

Nasty Microbes in Bat and Bird Droppings

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Have you ever stuck your head in an attic filled with bat guano or bird droppings and wondered if you should have put on your respirator or filtering face-piece? Next time, you should. The guano and droppings may harbor infectious microbes.

Cryptococcus neoformans and *Histoplasma capsulatum* are two fungi that can cause potentially life-threatening infections in humans. While infections from these fungi are uncommon in the general population (which includes healthy home inspectors), various tradespeople and professionals in several fields, including demolition, heating and air-conditioning installation, restoration, home inspection and indoor air quality professionals among others have a higher risk of being exposed. These fungi are often encountered in attics and other dark, enclosed areas where birds and bats tend to roost. In fact, bat and bird feces are two of the more common materials that contain *Cryptococcus* and *Histoplasma*.

Both fungi seem to be more prevalent in the U.S., especially in the Midwest, than in other parts of the world. Exposures most commonly occur in barns, attics and abandoned buildings.

Health Effects

Cryptococcus causes a disease called cryptococcosis, which can manifest in three ways: pulmonary cryptococcosis, cryptococcal meningitis, and cutaneous cryptococcosis. Pulmonary cryptococcosis primarily infects

the lungs, causing symptoms including fatigue, fever, chest pain and dry cough. Cryptococcal meningitis may occur especially in people with weakened immune systems, such as those undergoing chemotherapy or those with HIV infections. Swelling and irritation of the brain and spinal cord can occur, leading to neurological symptoms including blurred or double vision, confusion and headaches. Cryptococcal meningitis may be fatal unless treated promptly and is the most common life-threatening fungal infection among people with AIDS.

Histoplasmosis is the result of infection from *Histoplasma*. Most histoplasmosis infections are asymptomatic, or so mild an infected individual may not seek medical attention. Histoplasmosis usually affects the lungs, and symptoms range widely. Mild, flu-like symptoms and a dry cough, chest pain and shortness of breath may be experienced. If histoplasmosis is not treated, it can begin to resemble tuberculosis and can worsen over months and years and can spread to other organs: a process called dissemination. Disseminated histoplasmosis can be fatal if not treated. As with cryptococcosis, those individuals with compromised immune systems are particularly susceptible to infection.

The descriptions of these diseases are indeed dire, but there is a bright spot: protecting yourself against exposure to these fungi is relatively easy. The usual disposable N-95-rated half-facepiece respirators are adequate

for casual exposure to materials that may contain *Cryptococcus* or *Histoplasma* spores, such as conducting an assessment of the area or other activities that do not disturb a large amount of the material. These respirators and filters are inexpensive and easily found at hardware stores. The National Institute for Occupational Safety recommends using a powered air-purifying full-facepiece respirator for situations where a large amount of avian or bat droppings will be disturbed, such as cleaning out chicken coops.

Addressing the Situation

The finding of appreciable quantities of bat guano or bird droppings in an attic, however, does not indicate a potential exposure to occupants in the residence. Air from the attic rarely migrates into the living spaces. However, the finding of significant amounts of bat guano or bird droppings should be remediated from an attic by a professional remediation company. Removal of the affected insulation and debris from the floor should be requested. Application of an antimicrobial in the attic is likely unnecessary but usually completed.

Suggested Report Wording

Most inspectors likely already have pre-created report verbiage addressing guano and bird droppings. The following is suggested report wording:

"Bat guano or bird droppings were observed in <insert location> in excessive levels. This feces may include the potentially infectious fungi *Cryptococcus* or *Histoplasma*. Contact a pest control expert to determine the entry point for the bats or birds and close the openings. Contact a professional remediation company to remove or clean the affected building materials."

And always remember, although the risk of contracting these diseases is low, when entering spaces affected by guano and bird droppings, do your lungs a favor and wear at least an N-95 filtering facepiece. ■

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