

Histoplasmosis in Dogs & Cats - A Funky Fungal Infection

When people hear the word infection, the majority think only about bacteria. Unfortunately, there are many different types of infectious organisms, including protozoal, parasites, and fungi. This week I'm sharing some information about a relatively common fungal infection called histoplasmosis. This organism can wreak havoc if not identified and treated promptly so I hope this information is helpful. Happy reading!

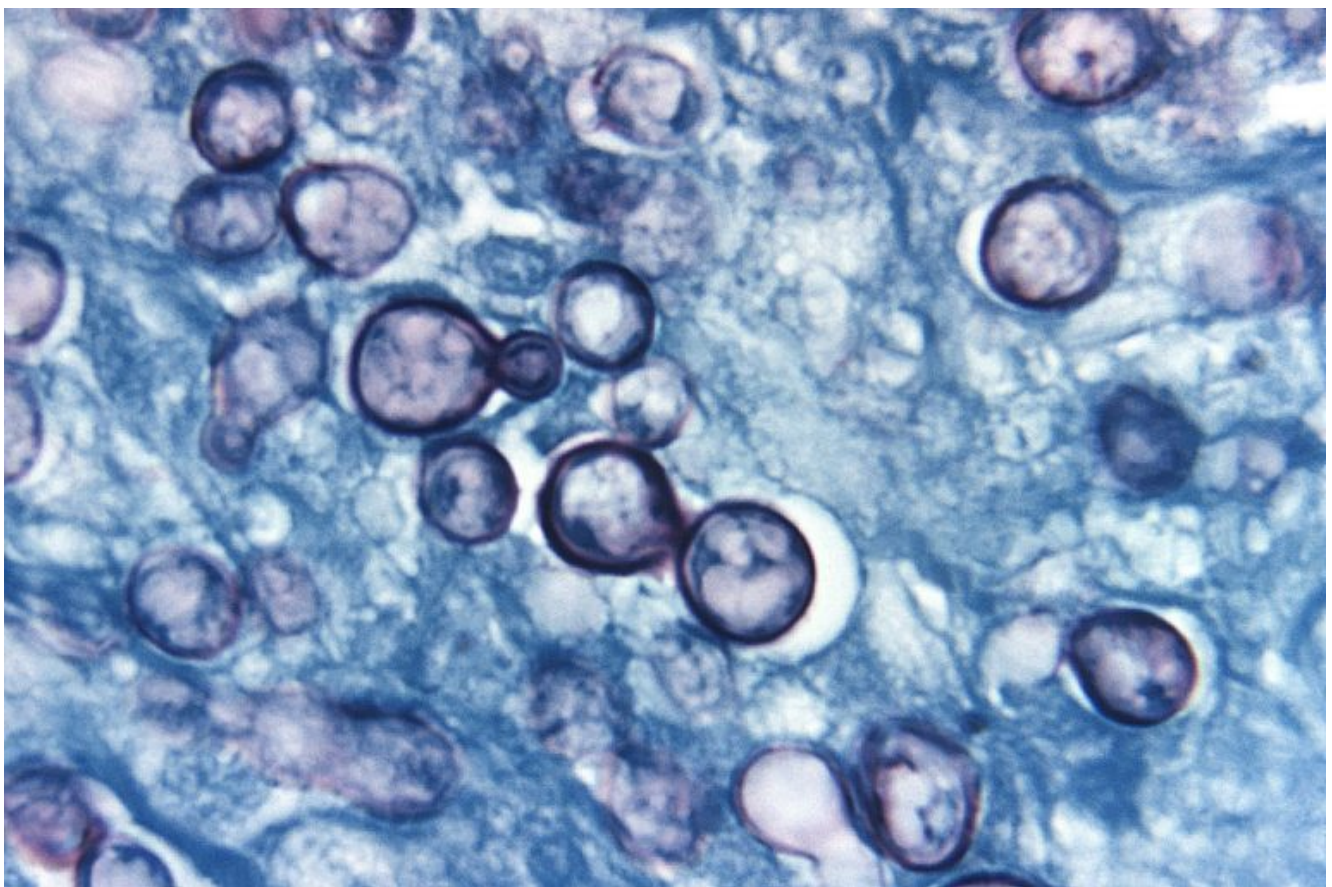


Histoplasmosis - What is it?

The infective organism is called *Histoplasma capsulatum*. It is found in the soil, and prefers warm, moist and humid conditions. In America, this fungus has been encountered in 31 US states; it is most commonly encountered in the midwest and southern regions, particularly in regions along the Mississippi, Missouri, and Ohio rivers. Areas with bird and/or bat feces harbor *H. capsulatum* well.

Dogs and cats encounter the fungus after encountering soil in which the fungus is living. The animal inhales a specific form of the fungus (called microconidia) that

reaches the lower respiratory tract. There the fungus incubates for approximately two weeks, changes form (called the yeast phase), starts reproducing by a process called budding. The body's immune system responds by engulfing the fungal organisms in special cells called monocytes. Inside these cells, the yeast may continue to replicate. In many instances, the pet's immune system can bring infection under control. However, if the immune system is compromised and/or the dose of inhaled spores is too great, serious and life-threatening infection can ensue. Interestingly, there is ample evidence *H. capsulatum* inhibits proper functioning of a pet's immune system, thus increasing the likelihood of infection.



Microscopic appearance of *H. capsulatum*

Histoplasmosis - What does it look like?

Both dogs and cats can develop histoplasmosis. For cats, the average age at time of infection is ~4 years, and males and females are affected equally. Persian cats appear to be predisposed. Most affected dogs are less than five years of age; like

cats, there is no sex predilection. Certain breeds and groups of dogs are over-represented, including:

- Working dogs
- Sporting dogs
- Brittany spaniels
- Weimaraners
- German shorthair pointers



The clinical signs parents observe at home are non-specific, and may include:

- Lethargy & depression
- Weight loss
- Reduced (or loss of) appetite
- Coughing / difficulty breathing
- Diarrhea
- [Icterus](#) (yellowing of the skin and “whites of the eyes”)
- Eye abnormalities (i.e.; reddening, cloudiness, pupil size changes, squinting, etc.)

Histoplasmosis - How is it diagnosed?

A veterinarian will obtain a thorough history of and perform a complete physical examination for any patient suspected of having histoplasmosis. Please be prepared to answer their questions as thoroughly as possible, especially when

asked about your pet's travel history. Physical examination is often quite helpful, identifying some important changes like:

- Abnormal lung sounds
- Pale mucous membranes (i.e.: gums)
- Changes in breathing pattern
- Enlarged liver and/or spleen
- Eye abnormalities
- [Lymph node enlargement](#)
- Lameness & joint swelling

The doctor will recommend some testing evaluate the overall health of a sick pet's major organ systems. These tests include a complete blood count, serum biochemical profile, and urinalysis. They will also recommend testing to confirm *H. capsulatum* infection. To do so, further investigation is needed and may include:

- Urine screening for the organism (antigen)
- Chest radiographs / x-rays
- Ultrasound-guided aspiration of the liver and spleen
- Sampling of fluid in the lungs (i.e.: bronchoalveolar lavage)
- Radiographs of bones followed by bone biopsy
- Evaluation of cerebrospinal fluid ("spinal tap")
- [Gastrointestinal biopsies](#)

Histoplasmosis - How is it treated?

Once histoplasmosis has been confirmed, aggressive treatment with antifungal medication is needed. Several drugs have been used to treat this infection, including itraconazole, fluconazole, ketoconazole, and amphotericin B. Occasionally, anti-inflammatory and immunostimulatory medications may be recommended. Pet parents will likely find it helpful to partner with a board-certified veterinary internal medicine specialist who can help them develop an appropriate therapeutic plan. Effective treatment requires months of medical therapy. Treatment should be continued at least one month beyond resolution of clinical signs and normalization of urine antigen levels.



Itraconazole | Sporanox can be used to treat histoplasmosis in dogs & cats.

The take-away message about histoplasmosis in dogs...

Histoplasmosis is a relatively common fungal infection in dogs and cats. Affected pet may have respiratory, eye, liver, and gastrointestinal complications. Once identified through logical testing, therapy with antifungal medication is indicated. The prognosis is better in those patients with minimal clinical signs attributable to only one organ system. Partnering with a board-certified veterinary internal medicine specialist can be helpful for maximizing the likelihood of a positive outcome.

To find a board-certified veterinary internal medicine specialist, please visit the [American College of Veterinary Internal Medicine](https://www.acvim.org/).

Wishing you wet-nosed kisses,

cgb