

What you need to know about dust storms and valley fever

By Sandy Keaton Leander, ASU News
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Every summer, Arizona's monsoon season typically blows up from June through September, with the most intense storms in July and August. Monday's massive dust storm, or haboob, is evidence of just how nasty these storms can get.

Dust storms, while a typical part of an Arizona summer, can turn into dangerous events — reaching heights of more than a mile and often spanning tens of miles — causing nearly zero visibility, knocking out electrical power, grounding flights and causing damage to trees and homes.

But do they cause other issues? Are you at a higher risk of contracting valley fever during these dust storms? Public awareness and understanding about the disease are mixed.

What does science tell us?

We spoke with [Dave Engelthaler](#), executive director of the [Health Observatory at Arizona State University](#), to find out. The Health Observatory advances knowledge and understanding of health issues in the Southwest, from valley fever to extreme heat to chronic and behavioral health conditions.

Engelthaler is a native Arizonan and has over three decades of experience studying public health issues in the state. He was previously the Arizona state epidemiologist and biodefense coordinator, the director of TGen North, and a biologist for both the CDC and the U.S. Forest Service. He has published more than 180 scientific papers and chapters on epidemiology, disease ecology and genetics.

Question: Does the risk for getting valley fever rise when dust storms (haboobs) roll through the desert?

Answer: There is a common thought that these massive dust storms cause valley fever, because it makes sense. The fungus is in the dirt, haboobs expose us to a lot of dirt, and therefore it must cause more more cases of valley fever. But it turns out that this is just mythology. Recent published studies point to little to no impact on the number of cases of valley fever, and actually cause no more fungus to get in the air.

Q: Why don't dust storms cause more valley fever?

A: The valley fever fungus lives below the surface of the soil. Haboobs and other dust storms only spread the dirt that's on top of the soil. So while there certainly is a lot of dirt and other material in the air, we don't detect any more fungus in the air during these storms than in the days before and after storms. Additionally, epidemiological analyses have not shown increases in cases following storms. But there is an increase in asthma attacks and other respiratory conditions.

Q: Do I lessen the risk of getting valley fever and other illnesses by staying indoors during dust storms or by using air purifiers in my home?

A: You definitely lower your risk of breathing in harmful dust if you stay indoors during dust storms, if your doors and windows are closed. It is not healthy to breathe in the fine particles that are flying around in the air, so air purifiers also help.

Q: How do people get valley fever?

A: The primary way to get valley fever is to breathe in the microscopic fungus, called coccidioides, which can get up into the air after infected soil is disturbed from things like construction, recreation and even gardening. The fungus can get down deep in the lungs and turn into a form that grows and spreads in the lungs, which leads to a flu-like disease, or even worse.

Q: How serious is this disease, and what should people watch for?

A: The good news is that most cases are not life-threatening. But infections can last weeks or months, and can keep people out of school or work for long periods. The primary symptoms are extreme fatigue, coughing and chest pain, fever and oftentimes a rash. In most cases, people can get through an infection just fine, but sometimes the fungus will escape the lungs and go to other parts of the body, including the brain. Most of the time, these more severe cases require long-term treatment with antifungal medications.

Q: What do we know about the rate of valley fever infections in Arizona? Are they increasing, and if so, why?

A: The number of reported cases in Arizona has remained at about 10,000-11,000 cases per year over the last five years. But we know this is the tip of the iceberg. The CDC recently estimated that there are actually 10-15 times that number of infections every year. California has been seeing increasing cases during this time period, but it is not clear if that's due to more exposure from more construction, or more awareness and therefore more testing, or an increase because of environmental and climate changes. It's likely a combination of all those things.

Q: If someone is already infected with the spores that cause valley fever, are they more vulnerable to the effects of the dust storms, and can their infection get worse?

A: This is not well understood. Exposure to fine particles of dust can irritate the cells in the lungs and result in several bad lung illnesses. We know that exposure to dust storms can exacerbate allergies, asthma and diseases like COPD, and even cause bronchitis and put people at risk for other infections.

Q: Are there are other health issues we need to consider with both haboobs and monsoon rains?

A: Besides the harm that breathing in dust can cause, the monsoon rains that often follow haboobs can have their own health effects. Of course we can see flash floods, which can put drivers and hikers at risk, but often the rains leave pools of water, fill old tires and even things like empty soda cans, which can be a breeding ground for mosquitoes. It's not commonly known, but Maricopa County is the national hot spot for West Nile virus, spread by our local mosquitoes. After the rains, we need to be conscientious about emptying containers and not breeding mosquitoes.

Q: Should people who travel to Arizona be concerned about contracting valley fever?

A: We don't like to think about it, but every place has its own health risks; one of ours happens to be valley fever. Most people who get exposed don't get symptoms. Most people that have symptoms don't have a life-threatening disease. And when you recover, you are likely immune for life. The overall risks are low, especially if you are not digging in the dirt and if you don't have an immune deficiency.

Q: Where in the U.S. are people most susceptible to valley fever?

A: The vast majority of all cases in the U.S. occur in the Phoenix metropolitan area, Tucson or the area around Bakersfield, California. But cases can occur throughout the Southwest, including Nevada, Utah, New Mexico and Texas. Travelers to the Southwest who get sick with valley fever-like symptoms within a few weeks of their return should tell their health care provider about their travels.

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Main image



A monsoon storm as seen from downtown Tempe. Photo by Deanna Dent/Arizona State University

Text image(s)



Dave Engelthaler