Learn About Coccidioidomycosis

Coccidioidomycosis, also called valley fever, is a common infection in the southwestern United States that primarily affects the lungs.

Key Facts

- Coccidioidomycosis is a fungal infection that typically affects the lungs.
- You get the disease by inhaling fungal spores that are present in the soil.
- It is not contagious, meaning it cannot be passed from person to person.
- It may be treated with antifungal medication, but not with antibiotics.

What Is Coccidioidomycosis?

Coccidioidomycosis, commonly referred to as “valley fever,” is an infection caused by a fungus (Coccidioides) found in the soil in the southwestern United States, northern Mexico, and parts of Central and South America. It is a common cause of pneumonia in Arizona and California but is also present in parts of Utah, Nevada, Texas, and New Mexico. Individuals who either live in or travel through these areas are at risk for infection.

How Coccidioidomycosis Affects Your Body

Once inhaled, the fungus multiplies, leading to the progression and development of the disease. The time from exposure to the development of symptoms may take several weeks. Because the fungus is inhaled, the disease typically affects the lung. In a small number of people, it may spread outside of the lung and affect other parts of the body.

How Serious Is Coccidioidomycosis?

The disease is a common problem in Arizona and California and is being diagnosed more frequently. Since the disease may also occur in travelers to these regions, it has been recognized throughout the country, with more than 100,000 cases being reported nationally between 1998 and 2011. Many more mild cases remain unreported because people with mild symptoms never seek medical attention.

- Many people who have coccidioidomycosis have minimal symptoms and do not require treatment.
- Some people may develop more serious disease that requires treatment.
- More serious or progressive disease may develop in anyone, but people with weakened immune systems are at higher risk.

Coccidioidomycosis Symptoms, Causes, and Risk Factors

Coccidioidomycosis is often misdiagnosed and treated as bacterial pneumonia, which is more common. The symptoms and initial testing are often not enough to distinguish it from other causes of infection.

What Are the Symptoms of Coccidioidomycosis?

Many people infected with coccidioidomycosis have no or minimal symptoms. When present, typical symptoms include:

- Cough
- Chest pain
- Shortness of breath
- Fever
Symptoms more typical of pneumonia due to coccidioidomycosis include:
- Joint aches
- Fatigue
- Rash
- A disease that lasts for weeks rather than days

A small number of people affected by coccidioidomycosis go on to develop chronic disease that may affect lung function and require prolonged treatment or even surgery. In some individuals with previously undiagnosed coccidioidomycosis, chest X-ray or CT scan findings may resemble lung cancer or other chronic lung infections, such as tuberculosis. Fewer than 1% of people infected will develop disseminated disease (disease outside of the lungs), which may involve the skin, bone, joints, or meninges (protective layers around the brain).

What Are the Causes of Coccidioidomycosis?
A fungus, *Coccidioides*, causes coccidioidomycosis. This fungus is present in the soil in dry regions of the Western Hemisphere. It is acquired by inhalation of the organism into the lungs, where it multiplies and causes disease.

What Are the Risk Factors for Coccidioidomycosis?
People living in or traveling to endemic regions are at risk for acquiring the disease. Exposure to dust storms or areas where soil is being disturbed, such as construction sites, is associated with an increased risk. African-Americans and Filipinos seem to be at increased risk relative to Caucasians, perhaps related to a genetic predisposition to develop this infection. Persons with compromised immune systems are at increased risk of developing severe or disseminated disease. These include:
- HIV infection
- People taking immune-suppressing medication therapy for a variety of autoimmune or rheumatologic diseases

When to See Your Doctor
If you live in or have traveled to an area where coccidioidomycosis occurs and develop these symptoms, you should consult with your health-care provider.

Diagnosing and Treating Coccidioidomycosis
Coccidioidomycosis is diagnosed and treated differently from other causes of pneumonia. Early diagnosis and recognition of the disease are important to allow appropriate follow-up and treatment of affected individuals, as well as to avoid unnecessary treatment and tests.

What to Expect
Coccidioidomycosis often goes unrecognized and requires specific testing to make a diagnosis. Health-care providers may not always consider coccidioidomycosis in people who are at risk for the disease. In particular, people who have traveled to the regions where the infection is most likely to occur (“endemic” regions) but develop disease after returning may be at risk for misdiagnosis, as health-care providers outside of these areas may be less familiar with the disease. For these reasons, the diagnosis of coccidioidomycosis is often delayed and may require multiple visits to a health-care provider.

How Coccidioidomycosis Is Diagnosed
Coccidioidomycosis is most commonly diagnosed by a blood test. This test examines the response of the immune system to the fungus. An abnormal blood test in the appropriate clinical setting is adequate to make the diagnosis. Early in the course of infection, with recent onset of symptoms, the initial test may be negative, and repeat testing is advised. A definitive diagnosis is made by demonstrating the presence of the
fungus, either by examination of infected tissue with a microscope or by growth in a lab. Testing for coccidioidomycosis may include:

- Blood tests
- Sputum samples, produced by coughing or bronchoscopy
- Chest X-ray and/or CT scan
- Biopsy of the affected site, typically the lung

**How Coccidioidomycosis Is Treated**

Most individuals with coccidioidomycosis do not require specific treatment. Treatment with antifungal medications may be prescribed for those with more severe symptoms or symptoms lasting 8 weeks or longer.

Treatment may be considered earlier or in less severe disease in people with the following conditions or risk factors:

- Chronic obstructive pulmonary disease (COPD)
- Chronic kidney disease
- Congestive heart failure (CHF)
- Immunocompromised conditions
- African-American or Filipino-American ethnicity
- Pregnancy

Diagnosed individuals who require treatment are typically treated with an antifungal medication taken as a pill. Therapy typically lasts for several months, and the length will vary depending on response to treatment as determined by symptoms and diagnostic tests. More severe cases may require hospitalization and intravenous (IV) antifungal medication. In patients with depressed immune systems or with disease outside the lung (disseminated), lifelong therapy may be required. In very few individuals, surgery may be required to remove portions of infected or damaged lung.

**Living With Coccidioidomycosis**

Most people diagnosed with coccidioidomycosis will not require therapy and the disease will go away on its own. Some people have symptoms that persist for months after resolution of the disease, while others may require prolonged treatment.

**What to Expect**

People affected by acute coccidioidomycosis that do not require therapy should follow up regularly with their health-care providers for the first year after diagnosis, as they are at a higher risk for developing chronic or disseminated infection during this time. Many diagnosed individuals will be referred to a pulmonary or infectious disease specialist, although this is less likely to happen in regions where the primary care provider is familiar with the disease. Although all symptoms eventually go away in the majority of diagnosed individuals, many experience profound fatigue lasting several months. Individuals diagnosed with coccidioidomycosis can participate in regular work, exercise, and diet routines if symptoms permit. In such cases, reconditioning physical therapy may be beneficial.

**Managing Coccidioidomycosis**

Follow-up examinations with your health-care provider, as well as follow-up blood testing and imaging, such as chest X-rays or CT scans, are recommended during the first year after infection. People diagnosed with coccidioidomycosis without signs of chronic or widespread disease are not at risk for getting coccidioidomycosis again unless they develop depressed immune systems.

**Finding Support**

Disease information and resources regarding specialty centers and support may be found through the Valley Fever Center for Excellence.

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 Coccidioidomycosis

Making notes before your visit and taking along a trusted family member or friend can help you through the first appointment with your doctor.

If you believe that you may have coccidioidomycosis:

- What symptoms suggest coccidioidomycosis?
- What tests are needed to make the diagnosis?
- If the initial tests are negative, what follow-up, if any, is needed?

If you have been diagnosed with coccidioidomycosis:

- How do we know whether I need treatment?
- How frequently do I need follow-up, and what follow-up testing will I need?
- How long do I need to be treated, and what are the possible side effects?
- What are the potential downsides of not taking antifungal therapy if it is prescribed?
- What signs or symptoms of progressive disease should I watch for?
- What are the long-term effects of coccidioidomycosis?

If you are traveling to/through the endemic region and have an increased risk for developing severe infection:

- Am I at increased for getting coccidioidomycosis?
- What, if any, preventive measures should I take?
- If I get sick, where should I go to get care?

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