



Parasites in Dogs or Cats

DEMO REPORT



Health begins with us.



Sample-ID

paNGSXX

Sample receipt

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WORMS

Whipworm

Trichuris vulpis

detected*	particularly affected are**	risk to humans***
NO	Dogs	NO

Tapeworms

Dipylidium caninum

NO	Dogs and Cats	NO
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Echinococcus granulosus

YES	Dogs	YES
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Echinococcus multilocularis

NO	Dogs and Cats	YES
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Taenia spp.

YES	Dogs and Cats	YES
-----	---------------	-----

Roundworms

Toxocara spp.

NO	Dogs and Cats	YES
----	---------------	-----

Toxocara canis

NO	Dogs	YES
----	------	-----

Toxocara cati

NO	Cats	YES
----	------	-----

Toxascaris leonina

NO	Dogs and Cats	YES
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Baylisascaris procyonis

NO	Dogs and Cats	YES
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Hookworms

Ancylostoma spp.

NO	Dogs and Cats	YES
----	---------------	-----

Uncinaria stenocephala

NO	Dogs	NO
----	------	----

Ancylostoma caninum

NO	Dogs	NO
----	------	----

SINGLE-CELLED PARASITES

Protozoa

	detected*	particularly affected are**	risk to human***
Cryptosporidium canis	NO	Dogs	YES
Cryptosporidium felis	NO	Cats	YES
Tritrichomonas blagburni	NO	Dogs and Cats	NO

Giardia (Protozoa)

Giardia duodenalis	NO	Dogs and Cats	YES
Giardia zoonotic strains A&B	NO	Dogs and Cats	YES

Coccidia (Protozoa)

Eimeria spp.	NO	Dogs and Cats	NO
Toxoplasma gondii	NO	Dogs and Cats	YES
Neospora caninum	NO	Dogs	NO
Cystoisospora spp.	NO	Dogs and Cats	YES

*A **YES** indicates that DNA from the respective parasite was detected in the stool sample. Therefore, it is highly likely that this parasite is present in the intestine.

** Particularly affected means that the mentioned animal or possibly both animals are predominantly affected by the respective parasite. In rare cases, the unmentioned animal may also develop an infection or be an asymptomatic carrier.

*** A **NO** means that the mentioned parasite is not typically transmitted to humans and therefore does not pose a health risk to humans. However, in rare cases, there is still a risk of health problems with these parasites.

What do parasites do in the intestines?

Parasites in the intestines are a common health problem in dogs and cats. There are various types of intestinal parasites, including worms and single-celled parasites (such as Giardia). These parasites can establish themselves in the animal's intestines and cause various health problems. Unlike humans, dogs and cats are particularly susceptible to intestinal parasites because they often have access to outdoor areas and can come into contact with parasitic soil, contaminated water, or infected prey. Additionally, parasite larvae or eggs can also be ingested through food, allowing the parasites to enter the intestines and develop there. The intestines provide an ideal habitat as they are warm and offer abundant sources of nutrients ^[1].

Although the risk of intestinal parasites exists in all dogs and cats, young, elderly, and weakened animals are particularly vulnerable as the immune system of young animals is not fully developed and the immune system of older and weakened animals may be compromised ^{[2][3]}.

A parasitic infection in the intestines of dogs and cats can manifest in various ways. The symptoms can vary depending on the type of parasite, the severity of the infection, and the animal's immune system, so not all animals with intestinal parasites show obvious symptoms. Typical symptoms include diarrhoea, vomiting, nausea, loss of appetite, and weight loss. The faeces may also exhibit changes such as the presence of blood or mucus. Animals with a severe parasitic infection may show abdominal pain or discomfort. They may behave restlessly, lick their abdomen, or frequently lie down and get up. Certain parasites, such as hookworms, can cause anaemia. Signs of anaemia include pale gums, weakness, fatigue, and reduced stamina. In some parasites, such as tapeworms, it may manifest as itching in the anal region or licking of the anal area ^[2]. Additionally, in cases of tapeworm infections, worm segments may be visible in the faeces or around the animal's anus.



What do parasites do in the intestines?

Some parasites that occur in the intestines of dogs and cats can also be transmitted to humans. This is known as a zoonotic disease. One of the most common parasites that poses a potential risk to humans is the parasite *Toxoplasma gondii*. This parasite can be transmitted from cats to humans and is particularly dangerous for pregnant women and people with weakened immune systems ^{[1][2][3]}.

In the following, we have tested the submitted stool sample for 13 types of worms and 9 types of protozoan parasites.



WORMS

Among other groups of intestinal parasites, worms are among the most common parasites in the intestines of dogs and cats. Worms are mostly multicellular organisms belonging to the invertebrate animals. They have a complex body structure with specialized organs ^{[4][5]}.

Whipworm

The whipworm is a parasite that mainly affects dogs ^[5]. It resides in the large intestine and upper small intestine of the infected animal. Infection with whipworms occurs through the ingestion of worm eggs found in the soil or contaminated environment. The larvae hatch in the intestine and develop into adult worms there. The adult whipworms attach themselves to the intestinal wall and feed on the host's blood.

An infection with whipworms can lead to symptoms such as diarrhoea, weight loss, anaemia, and general discomfort. Young dogs are particularly susceptible to infections as their immune system is not fully developed.

Result:

Trichuris vulpis

detected

NO

Tapeworms are parasitic worms that can affect dogs ^{[6][7]}. They belong to the family of flatworms and have a flat body composed of segments. Tapeworms utilise the dog's intestine as their habitat and feed on nutrients from the host's food.

Infection with tapeworms usually occur through the ingestion of infected intermediate hosts such as fleas, rodents, or raw meat. The tapeworm larvae, living in these intermediate hosts, are ingested by the dog and develop into adult worms in the intestine. The adult tapeworms can grow several meters long and continuously release eggs that are excreted in the dog's faeces.

A tapeworm infestation can cause various symptoms in dogs, including weight loss, digestive problems, anal itching, visible worm segments in the faeces or on the dog's fur. In some cases, tapeworms can also be transmitted to humans.

Result:

	detected
Dipylidium caninum	NO
Echinococcus granulosus	YES
Taenia spp.	YES
Echinococcus multilocularis	NO

Roundworms, also known as ascarids, are a common type of intestinal parasites that can affect dogs^[4]. They belong to the group of nematodes and are particularly prevalent in young dogs.

Infection with roundworms occurs through the ingestion of eggs present in the environment. These eggs can be found in soil, grass, or water. Once the eggs hatch in the dog's intestine, the larvae develop and migrate through the body before returning to the intestine and maturing into adult worms.

A roundworm infestation can cause various symptoms, including weight loss, diarrhoea, vomiting, coughing, and a bloated abdomen. In some cases, the larvae can also infect other organs such as the liver or lungs and cause damage.

Result:

	detected
Toxocara spp.	NO
Toxocara canis	NO
Toxocara cati	NO
Toxascaris leonina	NO
Baylisascaris procyonis	NO

Hookworms

Hookworms are intestinal parasites that can affect both dogs and cats ^[4]. Infection with hookworms usually occurs through the ingestion of material contaminated with hookworms, such as soil, or through direct ingestion of larvae. The larvae penetrate the skin or are orally ingested and then reach the intestine, where they mature into adult worms.

Hookworms attach themselves to the intestinal wall using their hook-like teeth and feed on blood. This can lead to bleeding, anaemia, and intestinal inflammation. Symptoms of hookworm infestation in pets include diarrhoea, vomiting, weight loss, pale mucous membranes, and a bloated abdomen.

Result:

Ancylostoma spp.

Uncinaria stenocephala

Ancylostoma caninum

detected

NO

NO

NO



SINGLE-CELLED PARASITES

Single-celled parasites that occur in the intestines of vertebrates like dogs and cats belong to the group of protozoa^{[8][9]}. Unlike worms, single-celled parasites are microscopic and consist of a single cell. While worms typically infect the intestines and cause damage there, single-celled parasites can infect various organ systems of the host, including the intestines, liver, or lungs.

Protozoa

Protozoa are single-celled parasites that occur in dogs and cats and can cause various diseases in the animals' bodies^{[8][9]}. These parasites can infect the digestive tract as well as other organs such as the liver or lungs. Infection occurs through contact with faeces, consumption of meat or prey animals contaminated with protozoa. Protozoan parasites can cause symptoms such as diarrhoea, weight loss, vomiting, and general weakness.

Result:

	detected
Cryptosporidium canis	NO
Cryptosporidium felis	NO
Trichomonas blagburni	NO

SINGLE-CELLED PARASITES

Giardia

Giardia, single-celled parasites that can occur in dogs and cats, are among the protozoa^[8]. They are transmitted through contaminated water, food, or direct contact with infected animals. Giardia can cause symptoms such as diarrhoea, vomiting, weight loss, and abdominal pain.

Result:

Giardia duodenalis

detected

NO

Giardia zoonotic strains A & B

NO

Coccidia

In addition to Giardia, coccidia are also part of the protozoa^[10]. They are single-celled parasites in the intestines of dogs and cats and are transmitted through contact with infected faeces or contaminated food. Coccidia can cause a gastrointestinal disease that manifests as diarrhoea, weight loss, loss of appetite, and occasional vomiting.

Result:

Eimeria spp.

detected

NO

Toxoplasma gondii

NO

Neospora caninum

NO

Cystoisospora spp.

NO

What should I do in case of parasite infections?

A positive PCR result indicates the likely presence of a parasite, as PCR tests are highly sensitive and specific. Therefore, if there is suspicion of worms or other parasites in the intestines of dogs and cats, it is recommended to consult a veterinarian for a precise diagnosis and appropriate treatment. Based on the diagnosis, the veterinarian will recommend an anthelmintic medication or medication against protozoa that effectively combats the worms or single-celled parasites. It is important to administer the medication according to the veterinarian's instructions and complete the entire treatment course.



What can I do for prevention?

To prevent intestinal worms, it is advisable to undergo regular PCR tests of the stool, even without a diagnosis or symptoms, in order to detect and combat infections early on. It is recommended to perform the parasite PCR tests in addition to deworming your pet. This can prevent or exclude an infection with intestinal parasites. A veterinarian can also recommend an appropriate deworming medication for this purpose. Good hygiene practices, including regular cleaning of the litter box and removing dog faeces from the garden and walking paths, reducing the risk of parasites. Additionally, contact with potentially parasitised material should be avoided to reduce the risk of infection. Feeding raw or undercooked meat can pose a potential risk of parasite infection. Therefore, cooked meat should be used, and for raw meat, a trusted source should be sought to reduce the risk of worm infestation. High-quality pet food not only reduces the risk of parasites but also strengthens the immune system and resistance to infections with a balanced nutrient composition.

In addition, it is recommended to regularly check dogs and cats for fleas and ticks, as they can transmit worm eggs and dormant stages of single-celled parasites. There are various suitable methods for flea and tick control.

How can I protect myself in general?

Many parasites can be transmitted from animals to humans, causing similar symptoms, especially gastrointestinal disorders. Therefore, in addition to preventive measures for pets, it is important to protect yourself accordingly. This includes regular handwashing, especially after contact with pets, cleaning the litter box, or removing dog faeces. Additionally, your pet's environment should be kept clean by regularly cleaning sleeping areas and toys.



What should pregnant women and immunocompromised individuals pay special attention to?

Pregnant women should exercise caution when it comes to intestinal parasites in pets during pregnancy to protect themselves and their unborn child. It is also particularly important for immunocompromised individuals to protect themselves from intestinal parasites in pets, as they have an increased risk of infections. Follow the hygiene practices described above when interacting with your pet, especially after contact, cleaning the litter box, or playing outdoors. Try to avoid close contact with your pet's faeces altogether. Especially in pregnant women, contact with cat faeces should be avoided if possible due to the potential risk of infection with *Toxoplasma gondii*⁽¹¹⁾. Wear gloves, if necessary, when cleaning the litter box.

DEMO REPORT

Miscellaneous

Report created by:

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Measurement Method:

NGS

PCR Test & DNA Sequencing

Primary sample or submitted material:

faecal sample

Disclaimer:

The analysis is based on the Polymerase Chain Reaction (PCR) of the parasites. The presence of these parasites can be detected using the PCR method and sequencing. There may also be other parasites in the intestine that were not detected by PCR. The current interpretation of the selected parasites may change in the future due to the publication of new scientific studies. This report is provided to you solely for informational and educational purposes and does not replace the visit to a veterinarian or the advice or services of a veterinarian.



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