More information about the estimated areas with blastomycosis, coccidioidomycosis (Valley fever), and histoplasmosis in the United States

These maps show CDC's current estimates of where the fungi that cause blastomycosis, coccidioidomycosis (Valley fever), and histoplasmosis live in the environment in the United States. These fungi also live in certain areas outside the United States.

The fungi that cause these diseases:

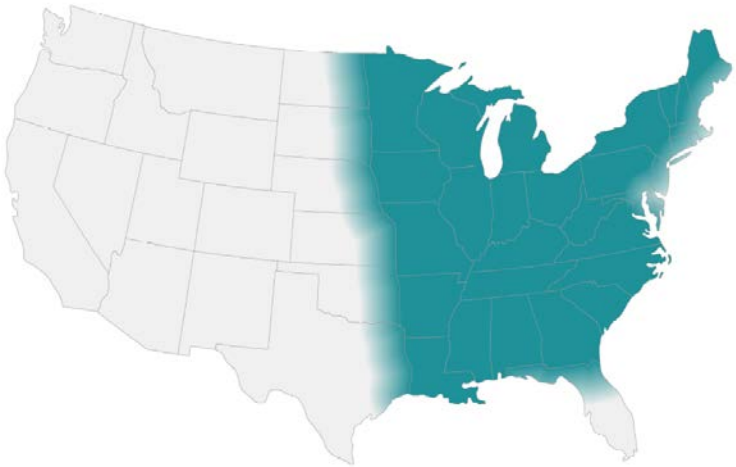
- Are not distributed evenly in the shaded areas.
- Might not be present everywhere in the shaded areas.
- Can also be outside the shaded areas.

The maps are based on:

- Skin testing studies from the 1940s and 1950s
- Public health surveillance data
- Outbreaks and cases outside of the areas identified by skin testing studies and public health surveillance data
- Subject matter expertise

Healthcare providers in all states should be aware that these illnesses can occur anywhere because people travel to places where these fungi live.

Blastomycosis



This map shows CDC's current estimate of where the fungi that cause blastomycosis live in the environment in the United States. These fungi are *Blastomyces dermatitidis* and *Blastomyces gilchristii*.

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Centers for Disease Control and Prevention

Blastomycosis remains poorly understood, and it's important to know the fungi that cause blastomycosis:

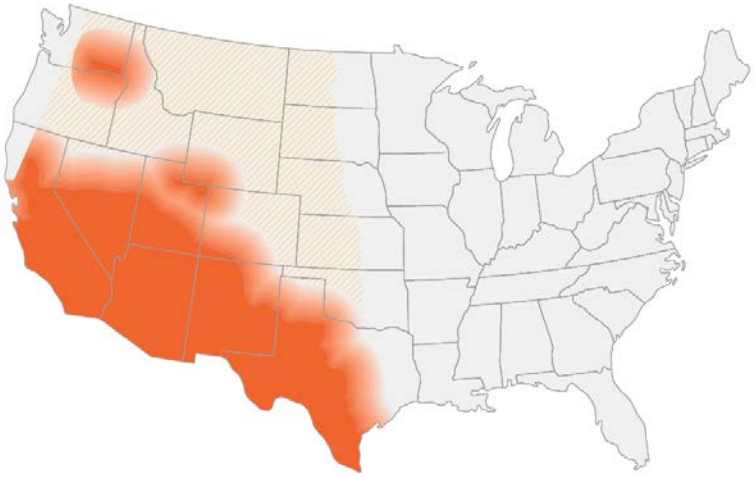
- Are not distributed evenly in the shaded areas. For example, hotspots exist in northern Minnesota and Wisconsin.
- Might not be present everywhere in the shaded areas.
- Can also be outside the shaded areas.

Blastomycosis also occurs in parts of Canada, with hotspots in western Ontario. Scientists have also reported a small number of illnesses caused by a species called *Blastomyces helicus* in the western United States and Canada. These illnesses are usually different from the more common type of blastomycosis in eastern North America.

Darker shading shows areas where *Blastomyces* is more likely to live. This map might change in the future as more data become available. CDC used data from the sources below to create this map.

- Benedict K, Thompson GR, Deresinski S, Chiller T. Mycotic infections acquired outside areas of endemicity, United States. Emerg Infect Dis. 2015 Nov;21(11):1935-41.
- Furcolow ML, Chick EW, Busey JF, Menges RW. Prevalence and incidence studies of human and canine blastomycosis cases in the United States, 1885-1968. Am Rev Respir Dis. 1970 Jul;102(1):60-7.
- Martin DS, Smith DT. Blastomycosis I; a review of the literature. Am Rev Tuberc. 1939;39:275-304.
- McDonald R, Dufort E, Jackson BR, Tobin EH, Newman A, Benedict K, et al. Notes from the Field: blastomycosis cases occurring outside of regions with known endemicity - New York, 2007-2017. MMWR. 2018 Sep 28;67(38):1077-8.

Coccidioidomycosis (Valley fever)



This map shows CDC's current estimate of where the fungi that cause Valley fever live in the environment in the United States. The disease is also common in northern Mexico, including areas along the U.S. border, as well as parts of Central and South America.

The fungi that cause Valley fever are *Coccidioides immitis* and *Coccidioides posadasiii*. In the United States, scientists have found *C. immitis* primarily in California, as well as Washington State. *C. posadasii* is found primarily in Arizona, as well as New Mexico, Nevada, Utah, Texas, and portions of southern California.

Southern California, particularly the southern San Joaquin Valley, and southern Arizona, including metropolitan Phoenix and Tucson, have the highest reported rates of Valley fever. The disease is likely also common in parts of West Texas and along the Rio Grande River. We do not know the exact distribution of Valley fever north of these areas. The fungus is known to live in areas as far north as eastern Washington State and the northeast corner of Utah. Pockets of this fungus likely exist in many western states. The distribution of this fungus might be changing as environmental conditions change.

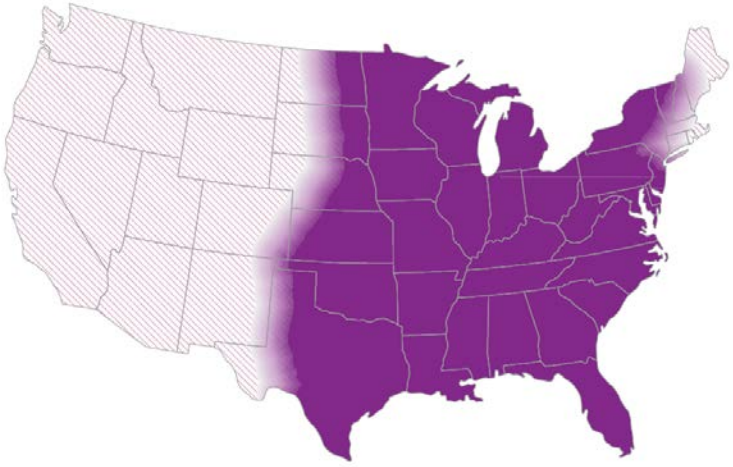
The fungi that cause Valley fever:

- Are not distributed evenly in the shaded areas.
- Might not be present everywhere in the shaded areas.
- Can also be outside the shaded areas.

Darker shading shows areas where *Coccidioides* is more likely to live. Diagonal shading shows the potential range of *Coccidioides*. This map might change in the future as more data become available. CDC used data from the sources below to create this map.

- National Notifiable Diseases Surveillance System (NNDSS) Data and Statistics: https://wwwn.cdc.gov/nndss/data-and-statistics.html
- Benedict K, Thompson GR, Deresinski S, Chiller T. Mycotic infections acquired outside areas of known endemicity, United States. Emerg Infect Dis. 2015 Nov;21(11):1935-41.
- Edwards PQ, Palmer CE. Prevalence of sensitivity to coccidioidin, with special reference to specific and nonspecific reactions to coccidioidin and to histoplasmin. Diseases of the chest. 1957 Jan;31(1):35-60.
- Freedman M, Jackson BR, McCotter O, Benedict K. Coccidioidomycosis outbreaks, United States and worldwide, 1940-2015. Emerg Infect Dis. 2018 Mar;24(3):417-23.
- Marsden-Haug N, Goldoft M, Ralston C, Limaye AP, Chua J, Hill H, et al. Coccidioidomycosis acquired in Washington State. Clin Infect Dis. 2013 Mar;56(6):847-50.
- Oltean HN, Etienne KA, Roe CC, Gade L, McCotter OZ, Engelthaler DM, et al. Utility of whole-genome sequencing to ascertain locally acquired cases of coccidioidomycosis, Washington, USA. Emerg Infect Dis. 2019 Mar;25(3):501-6.

Histoplasmosis



This map shows CDC's current estimate of where the fungus that causes histoplasmosis lives in the environment in the United States. This fungus (*Histoplasma capsulatum*) is more widely distributed than scientists once thought, with cases reported around the world, particularly in humid areas. Histoplasmosis is occasionally

reported in the western United States and is common in parts of eastern Canada. It is likely common in the Caribbean and parts of Central and South America and other continents.

The fungi that cause histoplasmosis:

- Are not distributed evenly in the shaded areas. For example, in the United States, histoplasmosis is probably most common in parts of the Midwest and South-Central United States.
- Might not be present everywhere in the shaded areas.
- Can also be outside the shaded areas.

Darker shading shows areas where *Histoplasma* is more likely to live. Diagonal shading shows the potential range of *Histoplasma*. This map might change in the future as more data become available. CDC used data from the sources below to create this map.

- Armstrong PA, Jackson BR, Haselow D, Fields V, Ireland M, Austin C, et al. Multistate epidemiology of histoplasmosis, United States, 2011-2014. Emerg Infect Dis. 2018 Mar;24(3):425-31.
- Benedict K, Mody RK. Epidemiology of histoplasmosis outbreaks, United States, 1938-2013. Emerg Infect Dis. 2016 Mar;22(3).
- Benedict K, Thompson GR, Deresinski S, Chiller T. Mycotic infections acquired outside areas of known endemicity, United States. Emerg Infect Dis. 2015 Nov;21(11):1935-41.
- Edwards LB, Acquaviva FA, Livesay VT, Cross FW, Palmer CE. An atlas of sensitivity to tuberculin, PPD-B, and histoplasmin in the United States. Am Rev Respir Dis. 1969 Apr;99(4):Suppl:1-132.
- Manos NE, Ferebee SH, Kerschbaum WF. Geographic variation in the prevalence of histoplasmin sensitivity. Diseases of the chest. 1956 Jun;29(6):649-68.