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VALLEY FEVER DISEASE INCIDENCE ASSOCIATED WITH ANTECEDENT CLIMATE CONDITIONS

Valley fever disease incidence associated with antecedent climate conditions in Kern County, California.

According to a study from the United States, "Coccidioidomycosis (valley fever) is a systemic infection caused by inhalation of airborne spores from Coccidioides immitis, a soil-dwelling fungus found in the southwestern United States, parts of Mexico, and Central and South America.

"Dust storms help disperse C. immitis so risk factors for valley fever include conditions favorable for fungal growth (moist, warm soil) and for aeolian soil erosion (dry soil and strong winds)."

"Here, we analyze and intercompare the seasonal and interannual behavior of valley fever incidence and climate risk factors for the period 1980-2002 in Kern County, California, the U.S. county with highest reported incidence.

"We find weak but statistically significant links between disease incidence and antecedent climate conditions. Precipitation anomalies 8 and 20 months antecedent explain only up to 4% of monthly variability in subsequent valley fever incidence during the 23-year period tested," C.S. Zender and colleagues at the University of California, Irvine report.

"This is consistent with previous studies suggesting that C. immitis tolerates hot, dry periods better than competing soil organisms and, as a result, thrives during wet periods following droughts. Furthermore," continued the authors, "the relatively small correlation with climate suggests that the causes of valley fever in Kern County could be largely anthropogenic."

Researchers concluded, "Seasonal climate predictors of valley fever in Kern County are similar to, but much weaker than, those in Arizona, where previous studies find precipitation explains up to 75% of incidence. Causes for this discrepancy are not yet understood.

"Higher resolution temporal and spatial monitoring of soil conditions could improve our understanding of climatic antecedents of severe epidemics."


For more information, contact C.S. Zender, University of California Irvine, Dept. Earth Systems Science, Irvine, CA 92697, USA.
Publisher contact information for the *International Journal of Biometeorology* is: Springer, 233 Spring Street, New York, NY 10013, USA.

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