

Blastomycosis in Dogs & Humans

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Blastomycosis is a serious systemic fungal disease that primarily infects dogs and people. It can create a variety of respiratory, eye, and skin lesions. Blastomycosis can be rapidly fatal if not diagnosed and treated promptly. Even with proper treatment, many dogs do not recover from the infection. Along with proper medications, good supportive care is very important. Relapses can occur.

Where is blastomycosis found?

Blastomyces dermatitidis is a fungal organism that lives in sandy, acidic soil in close proximity to water. Most competing soil organisms will kill off the blastomycosis spores unless the conditions are nearly perfect for the fungus to survive. This explains why blastomycosis is often found in small pockets instead of being widespread. The proximity to water appears to be very important. A study in Wisconsin showed that 95% of the infected dogs lived within 400 yards of a body of water.

Blastomycosis has a well-defined endemic area where it is found. The area includes the Mississippi, Missouri, and Ohio River valleys, the Mid-Atlantic States and parts of Quebec, Manitoba, and Ontario. It is believed that the range of blastomycosis continues to grow.

Who is at risk for getting blastomycosis?

Blastomycosis is primarily a disease that infects people and dogs. While there have been reported cases in a wide variety of animals including cats, horses, and ferrets, they are relatively rare. While humans often become infected, dogs are still 10 times more likely to develop the disease than people are.

A big factor in determining which dogs or people get infected is directly related to their lifestyle and where they live. People that spend time in the woods, as well as their dogs are much more likely to become infected. If they travel in swamps or near water they are at an even greater risk. Hunting dogs and hounds are therefore infected much more frequently than house pets in a given geographic area. Younger dogs are more commonly infected with the highest prevalence seen in 2-year-old dogs.

How does a dog become infected?

Infection occurs from the dog inhaling the spores that are found in the soil. The spores then travel down into the airways of the lungs and an infection develops. It has been suggested that some infections could occur through a wound in the skin, but this source of infection is thought to be very rare.

Once Blastomycosis establishes itself in the lungs, it then spreads throughout the body to different locations. The most common sites for infections after the lungs include the skin, eyes, bones, lymph nodes, subcutaneous tissue, brain, and testes.

What are the symptoms of blastomycosis in dogs?

The symptoms of blastomycosis in dogs include lack of appetite, fever, depression, weight loss, coughing, eye problems, lameness, or skin problems. Signs are usually present for a few days to a few weeks. The disease can wax and wane with the severity of the symptoms improving slightly and then worsening again.

Up to 85% of dogs with blastomycosis have lung lesions and accompanying dry, harsh lung sounds. Forty percent of dogs with blastomycosis have eye lesions including uveitis, retinal detachment, and hemorrhaging into the eye. Skin lesions are found in 20 to 40% of the infected dogs and are often ulcerated and draining. Bone involvement and resulting lameness is present in about 30% of infected dogs.

How is it diagnosed?

Blastomycosis is diagnosed based on history, symptoms, and then identification of the organism under a microscope or through an antigen blood test. Smears from skin lesions or from aspirates of enlarged lymph nodes will contain identifiable blastomycosis organisms about half of the time. Collection of samples from the bronchi will also contain organisms in some instances. In cases where the disease is suspected but the organisms cannot be found microscopically or diagnostic resources are limited, an antigen blood test can be performed. The blood test, available through MiraVista Diagnostics, detects *B. dermatitidis* antigen in body fluids including urine, blood, bronchial aspirates, and cerebrospinal fluid. The blood test does cross react with another fungus called *Histoplasma*.

What is the treatment?

Treatment is usually necessary for all dogs that become infected with blastomycosis. Unlike some other fungal infections in which many animals are exposed and then recover from the infections on their own, with blastomycosis relatively few animals are exposed and infected, but those that are require treatment.

There are several treatment options. The most common treatment is the oral administration of the antifungal drug [Itraconazole](#). This drug usually needs to be given daily for 60 to 90 days. It is a human drug and can be very expensive, particularly for a large dog, but it is currently the safest and most effective way to treat blastomycosis.

For dogs that can not tolerate or do not respond to Itraconazole, the injectable drug Amphotericin B can also be used. This drug is given intravenously several times a week. Because it is more toxic than Itraconazole, it is administered under close veterinary observation.

Ketoconazole (Nizoral) is occasionally used in milder cases where cost is a strong consideration. It is not as efficacious and is slightly more toxic than Itraconazole, and therefore, is not usually the first choice in treatments.

Most animals will have severe appetite loss and must be encouraged to eat or be force fed the first 7-14 days.

How can blastomycosis be prevented?

There is currently no vaccine available to protect against blastomycosis. Because of the isolated distribution pattern of blastomycosis, it is difficult to determine where the source of most infections come from, and therefore, avoidance is almost impossible. The disease cannot be transmitted from an infected animal to a healthy animal or from an animal to a person, it can only be acquired from inhaling the spores in the soil. Limiting the amount of time a dog spends in the woods, particularly near water sources may reduce the incidence. Knowing if blastomycosis occurs in your area, recognizing the symptoms, and seeking prompt veterinary attention are the best ways to deal with this disease.