CONDITION

Histoplasmosis - acute (primary) pulmonary

Acute pulmonary histoplasmosis is a lung infection caused by breathing in Histoplasma fungal spores

WHAT IT IS
Short-term fungal infection of the lungs

BODY SYSTEM
Lungs and breathing

MAIN SYMPTOMS
Fever, dry cough, tiredness, chest discomfort

WHAT CAUSES IT
Infection from inhaling Histoplasma spores

HOW IT IS DIAGNOSED
Antigen tests, antibody tests, and sometimes fungal culture

MAIN TREATMENT
Supportive care or antifungal medicines

CAN IT BE CURED?
Yes - most clear naturally or with antifungal treatment

IS IT AN EMERGENCY?
Sometimes - severe breathing difficulty needs emergency care

LONG-TERM OUTLOOK
Most recover fully, though tiredness may linger

Overview

Acute primary pulmonary histoplasmosis is a lung infection caused by the fungus Histoplasma . "Primary" means it follows a first or new exposure. "Pulmonary" means it affects the lungs.

The fungus lives in soil, especially soil enriched with bird or bat droppings. Disturbing contaminated soil can release tiny fungal spores into the air. Infection happens when you breathe them in. Histoplasmosis does not usually spread from one person to another.

Many people have no symptoms or only a mild illness. When symptoms occur, the condition can resemble flu or pneumonia. Most otherwise healthy people recover without long-term lung problems.

A large exposure can cause a more serious infection, even in someone who is healthy. People

with weakened immune systems are more likely to develop severe infection or have it spread beyond the lungs.

Symptoms

Symptoms usually begin several days to a few weeks after exposure. They may develop gradually.

Common symptoms include:

Some people also lose their appetite. Tiredness can continue after the fever and cough improve.

A small number develop painful red bumps on the legs, called erythema nodosum, or pain and swelling in several joints. These are immune reactions to the infection rather than signs that the fungus has entered the skin or joints.

Symptoms alone cannot confirm histoplasmosis. Other fungal infections, bacterial pneumonia, viral infections, tuberculosis, and some non-infectious lung conditions can cause similar problems.

- Fever, chills, or sweating
- Dry cough
- Tiredness and reduced energy
- Headache or muscle aches
- Chest discomfort, especially when breathing deeply
- Shortness of breath

Causes and risk factors

The condition is caused by breathing in airborne spores from Histoplasma . The fungus grows in the environment rather than inside birds. Bird droppings enrich soil and help the fungus grow. Bats can carry the fungus in their digestive systems, so caves and places with bat droppings can also be sources.

Activities linked with exposure include disturbing soil or accumulated droppings during:

Histoplasma is especially common in parts of the central and eastern United States, including areas around the Ohio and Mississippi River valleys. It is also found in parts of Central and South America, Africa, Asia, and elsewhere. Exposure can occur outside traditionally

recognized regions.

The amount of fungus inhaled affects the risk of illness. A heavy exposure can cause severe symptoms in healthy people.

The risk of serious or spreading infection is higher in people with weakened immune systems. This includes some people taking immune-suppressing medicines, those who have received an organ transplant, and those with advanced HIV. Infants and older adults may also be more vulnerable.

- Construction, demolition, or excavation
- Cleaning chicken coops, barns, attics, or abandoned buildings
- Cave exploration
- Landscaping or tree removal
- Cleaning areas where birds have roosted

Diagnosis

A healthcare professional will ask about your symptoms, recent travel, work, hobbies, and possible contact with disturbed soil, caves, birds, or bats. Mentioning a shared exposure is important because several people involved in the same activity may become ill.

A chest X-ray or CT scan may show areas of inflammation or enlarged lymph nodes in the chest. These findings can support the diagnosis, but they are not specific to histoplasmosis.

Laboratory testing may include:

If initial tests are negative but histoplasmosis remains likely, testing may be repeated or combined with another type of test. A procedure called bronchoscopy may occasionally be needed. During bronchoscopy, a thin flexible camera is passed into the airways so fluid or tissue can be collected.

- Antigen testing: Looks for parts of the fungus, usually in urine or blood. It is more likely to detect a heavy or widespread infection and may be negative in a mild case.
- Antibody testing: Looks for your immune system's response to the fungus. Antibodies can take several weeks to appear, so an early test may be negative.
- Fungal culture: Attempts to grow Histoplasma from sputum, lung fluid, or tissue. A positive culture confirms the infection, but growth can take weeks.
- Microscopy: Examines a tissue or fluid sample for the fungus.

Treatment and management

Treatment is based on how severe the illness is, how long symptoms have lasted, test and scan findings, and whether your immune system is weakened.

Many mild infections in otherwise healthy people improve without antifungal medicine. Management may include rest, fluids, and medicines for fever or discomfort when these are safe for you. Recovery should still be monitored if symptoms are persistent or the diagnosis is uncertain.

Antifungal treatment may be considered when symptoms are moderate, prolonged, or worsening. It is also more likely to be recommended for people at increased risk of severe or spreading infection. Itraconazole is a commonly used antifungal medicine for pulmonary histoplasmosis.

Severe infection may require hospital care. Treatment usually begins with an antifungal medicine given into a vein, followed by an oral antifungal after the condition stabilizes. Oxygen and other supportive care may also be needed.

Antifungal medicines can interact with many prescription and non-prescription products. Itraconazole absorption and blood levels can also be unpredictable. Blood tests may be used to check medicine levels, liver function, and response to treatment. Do not stop prescribed treatment early without medical advice, even if you feel better.

Steroids like prednisone or hydrocortisone are not routine treatment for the fungal infection. Specialists may use them in selected cases involving severe lung inflammation or certain immune-related complications.

Complications

Complications are uncommon after a mild infection but are more likely after a heavy exposure or in someone with reduced immunity.

Possible complications include:

A rare delayed complication called fibrosing mediastinitis causes dense scar tissue to develop in the central part of the chest. This can compress major blood vessels or airways. It is an abnormal immune response associated with previous Histoplasma exposure, not usually an ongoing active fungal infection.

A pulmonary nodule left by histoplasmosis may resemble cancer on a scan. Further imaging or testing may be needed to tell them apart.

- Low blood oxygen or severe breathing failure
- Spread to organs outside the lungs, called disseminated histoplasmosis
- Inflammation around the heart, called pericarditis
- Enlarged chest lymph nodes that press on nearby structures
- Persistent lung nodules or areas of scarring
- Joint inflammation or erythema nodosum

Prevention

Histoplasmosis cannot always be prevented because Histoplasma can be present in the environment without being visible.

You can reduce exposure by avoiding large accumulations of bird or bat droppings and unnecessary disturbance of contaminated soil. High-risk cleanup should be planned carefully. Wetting dusty material and using appropriate containment can reduce the amount released into the air.

An ordinary face covering does not reliably protect against airborne fungal spores. Certain jobs or cleanup projects may require a properly selected and fitted respirator, along with other workplace controls.

If your immune system is weakened, ask for advice before entering caves, cleaning coops, demolishing old structures, or doing other work likely to disturb droppings or contaminated soil. Professional removal may be safer for heavily contaminated areas.

Living with it and what to expect

Most people with mild acute pulmonary histoplasmosis recover fully. Fever and cough may improve over days to weeks, while tiredness can last longer. Recovery after a more severe infection may take several weeks or months.

Chest scan changes often improve more slowly than symptoms. Small nodules or calcified lymph nodes may remain after the infection has cleared. These findings do not always need treatment, but they may need comparison with older scans or follow-up imaging.

Routine follow-up depends on the severity of the infection and your immune health. It may include reviewing symptoms, checking for medicine side effects, blood tests, or repeat imaging. People treated with antifungals like fluconazole or terbinafine may need monitoring

during and after treatment.

Most people return to their usual activities as their breathing and energy improve. Building activity up gradually may be more manageable than trying to return immediately to a full schedule.

Reinfection is possible after another exposure. The fungus can also remain inactive in the body and, rarely, become active later, particularly if the immune system becomes severely weakened.

When to get medical help

Arrange a medical assessment if you develop fever, cough, chest discomfort, or unusual tiredness after disturbing soil or bird or bat droppings. This is especially important if symptoms are not improving, several people from the same activity are ill, or you have a weakened immune system.

Seek prompt medical advice if:

Call emergency services for severe difficulty breathing, blue or grey lips, fainting, new confusion, or severe chest pressure. These can be signs of dangerously low oxygen or another urgent condition.

Routine follow-up is appropriate when symptoms are steadily improving and you have no warning signs. Keep planned appointments if you are taking antifungal medicine or have been asked to repeat blood tests or imaging.

- Breathlessness is new or getting worse
- Fever is persistent or returns after improving
- You cannot keep down enough fluids
- You cough up blood
- Symptoms continue for several weeks
- You develop possible antifungal side effects, such as yellow skin or eyes

Common questions

Is histoplasmosis contagious?

No. Pulmonary histoplasmosis is acquired by breathing fungal spores from the environment. It does not usually spread through coughing, touching, kissing, or sharing a home.

Will acute pulmonary histoplasmosis go away on its own?

Many mild infections clear without antifungal treatment, particularly in otherwise healthy people. Persistent, moderate, severe, or high-risk infections may need antifungal medicine. Symptoms that are worsening or not improving should be assessed rather than assumed to be self-limiting.

How long does recovery take?

Mild symptoms may improve within a few weeks. Tiredness, cough, and reduced exercise tolerance can last longer. Recovery from severe infection may take months, and scan abnormalities can remain after you feel well.

Can histoplasmosis come back?

It can. A person may be infected again after another environmental exposure. Inactive infection can also reactivate, especially if the immune system later becomes severely weakened. Recurrence is less common in otherwise healthy people who recover from a mild infection.

Why are bird and bat droppings linked with histoplasmosis?

Bird droppings can enrich soil and create conditions where Histoplasma grows. Bats may carry the fungus, and their droppings can contaminate caves or buildings. The main risk comes from breathing dust when contaminated material is disturbed.

Can histoplasmosis cause a spot on a lung scan?

Yes. A healed infection can leave a lung nodule, sometimes with calcium inside it. Because nodules have several possible causes, their appearance and changes over time may need to be reviewed before they can be attributed to histoplasmosis.

Sources

- Centers for Disease Control and Prevention. Clinical Overview of Histoplasmosis . National Center for Emerging and Zoonotic Infectious Diseases.
- Centers for Disease Control and Prevention. Testing Algorithm for Histoplasmosis . Guidance for evaluating suspected pulmonary infection.
- Infectious Diseases Society of America. 2025 Guideline Update on the Treatment of Asymptomatic Histoplasma Pulmonary Nodules and Mild or Moderate Acute Pulmonary Histoplasmosis .

- Wheat LJ, Freifeld AG, Kleiman MB, et al. Clinical Practice Guidelines for the Management of Patients with Histoplasmosis: 2007 Update by the Infectious Diseases Society of America . Clinical Infectious Diseases . 2007;45(7):807-825.
- Azar MM, Hage CA. Clinical Perspectives in the Diagnosis and Management of Histoplasmosis . Clinics in Chest Medicine . 2017;38(3):403-415.
- Kauffman CA. Histoplasmosis: A Clinical and Laboratory Update . Clinical Microbiology Reviews . 2007;20(1):115-132.