

# Researchers advance vaccine against Valley fever

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Medical mycologists in The South Texas Center for Emerging Infectious Diseases (STCEID) and the Department of Biology at The University of Texas at San Antonio (UTSA) have significantly advanced the fight against San Joaquin Valley Fever, a respiratory infection of humans, commonly called Valley Fever, which is caused by the *Coccidioides* fungus. For the first time, the researchers have genetically engineered a live, attenuated vaccine that successfully protects mice against Valley Fever, known in scientific circles as coccidioidomycosis.

A live, attenuated vaccine is used as a preventative treatment based upon creation of a mutated form of the pathogen that is no longer capable of causing disease.

*Coccidioides*, a soil-dwelling fungus, is responsible for significantly increased numbers of respiratory infections among outdoor workers when compared to the general population. In addition, people with compromised T-cell immunity, the elderly and certain racial groups, such as African-Americans and Filipinos who live in the Southwestern United States, have an increased incidence of the infection's symptoms, caused by the inhalation of *Coccidioides* spores.

In approximately 40% of human [Valley Fever](#) cases, respiratory problems set in one to three weeks after inhalation. Although less than one percent of infected individuals experience severe symptoms, such as chronic-progressive pneumonia or meningitis, the incidence of reported primary pulmonary infection cases in Arizona and California is on the

rise, having significantly increased in the last decade.

STCEID researchers at UTSA and Wilford Hall Medical Center at San Antonio's Lackland Air Force Base have long collaborated on *Coccidioides* studies in the hopes of developing a vaccine to better protect those who are exposed to it in the future. This most recent study has been funded by the National Institute of Allergy and Infectious Diseases, the California HealthCare Foundation and the Margaret Batts Tobin Foundation.

"Respiratory infections caused by *Coccidioides* tend to escape the radar of most large pharmaceutical companies, because only about 100,000 cases are reported each year," said Garry Cole, professor of biology at UTSA and the study's principal investigator.

He adds, "But when I look at 100,000 cases, I see 100,000 faces looking back at me."

Source: University of Texas at San Antonio

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