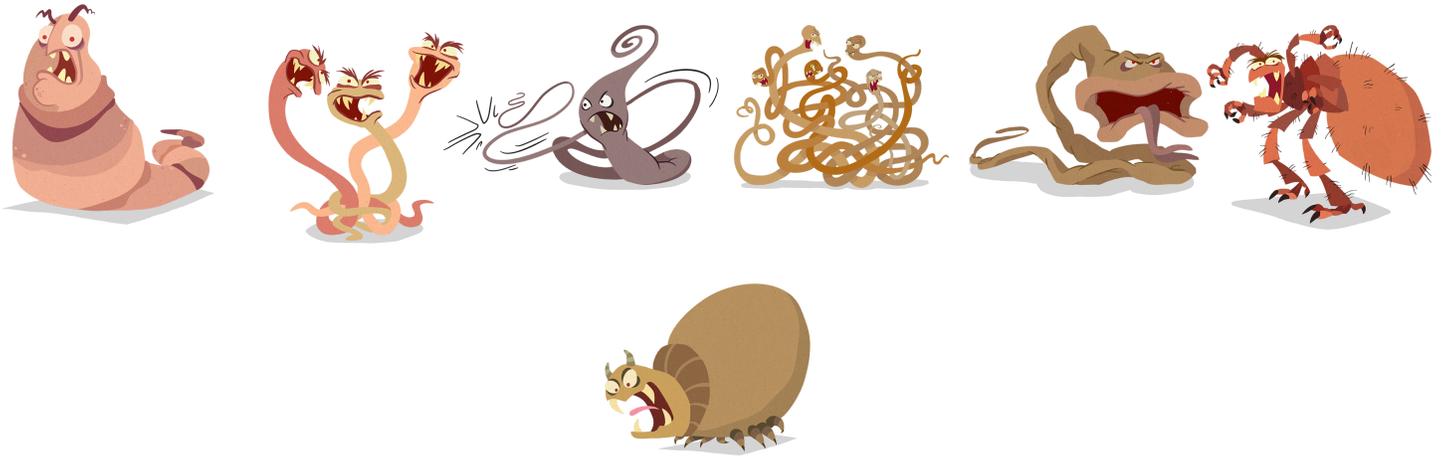


THE MOST COMMON PARASITES IN DOGS

HOW DO THEY AFFECT YOUR DOG'S HEALTH AND SOMETIMES THAT OF YOUR FAMILY?



ROTTEN ROUNDWORMS

(*TOXOCARA SP.* AND *TOXASCARIS LEONINA*)

HOW DOES MY DOG GET ROUNDWORMS?

Roundworms are the most common type of parasitic worm found inside our pets: up to 30% of dogs and 70% of puppies are infested with *Toxocara canis*.^{1,2}

Roundworms are highly prolific and females can lay up to 300 000 eggs per day. Infested dogs shed these microscopic eggs via their droppings into the environment, where they become infective after 2 to 3 weeks. The eggs can stay alive and remain infective for up to 5 years, as they are resistant to hot and cold temperatures, as well as disinfectants. Other dogs become infested as they swallow these eggs when they sniff or lick soil or other substances soiled by faeces. Dogs may also get infested if they eat rodents or other small mammals that can carry roundworm larvae.

Puppies can be infested with roundworms from birth as the mother can pass worms to her puppies during pregnancy, and via her milk when nursing.

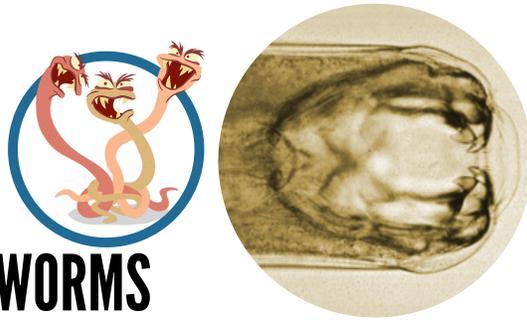
HOW WILL ROUNDWORMS AFFECT MY DOG?

Adult roundworms live in the dog's intestines and many dogs do not show any sign of illness. However, dogs that have a major infestation, particularly puppies, can show digestive signs such as a potbelly, diarrhoea and vomiting. They may also have respiratory signs as the immature worms pass through their lungs, leading to coughing and pneumonia.

DID YOU KNOW THAT?

- Humans can be infested with pet roundworms too. In infested people, the worms can cause a variety of health problems, one of the worst being blindness.
- Children are particularly at risk as they often play on the ground or in soil where worm eggs may be present (in parks, sandpits etc.). Adults may be exposed during activities such as gardening. In one study 66% of soil samples from parks in a major city were positive for *Toxocara* eggs³

1. Overgaauw et al., Veterinary and public health aspects of *Toxocara* spp. *Veterinary Parasitology* 2013, 398–403.
2. Beugnet. Helminthoses digestives des carnivores domestiques. EMC, Veterinaire, Gastroenterologies, 0300, 2010.
3. Fisher. *Toxocara cati*: an underestimated zoonotic agent. *Trends in Veterinary Parasitology* 2003, 19 (4) 167-170.



HORRIBLE HOOKWORMS

(*ANCYLOSTOMA CANINUM*, *ANCYLOSTOMA BRAZILIENSE*, *UNCINARIA STENOCEPHALA*)

HOW DOES MY DOG GET HOOKWORMS?

Similarly to roundworms, hookworms are parasites that live in the dog's digestive system. The hookworm attaches to the lining of the dog's intestinal wall and feeds on tissue and blood. Its eggs are laid in the dog's digestive tract and pass into the environment via the faeces.

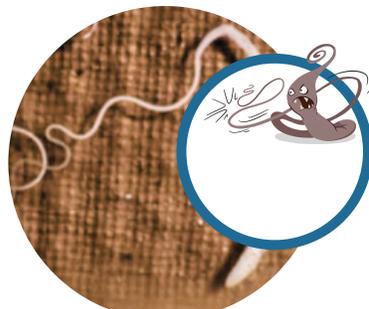
Larvae hatch out from hookworm eggs after about 10 days and live in the soil. These larvae can infest your dog by means of contact and penetration of the skin or through swallowing after sniffing or licking contaminated areas.

HOW WILL HOOKWORMS AFFECT MY DOG?

Through their feeding activity, hookworms cause internal blood loss. They are a serious threat to dogs, especially to young puppies as they can induce bloody diarrhoea and severe anaemia which sometimes leads to death. In older dogs the blood loss may be more chronic, and the dog may additionally lose weight.

DID YOU KNOW THAT?

- Humans can be infested with hookworms too, when coming into contact with soil that contains hookworm larvae. These larvae may penetrate the skin and cause skin condition, including an itching sensation at the point of entry and visible tracks on the skin where the worm is burrowing.



WHIPWORMS

(*TRICHURIS VULPIS*)

HOW DOES MY DOG GET WHIPWORMS?

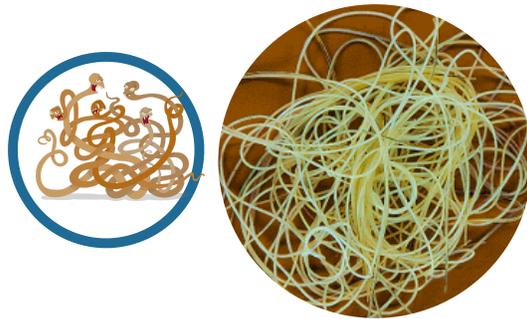
Whipworms live in the dog's large intestine.

Whipworms are named for their characteristic whip-shaped body. The body is composed of a thin end (the lash of the whip) and a thick end (the handle). They attach themselves to the walls of the large intestine and feed on blood.

Your dog may become infested with whipworms by swallowing infective eggs in soil or other substances contaminated by dog faeces. These eggs are particularly resistant in the environment, surviving for at least 5 years. An infestation can happen any time your dog sniffs the ground, roots in the dirt, or plays with toys that have been in contact with contaminated soil.

HOW WILL WHIPWORMS AFFECT MY DOG?

Dogs infested with a few whipworms may not show any sign of infestation. However, a severe whipworm infestation will cause bloody diarrhoea and severe anaemia, and could lead to death in the absence of treatment. Chronic infestation causes progressive weight loss.



HEARTWORMS

(*DIROFILARIA IMMITIS*)

Heartworms are not generally found in the UK or Ireland. However, they may be a risk for any dog that travels abroad.

HOW DOES MY DOG GET HEARTWORMS?

Heartworms are an emerging risk for dogs throughout southern and eastern European countries.¹ Climate changes are favourable to these parasites as heartworms are transmitted by mosquitoes.

Once mature, heartworms live in the heart and large blood vessels of the lungs. Adult heartworms can measure up to 30 cm in length.

HOW WILL HEARTWORMS AFFECT MY DOG?

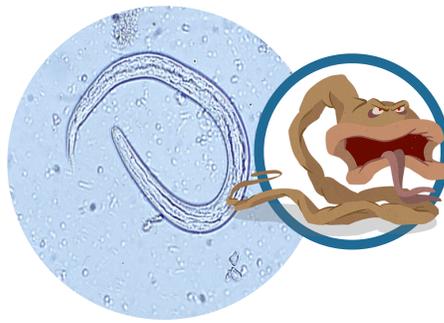
Heartworm larvae deposited by the feeding mosquito migrate in 5-6 months to the heart chambers or into the vessels of the lungs. Once matured, those worms affect the blood flow. The right side of the heart has to work much harder to push blood towards the vessels, which progressively causes heart failure.

Clinical signs of heart or lung problems are commonly present and these symptoms develop and progress slowly over weeks or months. Initially your dog will tire easily, show shortness of breath or coughing after exercise. In the later stages coughing and fatigue will be observed at rest as well. If left untreated, heartworm disease can be fatal.

DID YOU KNOW THAT?

- If you are travelling with your dog it is important to check whether you will reside in a heartworm area, and to ask your vet about preventative treatment before you start your travel.

1. Morchon et al., Heartworm disease (*Dirofilaria immitis*) and their vectors in Europe – new distribution trends. *Frontiers in Physiology*, June 2012.



LOATHSOME LUNGWORMS

(*ANGIOSTRONGYLUS VASORUM*)

HOW DOES MY DOG GET LUNGWORM?

Lungworms are small worms that live in the blood vessels of the lungs. The larvae pass through the walls of the lungs, are coughed up and passed out via the faeces. They enter a slug or snail and the dog is infested by swallowing this, or by swallowing larvae left in a slime trail.

Young dogs (under 18 months) are most at risk of infestation.

HOW WILL LUNGWORM AFFECT MY DOG?

Lungworm infestation causes respiratory signs such as coughing and tiredness at exercise. Infestation may also cause blood clotting problems, leading to a wide range of signs associated with bleeding. Most worryingly, in more than 10% of cases, lungworm can cause death.¹

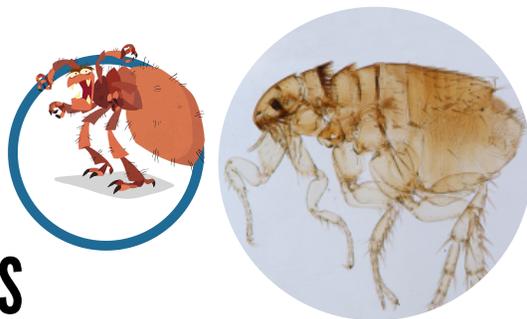
DID YOU KNOW THAT?

- Foxes can also carry lungworm
- Lungworm is spreading rapidly across the UK, with an increased prevalence in foxes from 7% to 18% in less than 10 years^{2,3}

1. Chapman et al., Journal of Small Animal Parasitology 2004, 45, 435-440.

2. Morgan et al., Veterinary Parasitology 2008, 154, 48-57.

3. Taylor et al., Parasitology 2015, doi:10.1017/S0031182015000463.



FEARSOME FLEAS

(*CTENOCEPHALIDES FELIS*)

HOW DOES MY DOG GET FLEAS?

Fleas are a year round problem and the most common external parasites to affect our dogs. The adult fleas found on our pets represent only 5% of the flea population. The rest are lurking as eggs, larvae and pupae (cocoons containing pre-emerged fleas) in the environment. This may be outside in the garden, park or woods or may be within our homes either in carpets, between floorboards, in sofas, or in your pet's bedding.

In the environment eggs hatch to larvae and then develop to pupae (cocoons containing pre-emerged fleas). When your cat passes by, this stimulates the young adult fleas to emerge from their cocoons and jump onto your pet. But beware, pre-emerged fleas in cocoons can stay alive for 10 months or more!

Fleas are prolific breeders, and flea numbers can explode in the warm spring and summer months when one female flea is able to become 1,000 fleas in just 21 days. But that's not to say that fleas are only a problem in warmer weather. Milder, wetter winters and heated homes allow these parasites to thrive throughout the year.

You might think you have cleared a flea infestation after treating your pet, only to see new fleas appearing in the weeks after administering the treatment. This is actually normal, as flea products do not repel fleas and re-infestation of your dog is due to the continued emergence of adult fleas from cocoons in the infested environment. As fleas readily survive both indoors and outdoors and there are many possible sources of flea eggs, including wild and feral animals, or just untreated neighbouring cats and dogs, the source of new fleas is a never-ending story.

To really get rid of fleas, you have to disrupt their life cycle – adult fleas must be killed before they can start laying eggs. Regular treatment of your pet will help to control the reservoir of adult and immature stages of the flea lifecycle in your home. But, if your house is heavily infested, it is recommended to use a home environmental spray.

HOW WILL FLEAS AFFECT MY DOG?

Fleas can cause itching and scratching when they bite our dogs to feed on blood. Some dogs can develop Flea Allergy Dermatitis, an allergic reaction to flea saliva resulting in intense itching, scratching, hair loss and skin thickening, which can be very distressing.

Puppies can become anaemic due to the amount of blood sucked out by fleas when feeding - as their bodies are so small they are unable to tolerate this amount of blood loss. Fleas also transmit the main tapeworm species that infests dogs and cats.

DID YOU KNOW THAT?

- Humans can be affected by fleas too. Flea bites can cause irritation and sometimes allergic reactions in people. Fleas can also transmit diseases, such as Bartonellosis (also known as Cat Scratch Disease).



TERRIBLE TICKS

(*IXODES RICINUS*, *RHIPICEPHALUS SANGUINEUS* AND *DERMACENTOR RETICULATUS*)

HOW DOES MY DOG GET TICKS?

Ticks are the second most common external parasites to affect your dog. Indeed, a recent UK study found 1 in 3 dogs infested with ticks.¹ They are most abundant from spring to autumn but are active all year round. Because of climate change, increase in deer populations (which host ticks) and travelling pets, ticks remain active for longer periods, their numbers are increasing, and new tick species and tick-borne diseases are appearing where previously they were not present.^{2,3}

Ticks are found on vegetation and cling on to our pets as they brush past. It is very difficult to prevent a dog's exposure to ticks. Ticks can attach to your dog when he or she goes with you on walks in the countryside, parks or woods.

There are a number of different ticks which can affect our pets. Some are more common in different parts of the UK and in other countries, so if you travel with your dog please consult your vet about risks in the places you are visiting.

HOW WILL TICKS AFFECT MY DOG?

They pierce the dog's skin and suck their blood over several days. This can cause irritation, painful abscesses and anaemia in small animals.

However, ticks are a particular concern because they transmit infectious diseases, some of which can be fatal:

- Babesiosis
caused by Babesia species. These organisms are blood parasites, causing anaemia due to the destruction of red blood cells. Although not common in the UK, cases of babesiosis were identified in Essex^{4,5} in 2016. Rather worryingly babesiosis can cause death of affected dogs.
- Ehrlichiosis
is caused by bacteria that infect white blood cells. Initially it causes fever and some dogs may recover completely. Other dogs remain infected and can develop problems with their immune and blood clotting

system. It is rare in the UK but common in Southern Europe, and so of particular concern if your pet travels abroad with you.

- **Borreliosis (Lyme disease)**

is the most common tick-borne disease in the UK. It is caused by the bacterium *Borrelia burgdorferi*. In dogs, signs may include lethargy, loss of appetite, fever, arthritis and swollen lymph nodes.

DID YOU KNOW THAT?

- Ticks may also transmit diseases to humans. For example, *Borrelia* is the agent of Lyme disease. It causes flu-like symptoms in people and can lead to serious health complications if left undiagnosed. Lyme disease cases in people have increased by over 300% in the UK since 2001.⁶

1. Abdullah. Parasites & Vectors, 2016, 9: 391.

2. Scharlemann et al., Trends in ixodid tick abundance and distribution in Great Britain. Medical and Veterinary Entomology, 2008, 22, 238-247.

3. Dautel et al., Winter activity of Ixodes ricinus in a Berlin forest area. International Journal of Medical Microbiology. 2008, 298: 50-54.

4. Swainsbury et al. Veterinary Record, 2016, 178: 172.

5. Phipps et al. Veterinary Record, 2016, 178: 243-244.

6. <http://www.nhs.uk/news/2015/10October/Pages/Concern-about-rise-in-UK-Lyme-disease-cases.aspx>

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The parasites described above are some of the most common to affect dogs, but please be aware that your dog may also be at risk from other parasites not described in detail here. Please ask your vet for advice regarding the specific parasite risks for your pet in your area and especially before travelling abroad.

HELP TO PROTECT YOUR DOG AND YOUR FAMILY

**ASK YOUR VET FOR A SIMPLE WAY TO TREAT
YOUR DOG INSIDE & OUT**



MONTHLY INSIDE & OUT TREATMENT

can help to target deadly parasites in dogs and to reduce the risk of parasite infections in people too



A FAMILY AFFAIR CAUSED BY PARASITES

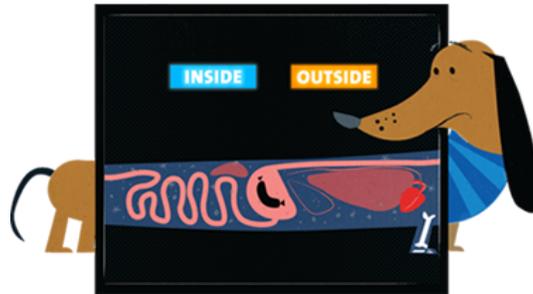
Help reduce the risk with inside and out protection for your dog

MORE ON MONTHLY

([HTTP://WWW.PARASITEPARTY.COM/EN/DOGS/MONTHLY-AND-MONTHLY](http://www.parasiteparty.com/en/dogs/monthly-and-monthly))

LEARN ABOUT THE RISKS TO YOUR FAMILY

([WWW.PARASITEPARTY.COM/EN/FAMILIES/LEARN-ABOUT](http://www.parasiteparty.com/en/families/learn-about))



FIND OUT THE RISKS TO YOUR DOG

It only takes a minute: 6 questions on your dog's life style and environment will lead you to a risk-based treatment recommendation that you can act on with your vet

TAKE THE RISK CHECK

([HTTP://WWW.PARASITEPARTY.COM/EN/DOGS/MINUTE-CHECK](http://www.parasiteparty.com/en/dogs/minute-check))

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