

Histoplasmosis in the United States

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It was not until 1960 when Chester Emmons isolated *Histoplasma capsulatum* in soil in Washington D.C. was the fungus' pervasiveness realized in the United States. The Ohio and Mississippi River basin was identified as one of the foremost breeding grounds for Histoplasmosis. People living near breeding birds and bats were particularly at risk for the infection. *Histoplasma capsulatum* could remain either in a yeast-like or mycelial phase within chicken manure, pigeons, and a slew of other birds. Humans born in these surroundings overwhelmingly tested positive on skin tests, but rarely presented with symptomatic disease. Apparently, they gained immunity after their first infection. People who moved to these areas as adults were more likely the ones who fell ill and even died from histoplasmosis. This explained why Samuel Darling's first patients who died were canal workers who were not natives of Panama.

In 1944, Amos Christie, an American pediatrician from Vanderbilt University, discovered that this presumably rare and usually fatal disease was, in fact, a very common pulmonary disease in the United States often with a benign outcome. After noticing an extraordinary number of children presenting with calcification of the lungs who tested negative for tuberculosis, Christie discovered the culprit to be histoplasmosis. In the 1930s-1950s, new staining techniques including Giemsa stain and Methenamine silver stain made it possible to diagnose thousands of new cases around the world as well as correctly diagnose previous cases that had been incorrectly attributed to malaria, yellow fever or tuberculosis.

In 1956, investigators at the NIH studied the in-vitro and in-vivo efficacy of amphotericin B in experimental histoplasmosis, and showed it to be highly effective for therapy. Later, a formulation of amphotericin B, Fungizone (E. R. Squibb & Sons), proved to very effective against *H. capsulatum* infections in humans.

Histoplasmosis was originally discovered in Panama, then the Philippines, and finally, the United States. Histoplasmosis is now known to be endemic in North and South America with lower prevalence in SE Asia and Africa. Cases occur in Europe but are infrequent. Thus, a major cause of infection in the U.S. was discovered by an American working in Panama.

References

Emmons CW. Histoplasmosis. Public Health Representative, 1957;72(11): 981–988.

Image: Skin reactivity to histoplasmin was assessed among Navy recruits from the continental United States from 1958 through 1969 by Edwards. Light-gray shading indicates the approximate geographic areas with at least 10% prevalence of positive histoplasmin skin test reactivity (induration \geq 4-mm diameter), and dark-gray shading indicates the approximate areas with at least 60% prevalence. Circles indicate the general locations of the 10 cases in the series (Lee JH, 2002).

