Valley fever is a potentially serious infectious disease acquired by inhaling microscopic fungal spores that live in soil.

Exposure Risk

The fungus that causes valley fever, *Coccidioides*, is found in the southwestern United States and parts of Mexico, Central America and South America. About 10,000 U.S. cases are reported annually to the Centers for Disease Control and Prevention (CDC), the majority of them in Arizona and California. Some cases have recently been reported in south-central Washington state.

Disruption of the soil releases fungal spores. Exposure risk is highest in regions where the fungus is endemic (native and common). Workers in construction, agriculture, mining, utilities, and oil and gas extraction are among those with heightened exposure risk. Others include archaeologists, geologists, military personnel and wildland firefighters, according to the National Institute for Occupational Safety and Health (NIOSH). Special circumstances apply to those who study the disease in laboratories.
Coccidioides is thought to grow best in soil after heavy rain. Windy, hot and dry conditions increase the likelihood that fungal spores will be released into the air. The effect of changing climactic conditions on valley fever is being studied.

Valley fever is not contagious: it cannot be transmitted from one person to another or by an infected animal to a person. It can be acquired at any age, however, public officials say it most commonly occurs in adults over 60. Groups with increased risk of serious illness include those with weakened immune systems or diabetes, pregnant women, and people of African American, Hispanic or Filipino descent.

Most individuals who become infected will not get valley fever again.

Symptoms and Treatment

When exposure or disease is suspected, prompt medical evaluation and treatment is necessary.

Many people who are exposed to the fungus never develop symptoms or are misdiagnosed because their symptoms are similar to those of other illnesses, such as the flu. Symptoms may include:

- Fever
- Chest pain
- Cough
- Fatigue
- Shortness of breath
- Headache
- Night sweats
- Muscle aches or joint pain
- Rash on upper body or legs

There are a number of diagnostic tests available to confirm a diagnosis of valley fever. They include routine blood tests, microscopic examination of sputum, tissue biopsy, serum tests and fungal genetic analysis. Skin tests may be used to assess whether an individual has been exposed, although they are not as specific or sensitive as some other types of diagnostic tests. A chest X-ray may be performed to identify lung abnormalities; in severe cases body scans may be used as a diagnostic tool.

Milder cases typically resolve on their own within weeks to months. A physician may prescribe antifungal medication to treat underlying infection. Severe cases require hospital care. When the infection spreads outside the lungs it can affect the brain, joints, bone, skin or other organs. This disseminated form of the disease is rare and can be fatal.

Prevention

There is no vaccine to prevent valley fever and no evidence showing that antifungal medication (prophylaxis) protects people who suspect exposure from becoming infected by Coccidioides.
Recommended work practice controls include:
1. Avoiding work in dust storms or high winds, and when possible, staying upwind when digging.
2. Minimizing hand digging and using excavation equipment with enclosed, air-conditioned, HEPA-filtered cabs.
3. Continuously wetting soil when digging or moving earth.
4. Washing equipment before it is moved offsite.
5. Changing clothing and shoes at the worksite before going home.
6. Watching case trends and being aware of areas where valley fever is endemic.

NIOSH recommends that workers wear respiratory protection when digging manually or with heavy equipment, and when working near earth-moving trucks or equipment in endemic areas. Respirators should be NIOSH-certified and used in conjunction with a workplace respiratory protection program. As little as one spore can transmit disease. When potential exposure to dust is unavoidable, employers are advised to assess associated risk and determine the level of respiratory protection needed based on the effectiveness of the various types of respirators for dust particles and spores.

The CDC reports it is developing new tools to make it faster and easier to detect *Coccidioides* in the environment. Whole genome sequencing is being applied to investigate areas where *Coccidioides* is living and causing illness. Meanwhile, the National Institutes of Health is sponsoring a randomized controlled trial to learn more about valley fever treatment.

Additional Resources

California Department of Public Health
NIOSH respirator webpage
Occupational Safety and Health Administration respiratory protection standard 29 CFR 1910.134