

Coccidia

What on Earth are Coccidia?

Coccidia are single-celled organisms that infect the intestine. They are microscopic parasites detectable on routine fecal tests in the same way that worms are, but coccidia are not worms and are not susceptible to deworming medications. They are also not visible to the naked eye. Coccidia infection causes a [watery diarrhea](#) that is sometimes bloody; it can be a life-threatening problem, especially to a young or small pet.

Where do Coccidia come from?

Oocysts (pronounced o'o-sists), like those shown above, are passed in stool. In the outside world, the oocysts begin to mature or sporulate. After they have adequately matured, they are infective to any host (dog or cat) that accidentally swallows them. To be more precise, coccidia come from fecal-contaminated ground. They are swallowed when a pet grooms/licks the dirt off. In some cases, sporulated oocysts are swallowed by mice and then the host is infected after eating the mouse. Coccidia infection is especially common in young animals housed in groups, such as shelters, rescue areas, kennels, etc. This is a common parasite and is not necessarily a sign of poor husbandry.

What Happens Inside the Host?

The sporulated oocyst breaks open and releases eight sporozoites. Each of these sporozoites finds an intestinal cell and begins to reproduce inside it. Ultimately, the cell is so full of what are called merozoites at this stage that the cell bursts, releasing merozoites that seek out their own intestinal cells so the process begins again. It is important to note how thousands of intestinal cells can become infected and destroyed as a result of accidentally swallowing a single oocyst. As the intestinal cells are destroyed in larger and larger numbers, intestinal function is disrupted and a bloody, watery diarrhea results. The fluid loss can be dangerously dehydrating to a young or small pet.

How are Coccidia Detected?

A routine fecal test is a good idea for any [new puppy](#) or kitten whether there are signs of diarrhea or not as youngsters are commonly parasitized. This sort of test is also a good idea for any patient with diarrhea and is recommended at least once a year for healthy dogs and cats as a screening test. The above photograph shows coccidia oocysts seen under the microscope in a fecal sample. Coccidia are microscopic and a test such as this is necessary for diagnosis. Small numbers of coccidia can be hard to detect, so just because a fecal sample tests negative, this doesn't mean the pet isn't infected. Sometimes several fecal tests are performed, especially in a young pet with a refractory diarrhea (one that won't go away); parasites may not be evident until later in the course of the condition.

How is Coccidia Treated?

The most common medicines used against coccidia are called coccidiostats. They inhibit coccidial reproduction. Once the numbers stop expanding, it is easier for the patient's immune system to catch up and wipe the infection out. This also means, though, that the time it takes to clear the infection depends on how many coccidia organisms there are and how strong the patient's immune system is. A typical treatment course lasts about a week or two, but it is important to realize that the medication should be given until the diarrhea resolves, plus an extra couple of days. Medication should be given for at least 5 days total. Sometimes [courses](#) as long as a month are needed. In dogs and cats, sulfa-based antibiotics are the most commonly used coccidiostats. The use of sulfa drugs in pregnancy can cause birth defects. Sulfa drug use can also lead to false positive test results for urine glucose. There is another medication that is worth mentioning called [ponazuril](#), a large animal product. This medication is actually able to curtail a coccidial infection in five doses or less and has been used in thousands of shelter puppies and kittens with no adverse effects. This product would seem to be superior to the usual sulfa drugs, but the problem that keeps it from becoming a mainstream treatment is the fact that it is available only as a paste for horses and must be diluted down to create an appropriate small animal formula. The large volumes of product yielded are not cost effective if only occasional patients are treated for this parasite. Ponazuril is thus most commonly used in kennels, catteries, and animal shelters though one may be pleasantly surprised to find it in stock at a regular veterinary office.

Can People or other Pets Become Infected?

While there are species of coccidia that can infect people ([Toxoplasma](#) and [Cryptosporidium](#), for example), the *Isospora* species of dogs and cats are not infective to people. Other pets may become infected from exposure to infected fecal matter but it is important to note that this is usually an infection of the young (i.e. the immature immune system tends to let the coccidia infection reach large numbers whereas the mature immune system probably will not.) In most cases, the infected new puppy or kitten does not infect the resident adult animal.