon roundworm larvae migrate throughout the infected cat's body, however the parasite eggs are not shed in the cat's feces.
- **Raccoon Roundworm in Dogs:** Infection in dogs is also very rare. The parasites can occasionally develop into mature adults and produce eggs inside dogs, although not as easily as inside a raccoon. This means an infected dog can become either a definitive host or a paratenic host and may or may not shed eggs in its feces.

Clinical signs in Dogs and Cats

Clinical signs in most animals (other than raccoons) vary based on the location of larva migration. They may involve nonspecific signs such as lethargy depression, vomiting or diarrhea. Most reported cases involve neurologic signs that can be either acute or progressive in onset. These may include ataxia, weakness, tremors, paralysis, seizures, circling, torticollis, and extensor rigidity. Ocular signs may include granulomatous chorioretinitis, optic nerve atrophy, retinal pigmentation, and blindness. In some cases, symptoms may fluctuate or stabilize if the larvae become encapsulated (walled off) inside the body. Migrating larvae can also damage other organs, but overt signs of organ dysfunction are uncommon.

Testing Cats and Dogs

Cats: There is no simple way to test for raccoon round worm infection in cats and other paratenic hosts, since they do not shed parasite eggs in their feces. Diagnosis relies primarily on a history of exposure, and clinical signs. Migrating larvae may be identified by imaging and biopsy of affected tissues, or during a necropsy.

Dogs: Fecal flotation with centrifugation may identify parasite eggs, however the eggs resemble those from other roundworms and may be misdiagnosed. Fecal PCR testing for *Baylisascaris procyonis* eggs may also identify infection. However, dogs may become infected without shedding parasite eggs in their feces. In such cases diagnosis relies primarily on a history of exposure and clinical signs. Migrating larvae may be identified by imaging and biopsy of affected tissues or during a necropsy.

Prevention

1. **Educate** pet owners about the risks of raccoon roundworm and the importance of preventing their pets from consuming raccoon feces.
2. **Preventing raccoon access.** Encourage pet owners to take steps to prevent raccoons from accessing their yards or properties. This includes:

- **Removing access to food and water.** Feed pets inside and do not keep pet food and water indoors especially overnight. Pick up fallen fruit frequently. Pick up all trash and close trash bins tightly. Open source feeding of community cats is discouraged.
 - **Removing access to roof, crawl spaces and other locations.** Close pet doors, especially at night. Seal off crawl spaces under houses and decks (after first making sure no animals are trapped inside). Trim tree branches away from rooflines. Use sheet metal or other materials to make tree trunks, fences, and sides of houses more difficult for raccoons to climb. Cover children's sandboxes when not in use.
 - **Repel raccoons.** Motion sensor-type sprinklers aimed at the entry point for raccoons may also help to deter them.
- 3. Addressing raccoon latrines.** Raccoon feces should be removed promptly when found. Raccoon feces that are still fresh are not infective for raccoon roundworm (it takes 2-4 weeks for the parasite eggs to become infective).
- Take care to avoid contaminating hands and clothes. Wear disposable gloves and rubber boots that can be scrubbed or cover your shoes with disposable booties that can be thrown away. Wear a well-fitting N95-rated respirator.
 - If the feces are dry, avoid creating fecal dust. Spray a small amount of water or place damp paper towels over the feces. Never use a leaf blower around latrines.
 - Pick up the raccoon feces using a shovel or inverted plastic bag. Double bag them, seal tightly and then discard in a closed outdoor trash bin.
 - Clean off any remaining visible feces from location or tools with detergent and water.
 - Finally, decontaminate hard smooth surfaces (including shovels) by applying boiling water or by using a steam cleaner. Note that most chemicals do not kill raccoon roundworm eggs, but high heat kills them instantly.
 - Remove and discard gloves. Wash clothing in high heat and detergent
 - In cases where latrines are in difficult or unsafe areas to access, a private pest management and cleaning company may need to be contacted.
- 4.** Remind pet owners to practice good hygiene, washing hands and cleaning up after their pets to prevent the spread of parasites. Young children, developmentally disabled persons, or persons with pica are at highest risk for infection as they may be more likely to put contaminated fingers, soil, objects, or even animal feces into their mouths.
- 5. Deworming.** There are no products that are approved for the treatment and prevention of raccoon roundworm in pets, however deworming products that are labeled as treating and preventing *Toxocara canis* and other roundworm infections have been found to be effective in some studies. In general, it is important to maintain dogs and cats on a regular parasite prevention routine as other intestinal parasites common in dogs and cats can cause illness in both animals and people.
- 6. Report any suspected cases of raccoon roundworm infection in pets or non-raccoon wildlife** to Veterinary Public Health at 213-288-7060 or vet@ph.lacounty.gov.

By working together, we can help reduce the risk of the transmission of *Baylisascaris procyonis* and protect public health.

Additional resources

Los Angeles County Department of Public Health

Baylisascariasis – <http://ph.lacounty.gov/acd/raccoonroundworm.htm>

Baylisascaris and animals – <http://ph.lacounty.gov/vet/raccoonroundworm/>

California Department of Public Health

Raccoon Roundworms (Baylisascaris) -

<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Raccoon-Roundworms.aspx>

Los Angeles Animal Services

Encounters with Raccoons -

https://www.laanimalservices.com/sites/default/files/documents/wildlife_raccoons.pdf

US Centers for Disease Control and Prevention

About Raccoon Roundworm - <https://www.cdc.gov/baylisascaris/about/>

Responding to Raccoons in and around the Pool - <https://www.cdc.gov/healthy-swimming/response/responding-to-raccoons-in-and-near-the-pool.html>

Veterinary Public Health is available if you have questions or concerns. Please reach out to us by phone at 213-288-7060 (Monday – Friday, 8am-5pm) or email at vet@ph.lacounty.gov.

Sincerely,

Jamie Middleton, DVM, MPH

Acting Director

Veterinary Public Health

Los Angeles County Department of Public Health

313 N. Figueroa St, Ste 1127

Los Angeles, CA 90012

(213) 288-7060

(213) 481-2375 Fax

jmiddleton@ph.lacounty.gov

<http://publichealth.lacounty.gov/vet/>

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