



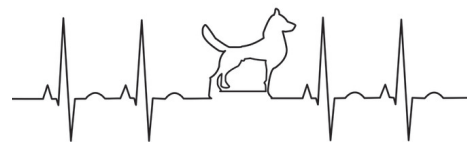
## Understanding Flea, Tick, Mite and Worm Control (part 3)



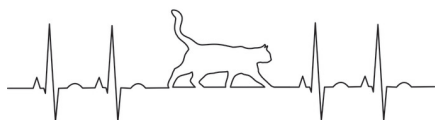
In part 3 of 'understanding flea, tick mite and worm control', we will cover heartworm, lungworm and giardia.

### Heartworm

Heartworm (*Dirofilaria immitis*) causes 'dirofilariasis', which is a **serious and life-threatening disease of dogs and cats**. Like tapeworm, heartworm requires an intermediate host, which in this case is the mosquito. Adult heartworms live in the heart and large blood vessels of the lung; their offspring, microfilaria, live in smaller blood vessels throughout the body. Adult worms are thin but very long (females can reach 35cm), and a single animal may have hundreds of worms inside them.



Adult heartworms cause considerable **damage to the heart**, preventing it from contracting properly. The microfilariae can **completely block small vessels** in the lungs, liver and kidneys, damaging those organs by stopping their oxygen supply. Clinical signs (coughing, exercise intolerance, liver disease, kidney disease etc.) may not be apparent until the infestation has reached an advanced state and treatment can then be very difficult, costly and quite dangerous.

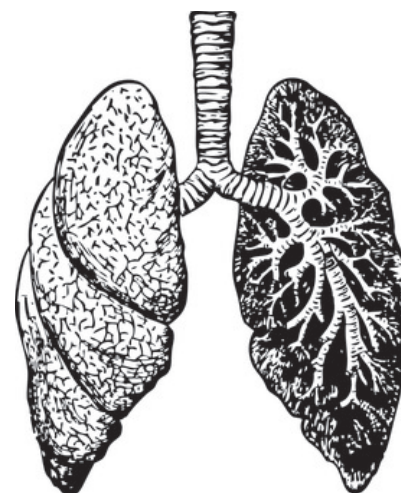


Heartworm is rare in cats and dogs in the UK, and currently only seen in imported dogs. However, with increasing pet imports and increasing pet travel, this may soon change. As always, it is much better to prevent infection in the first place and, and as we shall see, there are a number of different products available to do this.

### Lungworm (canine)

Canine lungworm (caused by *Angiostrongylus vasorum*) is another **new and rapidly developing disease threat** in dogs. It also infects foxes, and these have been partly implicated in its sudden rise. Again, it requires an intermediate host, so is not transmitted directly from dog to dog, or fox to dog.

Adult lungworms, like heartworms, are found in the heart and large blood vessels supplying the lung. However, their eggs are deposited directly into the lung, and these hatch to produce



larvae. The larvae go on to **cause extensive damage to the lung**. The dog may show breathing problems, coughing, lethargy, weight loss and neurological changes. The larvae also cause severe clotting problems, leading to bleeding into the intestinal tract, urinary tract, into the eyes, from the nose and into the lungs and abdomen. It may take some time for clinical signs to become apparent, and by then, it is often too late...

The intermediate hosts for lungworm are **slugs and snails**. Some dogs willingly ingest slugs and snails, but more commonly, ingest them accidentally by eating grass, chewing on toys left outside, drinking water in puddles or playing in the undergrowth. Lungworm larvae can also be found in the slug/snail 'trail' so ingestion of the slug or snail may not be necessary.

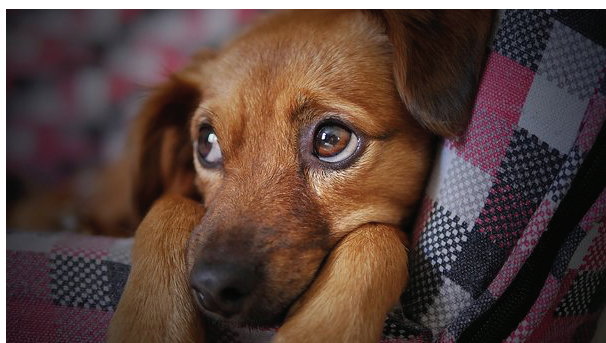


Fortunately, we can now prevent lungworm with regular de-worming, and next week, we will learn how.

## Giardia

Giardia is another intestinal parasite, but is very different from the worms discussed previously. Giardia is a type of **protozoa**, which is a single celled organism and can be loosely considered a 'mix' between a bacteria and a virus. Giardia can be seen in both dogs and cats, but infection in cats is rare. Humans can also get infected with giardia, but direct transfer from pets to humans is not common - the vast majority of human giardia infections are caused by human-to-human transfer

Many dogs carry giardia with no problems, and shed the parasite in faeces. However, animals with weakened or poorly developed immune systems, like puppies, may develop diarrhoea, often with blood and mucus. **Sometimes, there may be no diarrhoea, and only blood and mucus is seen in the stool.** In most cases, the signs are intermittent and the puppy seems otherwise happy and well. However, if left untreated, it can cause poor growth and weight loss, or develop into more serious diarrhoea and dehydration.



Giardia is shed in faeces as cysts, which can survive in the environment for many months. Dogs ingest the cysts from contaminated ground or water, and some environments can have very high numbers of giardia cysts making it impossible to avoid them.

Because giardia is absolutely everywhere and most dogs carry it without any problems, we do not try to prevent giardia as such. Instead, we

treat it if it appears to be causing a real problem based on clinical signs, and a faecal sample. With a short course of treatment, most puppies recover quickly and are able to control any subsequent infections themselves as their immune system develops.

If you have any questions about heartworm, lungworm or giardia, or any other parasite please do get in touch. In the next, and final article, of this series we will go over all the parasite control treatments available and how they should be used.