

Tapeworms (*Dipylidium caninum*) in Dogs and Cats

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The Common Tapeworm: *Dipylidium caninum*

Biology and Lifecycle of the Parasite

The adult *Dipylidium caninum* lives in the small intestine of a dog or cat. It does not float around freely or travel about. Instead, it anchors its head to the intestinal wall and holds itself in place using a structure called a rostellum, which resembles a hat with hooks on it. The tapeworm lives there without causing too much trouble, absorbing nutrients through its skin and dropping egg sacs off the end of its tail. It is generally regarded as a fairly disgusting creature but causes very little harm to its host.

The entire tapeworm is quite long, six inches or more in length, which most people find surprising. All they usually see are the small egg sac segments, which are about the size of a sesame seed or grain of rice. The segments are very flat, like a piece of tape, hence the worm's name.

The dog or cat becomes infected after swallowing a flea carrying a larval tapeworm. The flea's body is digested, releasing the tiny



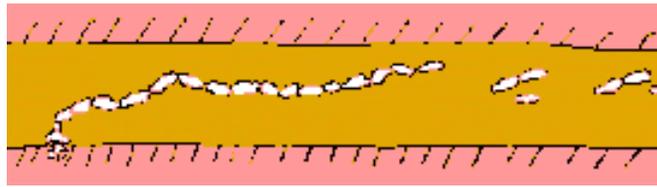
tapeworm, which is, at this point, mostly a head with hooks and suction cups. The tiny tapeworm looks for a place to latch onto the host's intestine to grow a full body. Tapeworms are not spread from pet to pet directly; to get infected, your pet must swallow the infected flea.

Once docked like a boat to the host's intestinal wall, the tapeworm begins to grow a long tail, as the tapeworm's body is basically a head

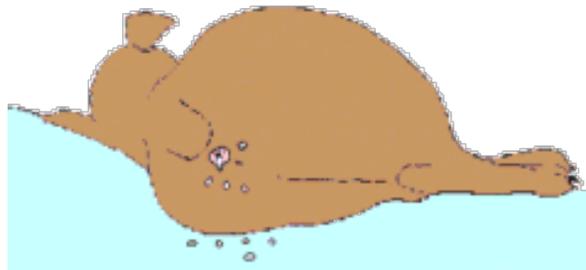
segment to hold on with, a neck, and many tail segments. Each segment making up the tail is like a separate independent body with an independent digestive system and reproductive tract. The tapeworm absorbs nutrients through its skin as the host's digested food flows by. Older segments are pushed toward the tip of the tail as the neckpiece produces new segments. By the time a segment has reached the end of the tail, only the reproductive tract is left. When the segment drops off, it is basically just a sac of tapeworm eggs.

The sac of eggs (which most people call a "tapeworm segment" and which scientists call a "*proglottid*") is passed from the host's rectum and out into the world, either on the host's stool or on the host's rear end. The segment is the size of a grain of rice and is able to move. Eventually, the segment will dry and look more like a sesame seed. The sac breaks and tapeworm eggs are released. These eggs are not

Adult *Dipylidium*. The segments are easily seen. The thick end is the tail, where segments drop off. Photo by CDC.



Adult tapeworm segment. Graphic by MarVistaVet



As a dog sleeps, tapeworm segments are passed. Graphic by MarVistaVet

infectious to mammals. The tapeworm must reach a specific stage of development before it can infect a mammal, and this stage occurs much later.

While all of this tapeworm business has been going on, fleas have been living on your pet, happily drinking blood and laying their own eggs. The flea eggs drop off your pet and onto the ground wherever your pet goes. As you might guess, there are many fleas in areas where your pet spends the most time. Along with flea eggs, your pet sheds black "flea dirt," which is basically flea poop made from blood. The flea eggs hatch, releasing hungry flea larvae that eagerly begin to graze on dust, dandruff, and flea dirt. The flea larvae do not pay close attention to what they eat and innocently consume tapeworm eggs.

As the larval flea progresses in its development, the tapeworm inside it is also progressing in development. When the flea is an adult, the tapeworm is ready to infect a dog or cat. The young tapeworm is only infectious to its mammal host at this stage of its development. The flea goes about its usual business, namely sucking its host's blood and reproducing when, to its horror, it is licked away by the host and swallowed.

Inside the host's stomach, the flea's body is digested away, and the young tapeworm is released. It finds a nice spot to attach, and the life cycle begins again. It takes three weeks from the time the flea is swallowed to the time tapeworm segments appear on your pet's rear end or stool.

Controlling fleas is essential to prevent recurring infections.

FAQ - Frequently Asked Questions

Why is it Called a Tapeworm?

This creature gets its name because its segments and body

are flat and resemble a piece of tape.

What Do They Look Like?

The adult tapeworm inside your pet can be half a foot or more long. It is made of small segments, each about the size of a grain of rice. The tapeworm's head hooks onto your pet's intestine with tiny teeth, and the worm absorbs nutrients through its skin. Each segment contains a complete set of organs, but as new segments grow at the neck area and older segments progress to the tip of the tail, the organs disintegrate, except for the reproductive organs. When the segment drops off from the tail tip, it is only a sac of eggs.



Flea dirt and debris. Courtesy MarVistaVet

This segment is white and able to move when it is fresh. At this time, it looks like a grain of white rice. As it dries, it looks more like a sesame seed.

Where Do They Come From?

There is no other way for a pet to get *Dipylidium caninum* except from fleas.

Many people who thought their pets could not possibly have fleas found out about the infestation this way. The tapeworm segment breaks open, releasing its eggs. A larval flea consumes the egg along with the flea dirt that it normally eats. As the larval flea matures, so does the baby tapeworm. When a grooming dog or cat licks the flea and swallows it, the dead flea is digested in your pet's stomach and releases the baby tapeworm. The tapeworm is passed to its new home in the dog or cat's small intestine, where it attaches and lives its life.

This parasite does not harm your pet in any way as there are plenty of nutrients passing by to serve both the host and its tapeworm (tapeworms require very few nutrients). Still, high-performance dogs who need every

calorie working for them may show a decrease in performance because of a tapeworm infection.

Another type of tapeworm may be confused with *Dipylidium caninum*, and that is the *Taenia* genus of tapeworms. This is a different type of tapeworm with a different appearing segment and a different mechanism of infection.

How Do You Know if Your Pet Has Them? Why Do They Sometimes Fail To Show Up in a Fecal Test?

Because the eggs are passed by your pet in packets (segments), they often do not show up on the fecal exam; the packet must break open for the eggs to be seen. Consider that your pet has tapeworms if segments are seen under its tail, around its anus, or on its feces. Segments can be passed in small groups connected, leading the owner to describe a worm that sounds larger than a grain of rice. Tapeworm segments are also quite flat.

Some people will mistake maggots in the stool for tapeworms. Maggots are not seen in freshly passed stool and are not flat.

Can People Get Them?

Theoretically, yes, people can get them, but they must be infected the same way dogs and cats are: by swallowing an infected flea.

How Do We Get Rid of Them?

Tapeworms are killed by different medications ([praziquantel](#), which is administered by injection, tablet, or topically, or epsiprantel, which is a pill). [Fenbendazole](#) is effective against several types of tapeworms but not against *Dipylidium caninum*.

Why Do Some Veterinarians Recommend Two Treatments and Others only Recommend One?

Only one treatment is needed to kill the tapeworms in the body; however, many clinics recommend a second treatment in three weeks. The reason is that if the owner finds out at the time of their office visit that they need to control fleas to control tapeworms, they will need at least a month or so to control the fleas.

After the first treatment is given, there is no reason why your pet cannot immediately reinfect itself. It probably will reinfect itself at some point. By seeing the animal in three weeks and giving another treatment after the fleas are controlled, there is a good chance that the tapeworms will not just be back three weeks later. It takes three weeks from the time tapeworms are swallowed by your pet to the time segments can be seen by the owner.

On the other hand, who knows when your pet will swallow another infected flea? Consult your veterinarian for treatment recommendations whenever segments are seen.

If One Pet Has Tapeworm Segments, Do Others?

No, just because one pet in the household has swallowed an infected flea does not mean all pets have. The recommendation is to deworm only pets who have obvious tapeworms.

Why Might a Pet Continue to Get Tapeworm Infections?

While many people would like to blame the medication as ineffective, the truth is that there must be an ongoing flea population in your pet's environment. The key to eradicating *Dipylidium caninum* is flea control.

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