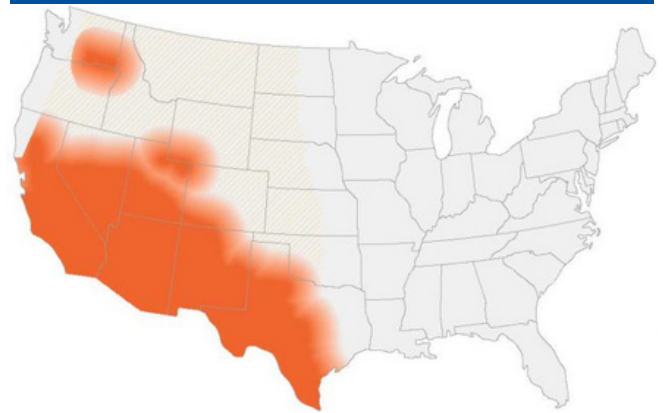


VALLEY FEVER FUNGAL DISEASE

Coccidioides fungi in the continental United States



Valley fever (also known as Coccidioidomycosis) is a serious, costly illness resulting from a fungal infection. The fungus that causes Valley fever – *Coccidioides* – is found in soil across California, Arizona, and several other western states, as well as parts of Mexico, Central America, and South America.

Transmission

Disturbance of contaminated soil by human or animal activity or by weather events like rain storms and tornadoes release *Coccidioides* spores into the air. Valley fever is not a contagious illness; people exposed to contaminated dust particles can breathe in the microscopic fungal spores and become infected. Valley fever is common among individuals with occupations that require contact with dirt and dust and in populations exposed to severe weather events. Construction workers, agricultural workers, and military personnel are three large occupational groups at particularly high risk. Research is still ongoing as to what level of activity can be tied to infection and which environments support propagation and spread of the fungus.

Symptoms

Symptoms of Valley fever include coughing, chest pain, fever, headache, chills, and fatigue. People with weakened immune systems are at particular risk for serious cases. Severe cases might last for weeks, months, or years, and can result in hospitalization and death. Valley fever infection can spread beyond the lungs to other parts of the body, including such vital organs as the heart, liver, and brain. Meningeal infection occurs when the fungus reaches the brain. Patients experiencing this type of infection require antifungal treatment for life. If untreated, meningeal infection is fatal.

This map from the US Centers for Disease Control and Prevention (CDC) illustrates the environmental range of *Coccidioides* fungi in orange. The slanted lines show a potential range conducive to *Coccidioides*. **By 2095, Valley fever is expected to be endemic across the entire western US.**

CDC recommendations for preventing Valley fever



Stay indoors and make sure you have proper air filtration

Avoid high dust environments and activities



Wear an N95 mask if working in such environments

Efforts to combat Valley fever

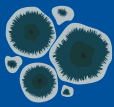
The National Institute of Allergy and Infectious Diseases at the National Institutes of Health has established an awards program to create a network of [Coccidioidomycosis Collaborative Research Centers](#) as part of their broader [strategic plan](#) to develop a human vaccine by 2031.



The [University of Arizona Valley Fever Center for Excellence \(VFCE\)](#) works to improve understanding, medical care, and research about the disease. The VFCE is testing a [vaccine candidate](#) to combat [Valley fever in dogs](#). This candidate could pave the way for a [first-of-its-kind vaccine in humans](#), as there are currently no approved vaccines for human fungal diseases.

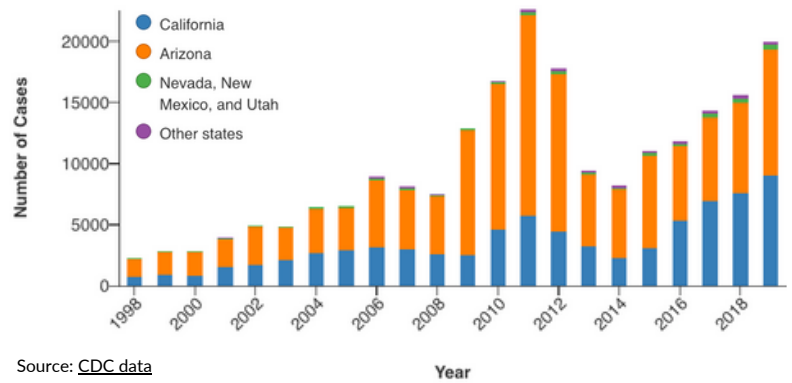


The state-wide [University of California \(UC\) system](#) has many campuses researching the fundamental biology of *Coccidioides* and working to develop better therapies and diagnostics.



The FY2023 Consolidated Appropriations Act included key provisions from the Finding Orphan-disease Remedies With Antifungal Research and Development (FORWARD) Act to foster antifungal R&D.

Cases in the United States



Source: [CDC data](#)

Annual documented cases of Valley fever in the US rose in the previous decade. [Valley fever is often missed or misdiagnosed](#), so these reported cases likely represent a small portion of the true caseload.

Approximately **75%** of individuals infected with Valley fever report missing work or school, with nearly **40%** requiring hospitalization for treatment that is estimated to cost an average of **\$50,000 per patient**.

Treatments and AMR

For many, Valley fever will resolve without treatment. For those with severe symptoms or at risk of developing severe symptoms, [first-line treatment](#) for Valley fever is a months-long course of antifungal medication.

Currently, there are only [four classes of antifungal treatments](#). Some fungal pathogens have become [resistant to all four treatments](#), in what is known as antimicrobial resistance (AMR). AMR occurs when bacteria, viruses, fungi, and parasites change over time and no longer respond to medicines, making infections harder to treat and increasing the risk of disease spread, severe illness, and death. It soon may become impossible to treat Valley fever unless there is more investment in research & development for new antifungal therapeutics.