Histoplasmosis is an infection caused by the fungus *Histoplasma capsulatum*. Histoplasmosis is the most common of the three major endemic (limited to a specific geographical area) fungal infections of North America. (The other two are blastomycosis and coccidiodomycosis.) These fungi are found in soil, and the soil and climate of specific regions are best suited for the growth of these fungi. The vast majority of histoplasmosis occurs in the states surrounding the Ohio and Mississippi river valleys, covering a large area of the Midwestern United States. Histoplasmosis is also common in Latin America and Africa.

### How Histoplasmosis Affects Your Body

You get histoplasmosis by inhaling infectious fungal spores. These spores are usually released into the air by activities that disturb the earth such as digging, demolishing old buildings, and cutting down old trees. Most infections occur as outbreaks related to large construction projects. Others are related to recreational activities such as spelunking in bat-infested caves. Once inhaled, the spores can cause a lung infection (pneumonia), which, if not controlled by a healthy immune system, can spread throughout the body and cause what is known as “disseminated disease,” the most severe and life-threatening form of histoplasmosis.

### How Serious Is Histoplasmosis?

The severity of histoplasmosis depends on three factors:

- the degree of exposure to the fungus
- how strong your immune system is
- how healthy your lungs are

### Activities and exposures linked to the acquisition of histoplasmosis

<table>
<thead>
<tr>
<th>Sites likely to contain Histoplasma</th>
<th>Activities likely to cause exposure to Histoplasma</th>
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<tr>
<td>Caves</td>
<td>Spelunking</td>
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<tr>
<td>Chicken coops</td>
<td>Cleaning, demolitions, and use of bird droppings in gardens</td>
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<td>Bird roost</td>
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<td>Prison grounds and school yards</td>
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<td>Decayed wood pile</td>
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<td>Dead trees</td>
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Most histoplasmosis infections have mild or no symptoms that resolve on their own; these people don’t even know they were infected or thought they had “the flu” until signs of the infection show up on an X-ray taken later for another reason. The infections can be severe if the exposure is heavy or if you have a weak immune system. In these cases, histoplasmosis can cause severe and life-threatening illness.

**Histoplasmosis Symptoms, Causes, and Risk Factors**

Most histoplasmosis infections resolve by themselves. However, the three common symptomatic forms of histoplasmosis that require antifungal therapy are:
- Acute histoplasmosis
- Chronic cavitary histoplasmosis
- Disseminated histoplasmosis

**What Are the Symptoms of Histoplasmosis?**

**Acute histoplasmosis** appears 2 to 4 weeks after exposure or earlier if the exposure is heavy. The most common symptoms of acute histoplasmosis are:
- Fever and chills, flu-like illness
- Headaches
- Muscle pain
- Loss of appetite
- Shortness of breath
- Dry cough
- Chest pain
- Fatigue

Most symptoms resolve in few weeks. If the exposure is very heavy, your condition may worsen into respiratory failure, which may be life-threatening.

The most common symptoms of **chronic histoplasmosis** are:
- Cough that is productive of thick yellow sputum
- Shortness of breath
- Feeling run-down or tired
- Low-grade fever
- Night sweats
- Weight loss

Patients with emphysema may develop a slowly progressive form of histoplasmosis that resembles tuberculosis, except that it is not contagious. If left untreated, chronic histoplasmosis can progress with enlarging lung cavities, loss of lung function, and overall clinical deterioration.

**Disseminated histoplasmosis** is when the infection progresses and spreads outside the lungs and throughout the body, affecting multiple organs and causing severe illness. This usually occurs only in people who have a lowered immunity. The most common symptoms of disseminated histoplasmosis are:
- Fever and chills, flu-like illness
- Headaches
- Shortness of breath—severe and leading to respiratory failure
- Drop in blood pressure
- Cough and chest pain
- Enlarged spleen and liver
- Gastrointestinal bleeding
- Ulcerations in the mouth and lip
- Bone marrow failure with decreased white and red blood cells

Disseminated histoplasmosis is life-threatening unless suspected and diagnosed in a timely fashion, ensuring rapid initiation of effective antifungal therapy and supportive intensive care.
What Are Risk Factors?
Anyone who lives in an endemic area may develop a mild, self-limited infection with *Histoplasma*. The fungus usually remains in the body and never causes a problem, but if the immune system becomes depressed, it may become active again. The following may depress the immune system and can lead to active and severe histoplasmosis:
- HIV/AIDS
- Recipients of solid organ transplant
- Immunosuppressive medications
  - TNF-blockers, such as infliximab
  - Corticosteroids, such as prednisone
  - Antirejection medications, such as mycophenolate and azathioprine
- Extremes of age (infants and the elderly)

When to See Your Doctor
If you live in the Midwestern United States, have been exposed to activities that can cause histoplasmosis, or your immune system is weak and you are have symptoms of respiratory tract infection, you should contact your doctor.

Diagnosing and Treating Histoplasmosis

What to Expect
As long as the diagnosis is made and antifungal therapy started in a timely fashion, histoplasmosis can be effectively treated with the currently available therapies.

How Histoplasmosis Is Diagnosed
Acute histoplasmosis is diagnosed by health-care providers by asking patients questions about potential exposure and compatible symptoms and findings of physical examination and chest X-ray. They also order tests to confirm the diagnosis of acute histoplasmosis. These tests include a blood test for *Histoplasma* antibodies and antigen. The antibody test might be negative if done early after the infection. Antibody tests might be repeated a few weeks later to confirm the diagnosis. The antigen can also be negative if the infection is mild.

Chronic histoplasmosis may be diagnosed when health-care providers notice patients with underlying emphysema who develop a chronic infection resembling tuberculosis and who may have been exposed to *Histoplasma* fungi. A chest X-ray is often done and shows a cavity in the upper lung zones filled with fluid. Histoplasma antibody test results are usually positive, and sputum cultures usually grow *Histoplasma*.

Rapid diagnosis of disseminated histoplasmosis is absolutely essential to ensuring early treatment and a good outcome. *Histoplasma* antigen and bronchoscopy are the most effective and widely used methods to secure an accurate and timely diagnosis of disseminated histoplasmosis. These tests are done when disseminated histoplasmosis is suspected in a severely ill patient with depressed immunity and who resides in the endemic area or had a compatible exposure.
How Histoplasmosis Is Treated
Most acute histoplasmosis cases resolve themselves after a few weeks of illness. If symptoms are disabling or last beyond 4 weeks, antifungal therapy is recommended.

Chronic histoplasmosis is treated with an antifungal for 12 to 18 months until signs and symptoms disappear.

Disseminated histoplasmosis is treated initially with a combination of IV and oral drugs. In addition, the underlying immunosuppression needs to be addressed.

Living With Histoplasmosis
What to Expect
- Missing school or work for a few weeks because of symptoms
- Having a chest X-ray or chest CT scan and blood test to diagnose histoplasmosis
- Possible need for bronchoscopy
- Taking antifungal therapies for prolonged periods of time
- Repeating chest X-ray and blood test to ensure resolution of the infection of antifungal therapy

Managing Histoplasmosis
Patients usually make a good recovery after completing the treatment course and reversing the underlying immune suppression that might have predisposed them to the infection, such as AIDS or use of immunosuppressing medications.

Finding Support
The Lung Association recommends patients and caregivers join our Living with Lung Disease Support Community to connect with others facing this disease. You can also call the Lung Association’s Lung HelpLine at 1-800-LUNGUSA to talk to a trained respiratory professional who can help answer your questions and connect you with additional support.

Questions to Ask Your Doctor About Histoplasmosis
Making notes before your visit, as well as taking along a trusted family member or friend, can help you through the first appointment with your doctor.
- Do I have histoplasmosis?
- How did I get histoplasmosis?
- What tests will I need?
- What medications will I need?
- Will I need to be in the hospital?
- How long will it take to recover from my infection with histoplasmosis?
- Do I need to take any precautions while I am recovering?