Fact sheet CANINE Hookworm

QUEENSLAND RACING INTEGRITY COMMISSION

WHAT IS CANINE HOOKWORM?

Canine hookworms are an intestinal parasite of the gastrointestinal tract. Their namesake mouth part acts like a hook and allows the parasite to embed into the lining of the intestine where they cause chronic inflammation to the gut tissues.

An infection with hookworm can also cause life threatening anaemia through chronic loss of red blood cells as well as impair the dog's ability to uptake dietary nutrition and leave them open to secondary infections and inflammatory disease.

Hookworm or parasite burden can prevent the dog from performing at its best and that can translate to both long and short-term consequences for an individual dog on the track.

The worms are generally only a few millimeters long ranging from 1-3mm which is considered effectively invisible to the naked eye if examining a greyhound's stool sample. The eggs can only be seen through a microscope.

Hookworm can migrate into different parts of the body like the muscle tissue where they lie dormant (alive but inactive) for extended periods of time before reactivating and reinfecting a dog.

HOW CAN MY GREYHOUND GET IT?

A greyhound can contract hookworm from several sources:

- Orally by ingestion of microscopic eggs and larvae in the environment or by encountering infected feces, grass, or soil.
- Inhalation from sniffing infected surfaces.
- Areas with poor sanitation, low husbandry or kennels with overcrowding.
- Direct contact with larval worms migrating through the skin when a dog steps on larvae in the environment.
- Mothers can also pass hookworms to their puppies during pregnancy via the placenta before birth and through their milk when nursing pups.

The hookworm completes its life cycle inside the gut of the dog. It lays eggs that exit the dog's body in the faeces where it can infect others after the larvae (immature stage) hatches in the environment.

If stepped on or attached to the fur, the worm in larvae can migrate into the skin. From the gut it can migrate through tissue to the windpipe or lungs, where it gets coughed up and swallowed and the cycle continues in the gut.

The parasite also has the ability to migrate to the muscle tissue where it remains dormant but alive and then reactivates later, reinfecting the gut of the dog despite routine worming being undertaken. This feature can make it a challenge when trying to clear a hookworm infection.

Hookworm larvae can survive for weeks in the environment with the right conditions. The tropical and sub-tropical climate of Queensland is favourable to the hookworm persisting in the environment outside the host. This means that there is a high chance your greyhound is coming into contact this parasite frequently.

SIGNS OF HOOKWORM INFECTION

The most common presenting sign of hookworm infection is intermittent bouts of diarrhoea or soft stools which may be mis-attributed to other causes occurring concurrently like transport stress, seasonal change, or diet changes.

This is due to the damage the hookworm causes the body. Blood may or may not present in these stools.

Very rarely, due to their near microscopic size, very small worms may be visible in the faeces along with other types of larger intestinal worm species. This may indicate possible co-infection with multiple worm species.

Anaemia is a common sign of chronic and severe infection. This could be noted through pale gums, weakness, or low red blood cell levels in blood tests.

The dog may have signs of generalised ill thrift, poor coat condition, and lack of vigour and even slow growth/recovery due to parasites impairing uptake of nutrition, and the chronic inflammation occurring in the body.

HOW ARE HOOKWORMS DIAGNOSED?

Hookworms are most commonly detected through testing of a faecal sample using a technique which is called a Faecal Float. This is often done in a clinical setting by a veterinarian or sent to a reference laboratory.

If parasite eggs are detected another test can be conducted called a faecal egg count.

This test helps determine the level of parasite burden in the dog. These tests are usually done together when parasite eggs are detected.

There are several other sophisticated tests that can confirm the presence of hookworm in a dog such as DNA and antigens testing of stool samples.
Your vet can help to suggest and select the test that suits your circumstances.

HOW IS CANINE HOOKWORM TREATED?

There are numerous anthelmintics (wormers) available that are registered by the Australian Pesticides and Veterinary Medicines Association (APVMA) that can be provided by your veterinarian or sold over the counter to treat hookworm.
In some cases, routine doses of anthelmintics may not be effective, even with consistent use over several months - this could mean the dog has multidrug-resistant hookworms or a persistent infection.

A veterinarian will be required to prescribe one or a series of more specific drugs to be used concurrently to eliminate the burden.

A follow up faecal egg reduction test would be conducted to ensure the burden is reducing and is usually repeated until the patient was testing negative for parasites.

Infected dogs, particularly those with multidrug-resistant hookworms usually require retreatment and sometimes numerous doses.

A veterinarian will be required to manage this with you, which will simplify and streamline treatment. Somatic or encysted hookworms may unarrest (wake up) in muscle tissue and migrate back to the gut after or during treatment.

Treated worms may also lay eggs before being eliminated. This means that reinfection through those pathways, as well as the environment is possible, and the dog's faeces should be tested regularly through faecal analysis several times per year.

WHAT SHOULD I DO IF I SUSPECT MY GREYHOUND HAS HOOKWORMS?

You should collect a fresh fecal sample from your dog and present this to your veterinarian for testing.

Your local veterinarian may be able to provide a specimen jar and personal protective equipment to safely collect a specimen prior to collection.