

We have both Valley fever and COVID-19 in Arizona. Things to know.

John Galgiani MD

University of Arizona Valley Fever Center for Excellence

and

Banner University Health Valley Fever Program

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The new Corona Virus, SARS-CoV-2 or more commonly COVID-19, is increasing throughout Arizona at the present time. We have something here that is not a factor in most other places where the COVID-19 epidemic is happening, namely coccidioidomycosis or Valley fever. Valley fever is caused by a fungus, not a virus, and it is not spread from person to person as is COVID-19. However, it is common with an estimated one out of a hundred persons living in Maricopa, Pinal, and Pima Counties become ill each year.

And there are many other similarities.

- Both Valley fever and COVID-19 are acquired through the respiratory track.
- The symptoms overlap: fever, cough and shortness of breath could result from either.
- Infections from either can be completely without symptoms.
- Illness can range from mild to life-threatening
- Many of both go undiagnosed: for COVID-19 because tests are not available everywhere and for Valley fever the medical community does not always think about doing the right tests
- Even when testing is done, negative results are not always right.

With all of these similarities, how can you tell them apart? Strictly speaking, you can't.

However, their general patterns are different and can provide fairly strong clues:

- COVID-19 is emerging as an epidemic. The numbers of cases right now are rising and at some point in the next several weeks are expected to recede. Valley fever is with us constantly with seasonal changes each year. As COVID-19 cases hopefully decline in the coming weeks, the number of Valley fever cases are expected to increase into the summer.
- COVID-19 causes an acute illness. Chronic COVID-19 illnesses have not been described. In contrast, while Valley fever sometimes starts abruptly, it typically continues for weeks to several months before symptoms completely resolve.
- The major complication of COVID-19 is respiratory failure. While Valley fever can do this, it's complications also include infection spreading to other parts of the body, causing destruction in bones, skin, the brain, or elsewhere.

It is theoretically possible to contract both COVID-19 and Valley fever at the same time. The odds of this happening will be very low. It makes sense that having two infections at once would be worse than having only one alone, but thus far we have not experience to know how bad simultaneous infections would be. On the other hand, past Valley fever infections, which are very common in Arizona residents, do not interfere with a persons immune system and

therefore we have no reason to think those individuals would be at any higher risk to complications of COVID-19

Both COVID-19 and Valley fever are major public health problems for Arizona and other endemic parts of the Southwestern United States such as Bakersfield and the California Central Valley. Published costs of Valley fever to California in 2017 were estimated to be \$700 million and a similar cost estimate from the Siedman Institute for Arizona appears to be similar for 2018. The ultimate control of both COVID-19 and Valley fever could come from a vaccine. While work is underway for a COVID-19 vaccine, a vaccine candidate already exists for Valley fever. Discovered by scientists at the University of Arizona, it is currently being developed to prevent Valley fever in dogs who have an even greater problem with Valley fever than people. Demonstrating that Valley fever can be controlled in pets would provide even more evidence that it could also be prevented in humans. This is a very exciting and very active area of research.