

The Horrid Signs of an Internal Fungal Infection

Most people assume fungal infections with pets are limited to the skin, but certain types of fungi can enter the bloodstream and lungs and spread throughout the body, affecting bones and joints, eyes, liver, kidneys, heart and the central nervous system.

Reviewed by [Dr. Becker](#)

STORY AT-A-GLANCE

- Fungal infections in dogs and cats are often caused by fungi in the environment that sometimes affects only the skin, but can also cause serious systemic illness
- Blastomycosis is a common fungal infection that is seen most often in dogs that spend a great deal of time outdoors or live close to a body of water
- Coccidioidomycosis, often called valley fever, is an uncommon but deadly infection that occurs in dry, hot climates
- Cryptococcus is caused by a yeast-like fungus found primarily in pigeon poop; infections are most often seen in immunocompromised cats
- If you live where fungi are prevalent, it's important to learn what types of organisms your pet might be exposed to, and the signs of infection

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Depending on your age, you may have heard the funny old phrase, “There’s a fungus among us.” The phrase means nothing — it just rhymes and makes people giggle. Of course, everyone knows a fungal infection is anything but funny, especially when it attacks a furry family member.

Fungal infections often develop on a pet's skin, but they can also occur internally, spreading through the bloodstream and entering the lungs, which as you can imagine, can have very serious consequences. Many infections in dogs and cats are caused by fungi in the environment. A few of the most common include blastomycosis, coccidioidomycosis and cryptococcus.

Blastomycosis

Blastomycosis is a systemic fungal infection caused by *Blastomyces dermatitidis*, an organism that grows in rotting wood and wet soil. The *Blastomyces* fungus thrives in wet environments like swamps, lakes and riverbanks, where damp soil and lack of direct sunlight encourage its growth. The fungus is also found in locations that harbor decaying organic matter like wooded areas, forests and farms. Blastomycosis infections are prevalent in locations near water, including the Mississippi, Ohio, Missouri and Tennessee River basins.

The infection is seen most often in large breed male dogs, and especially in hunting dogs, sporting breeds and dogs that spend a lot of time in environments where the Blastomyces organism exists. Female dogs are also susceptible, of course. And occasionally, cats also become infected. Studies indicate most dogs that acquire a blastomycosis infection live within a quarter mile of a body of water.

Symptoms of blastomycosis infection include loss of appetite, fever, weight loss, depression, inflammation of the iris of the eye and discharge from the eyes, as well as coughing, wheezing and pus-filled skin lesions. More serious symptoms can include sudden blindness, lameness, inflammation of the testicles, enlarged lymph nodes and seizures.

Blastomycosis is a serious fungal infection, and the sooner you seek treatment, the better. It's important to note that blastomycosis is often misdiagnosed, so if your dog has been showing any of the above symptoms for six weeks or more with no improvement, and if he could have been in an environment that harbored the Blastomyces fungus, your veterinarian should test for a fungal infection.

Traditional treatment for a blastomycosis infection is oral administration of an antifungal drug. These medications all require long-term treatment, sometimes for many months. They are very expensive. And of course, all of them carry serious potential side effects. A nutraceutical called quantum nucleotide is also recommended to help stimulate an immediate immune system reaction, as well as oil of oregano in capsule form, which is excellent support for a body fighting a fungal infection.

For many dogs, the critical period during treatment is the first 24 to 72 hours, as the antifungal drug begins to kick in and kill off the fungi. Since there are typically a large number of organisms in the lungs, there can be an overwhelming inflammatory response that can result as the fungi die off. Respiratory distress can be a big problem during the first few days of treatment.

Coccidioidomycosis

Coccidioidomycosis is an infection caused by the *Coccidioides immitis* fungus. It is a deadly disease that primarily occurs in dry, hot climates like those found in parts of the western and southwestern U.S., especially Southern California, Arizona, southwest Texas, New Mexico, Nevada and Utah, as well as in Central and South America. Coccidioidomycosis is also known as California fever, desert fever, and most commonly, valley fever.

Coccidioidomycosis can affect many types of mammals, including humans. It occurs more often in dogs than cats. The condition is not zoonotic, meaning it can't be passed from animal to human or human to animal. The *Coccidioides immitis* fungus is found in upper layers of soil and works its way to the surface after a rainy period or soil disturbance of some kind. Once on the soil's surface, the fungus forms spores that are spread by wind and dust storms.

Pets can acquire coccidioidomycosis from inhaling the soil-borne fungus. Dogs susceptible to the infection can become ill from as few as 10 fungal spores. The infection starts in the respiratory tract and then frequently spreads to other body systems.

In the lungs, the spores are round globules that exist as parasites until they grow big enough to break open, releasing hundreds of endospores that travel to other tissues, and continue the process of growing, rupturing and spreading throughout the body. If the endospores get into the lymphatic and circulatory systems, they create a systemic infection.

Dogs who are outdoors a great deal are at highest risk for valley fever, especially dogs with lots of space to roam. Large dogs seem more at risk, but it could be because they tend to spend more time outdoors than smaller dogs.

Some dogs can develop immunity and never show any symptoms. When symptoms do occur, they include fever, coughing, difficulty breathing, lethargy, lameness, swelling of bones or joints, significant weight loss with muscle wasting, enlarged lymph nodes, skin ulcers and draining sores, inflammation of the cornea or iris of the eye, seizures and heart failure.

It's not unusual for valley fever to spread throughout the body, affecting bones and joints, eyes, skin, liver, kidneys, central nervous system, cardiovascular system and reproductive organs (specifically the testes). Cats usually don't exhibit the same symptoms as dogs do, and frequently show no symptoms at all until the infection has spread significantly. In cats, the deeper layers of skin tissue are more often affected, so symptoms like masses, abscesses and lesions with draining are more common in kitties.

Treatment of valley fever depends on the extent of the infection and clinical symptoms. If the condition is widespread, traditional treatment involves aggressive antifungal therapy for up to a year. Other drugs, including cough suppressants and steroids, may also be prescribed to treat individual symptoms.

In dogs that aren't responding well to drug therapy, a drug level measurement test can be performed to determine how well the medication is being absorbed. Integrative veterinarians will often combine traditional antifungal therapy with more natural modalities like cytokine therapy, medicinal mushrooms, IV vitamin C therapy and ozone therapy.

Affected dogs should be fed a high-quality, nutritionally balanced, species-appropriate diet, preferably fresh, to help maintain body weight. Activity should be restricted until symptoms begin to subside. Antibodies should be monitored every three to four months until they return to a normal level. Unfortunately, valley fever is one of the most dangerous of the fungal diseases, and the prognosis for most dogs is guarded or grave. Sadly, while many dogs improve following a course of antifungal drug therapy, relapse is common.

Cryptococcus

Cryptococcus is a relatively common infection caused by a yeast-like fungus called *Cryptococcus neoformans*. The fungus is widespread in the environment. Cats, dogs, humans and other animals can become infected. The condition is much more common in cats than dogs, and is primarily a problem in animals that have weak or compromised immune systems.

A cryptococcal infection is acquired most commonly when a pet inhales the infectious spores in bird droppings, in particular, pigeon droppings. The fungus has also been found in soil, fruit and even in the skin of healthy people. However, the main source of exposure and contamination is pigeon poop.

If the fungus is deposited where it's protected from sunshine and drying out, it can survive in the environment for up to two years. Once your cat inhales the spores, the fungus invades the upper respiratory tract, typically in the nasal passages or the lungs. In immunologically healthy animals, the fungus remains isolated and doesn't create any problems at all.

But in cats with suppressed immune systems (for instance, kitties dealing with feline leukemia or feline immunodeficiency virus), the disease can take hold and spread to other organs, including the brain, eyes, lungs and the central nervous system. This type of disease progression can result in granulomas, pneumonia or systemic disease.

Symptoms of cryptococcus vary depending on the organ systems affected by the fungus. Often, symptoms are systemic and nonspecific, such as diminished appetite, weight loss or lethargy. Other signs to watch for in your pet are sniffing, sneezing, raspy breathing or a runny nose.

Sometimes infected animals can have hard lumpy swellings over the bridge of the nose, skin lesions on the top of the head or swollen lymph nodes. If the fungus has invaded the central nervous system, there can be head tilting, nystagmus (a strange, abnormal back and forth eye movement), the inability to blink due to paralysis of the facial nerves or loss of coordination, including circling and seizures.

Eye problems are also very common and can include hemorrhage in the retina, as well as inflammatory conditions of the eye like chorioretinitis and anterior uveitis. Diagnosis of a cryptococcal infection can be done quickly and easily through examination of either discharge from the kitty's nose or skin lesions. Once a definitive diagnosis is made, the cat should also receive a complete workup to determine if there's an underlying disease that has compromised the immune system.

Any underlying conditions must be treated in order to successfully treat the cryptococcal infection. This infection is often observed in immunocompromised animals, so it is recommended to investigate any underlying reasons why the pet may have acquired the infection.

Nontoxic Therapies That May Benefit All Fungal Infections

In addition to conventional therapy for fungal infections, IV vitamin C, hyperbaric oxygen and ozone therapy have all been used to shorten infection time and enhance standard treatment protocols. If your pet has been diagnosed with any of the above fungal infections and is not responding adequately to current treatment protocols, seek out these nontoxic, systemic immune-enhancing treatments.

Prevention Is the Best Treatment for Fungal Infections

Since fungal infections in dogs and cats can be life-threatening and often require long-term treatment with powerful, expensive antifungal drugs, obviously, every attempt should be made to avoid exposure in the first place.

If you live where fungi are prevalent and/or your pet spends a lot of time roaming outdoors, educate yourself on the types of organisms your dog or cat may encounter in your neck of the woods, as well as the symptoms of infection. If you see signs your animal companion may have been exposed to fungi, take him to your veterinarian right away. The earlier a fungal infection is identified and treated, the more likely your pet will make a full recovery.

Sources and References

[VetStreet, February 8, 2017](#)
