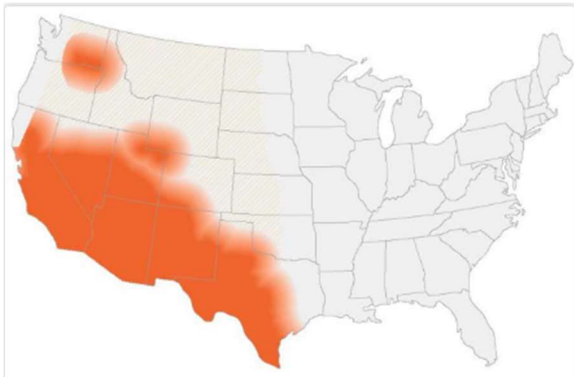


**IN THIS ISSUE: COCCIDIOIDOMYCOSIS (VALLEY FEVER)****Coccidioidomycosis (Valley Fever)****Introduction**

Coccidioidomycosis, also known as valley fever, is a disease caused by breathing in microscopic spores from the fungus *Coccidioides*.<sup>1</sup> This fungus can be found in the soil of the southwestern United States (Arizona, California, Nevada, New Mexico, Texas, Utah, south-central Washington) as well as parts of Mexico and Central and South America. Parts of Arizona and California are considered endemic for valley fever.<sup>2</sup>

**Figure 1: Estimated areas with coccidioidomycosis (valley fever) in the United States**



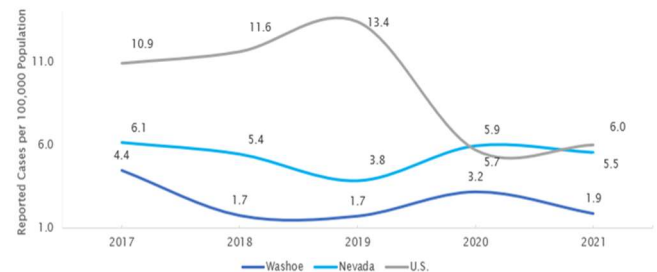
Source: <https://www.cdc.gov/fungal/diseases/coccidioidomycosis/maps.html>

**Epidemiology**

Infection occurs when the fungal spores are inhaled when contaminated soil and dust are disturbed by humans, animals, or weather (i.e., gardening, construction, dust storms, earthquakes). Cases are more frequently reported during hot and dry seasons, especially after wind and dust storms.<sup>3</sup> The spores enter the body and change shape into spherules which eventually break open and release endospores that can travel from the lungs to other organs.<sup>3</sup> Valley fever is estimated to cause 15-30% of community-acquired pneumonias.<sup>4</sup> Although extremely rare, valley fever can also be caused by infected organ transplant, inhaling spores from a wound infected with *Coccidioides*, or contact with contaminated objects (i.e., rocks or shoes).<sup>3</sup>

In 2021, the United States had a rate of 6.0 per 100,000 population for reported valley fever cases. Nevada reported 5.5 cases per 100,000 population, while Washoe County reported a rate of 1.6 per 100,000 population.<sup>4</sup> The number of cases reported may be underestimated because of misdiagnosis due to lack of testing. Reported cases may also vary from year to year as the number of persons exposed to the fungus via traveling or moving to endemic areas, environmental factors such as temperature and rainfall, and the methods by which cases are detected and reported.<sup>4</sup>

**Figure 2: Rate of reported coccidioidomycosis cases, 2017-2021**



Source: <https://www.washoecounty.gov/health/programs-and-services/ephp/statistics-surveillance-reports/annual-communicable-disease-summary-reports.php>

Valley fever is not contagious and does not spread from person-to-person or animal-to-human. Pets, particularly dogs, can also contract valley fever. Infection presents similar to human illness but is not zoonotically transmitted.<sup>6</sup>

**Prevention and Risk Factors**

People who are exposed to soil, live or are traveling through the southwestern United States or parts of Mexico or Central/South America can be exposed to valley fever.<sup>6</sup> It is more common in those over the age of 60 years but can affect anyone with regular contact with disturbed soil. Those at higher risk for developing severe forms of valley fever include immunocompromised individuals (have HIV/AIDS, had an organ transplant, or taking

immunosuppressive medications), pregnant women, people who have diabetes, and those of black or Filipino descent.<sup>6</sup>

It is recommended persons at higher risk of developing severe disease or persons who live in endemic areas avoid areas with a lot of dust (construction or excavation sites). If unable to avoid these areas, wear an N95 respirator while at the location. Stay indoors during dust storms, close windows, and use air filtration indoors. Limit activities involving close contact with soil such as gardening or yard work. Lastly, wash skin injuries with soap and water if open skin wounds were exposed to dirt or dust. Currently, commercial testing of soil for *Coccidioides* is not available. Soil testing is solely done for scientific research.

### Signs & Symptoms

Symptoms of valley fever can appear between 1 and 3 weeks after a person is exposed to the fungal spores.<sup>2</sup> While some cases may be asymptomatic, some symptoms can last anywhere between a few weeks to a few months.<sup>7</sup> Typical symptoms can include: fatigue, cough, fever, shortness of breath, headache, night sweats, muscle aches or joint pain, and rash on upper body or legs. In 5-10% of cases, some symptoms may become severe and can develop into long-term respiratory problems.<sup>2</sup> In about 1% of diagnosed cases, the infection can spread from the lungs to other parts of the body, including the central nervous system, skin, bones, and joints.<sup>6,7</sup>

### Diagnosis & Testing

Providers should consider medical history, travel history, physical examinations, chest x-rays or computed tomography (CT) scans, and laboratory testing to diagnose valley fever. The most common diagnostic tool is serologic testing. There are currently two enzyme immunoassays (EIA) available to test for specific IgM and IgG antibodies. Other serological tests can include immunodiffusion (ID) to detect IgM antibodies and complement fixation (CF) that detect IgG antibodies to assess disease severity. Lateral flow assay (LFA) is a rapid test used to detect the presence of total antibodies against *Coccidioides* spp.<sup>2</sup>

There are other types of tests that can be used but are not used as commonly for diagnostic purposes. Tissue and respiratory cultures, microscopy, urine antigens, and polymerase chain reaction (PCR) can be used to identify *Coccidioides* infections but either have low sensitivity or are still in experimental phases.<sup>2</sup>

### Treatment

Some infections can be resolved on their own without the use of antifungal treatments. At this time, there is no evidence that shows that antifungals impact the duration or prevent further complications in uncomplicated coccidial infections.<sup>2</sup> Those who are considered high risk are advised to be treated with antifungals for primary pulmonary coccidioidomycosis. Disseminated coccidioidomycosis requires treatment, typically fluconazole or amphotericin B.<sup>2</sup>

### Reporting

The list of reportable communicable diseases and reporting forms can be found at:

<http://tinyurl.com/WashoeDiseaseReporting>

**Report communicable diseases to Northern Nevada Public Health. To report a communicable disease, please call 775-328-2447 or fax your report to the NNPH at 775-328-3764.**

### Acknowledgement

Thank you to all health care providers, infection control practitioners, laboratory staff, as well as schools and daycares for their reporting and collaboration to make this work possible.

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