Questions and Answers about Cryptococcal Disease

BC Centre for Disease Control
655 West 12th Avenue
Vancouver, BC
Tel: 604-660-2040
www.bccdc.org

Karen Bartlett, PhD
School of Occupational and Environmental Hygiene
University of British Columbia
kbartlet@interchange.ubc.ca

What is *Cryptococcus*?

Cryptococcus is a microscopic yeast (yeasts belong to same group as fungus, mould, and mushrooms). A variety of this fungus, *Cryptococcus gattii*, has been responsible for causing disease in humans and animals in British Columbia since 1999. *Cryptococcus gattii* has been found living in trees and soil, particularly along the East coast of Vancouver Island.

What is cryptococcal disease?

Cryptococcal disease is a rare but treatable fungal infection that is caused by the yeast *Cryptococcus*. The route of infection is through breathing the microscopic yeast into the lungs. Once in the lungs the organism can cause pneumonia, or form nodules which can be seen in X-rays. More rarely, *Cryptococcus* can also infect the central nervous system causing potentially fatal meningitis (inflammation of the lining of the brain). Other animals are susceptible to cryptococcal disease. In British Columbia, cases of cryptococcosis have been identified in: cats, dogs, ferrets, cockatiels, parrots, llamas, a horse, and dolphins.

How does one "catch" cryptococcosis?

The infection is caused by breathing airborne yeast cells. The yeast has been found in the air around infected trees primarily in the warmer spring to autumn months. You cannot "catch" *Cryptococcus* from another person or animal, nor can an animal catch the disease from a human. Not all people who breathe the airborne yeast become ill. We know that almost a million people annually have been exposed to *Cryptococcus*, but only twenty – thirty per year become seriously ill. In pets, about thirty – forty animals are diagnosed with the disease annually.

Where is the fungus found?

Varieties of Cryptococcus are found in the environment in British Columbia and around the world. Cryptococcus gattii, the cause of recent infections in BC, is new to Canada. This variety has been found in the air, soil, and growing on trees along the east coast of Vancouver Island from Victoria in the south to Courteney/Comox in north-central Vancouver Island, and from Parksville west to Port Alberni. Previous to the discovery of

the organism in BC, Cryptococcus gattii has been found in tropical and semi-tropical parts of the world such as Southern California, Australia, Hawaii, Central and South America.

Can I tell which trees have the fungus?

You cannot tell which trees contain the fungus just by looking at them. *Cryptococcus* does not hurt the tree, and does not form any visible signs or symptoms in the tree host. The fungus can only be identified by laboratory testing.

Should trees in my neighbourhood be tested?

Testing of trees is in certain areas of Vancouver Island is being done to research the distribution of the organism. Airborne cells can be carried by wind currents many kilometers away from the source. Therefore it is not particularly useful to test individual properties or neighbourhoods. *Cryptococcus* could be present in an area even if some trees in the immediate environment test negative.

What does it mean if trees in a community test positive?

Our research has proven that the organism is widely distributed along the east coast of Vancouver Island, and has probably been there long before the first cases of disease were diagnosed. Even in those areas where we know trees and soil are positive for *Cryptococcus*, very few people ever become seriously ill with the cryptococcosis. We do not believe there is any reason to restrict outdoor activities in areas known to be positive since the benefits of outdoor exercise greatly outweigh the risk of contacting the disease.

How do I know if I have the disease?

People are advised to see their doctor if they experience the symptoms of infection. Symptoms can appear 2 to 9 months (or longer) after exposure and include:

- Prolonged cough (lasting weeks or months)
- Sharp chest pain
- Fever
- Unexplained shortness of breath
- Night sweats
- Severe headache
- Unexplained weight loss.

The disease can be diagnosed by a chest X-Ray or an antigen test performed on blood or Cerebral Spinal Fluid (CSF).

The disease is treated by taking antifungal medication prescribed by your doctor.

How do I know if my pet has the disease?

Symptoms in pets can range from runny noses, cough, lumps under the skin, changes in personality, blindness, or seizures. Veterinarians can take samples for culture, histology, or for antigen testing from blood or CSF.

The disease is treated by administering antifungal medication prescribed by your veterinarian.

Is there a vaccine?

There is no vaccine available at the present time.

What are the risks of getting the disease?

The risk of having serious disease is low based on the number of people who have probably been exposed, and the number of cases of disease being diagnosed. In contrast, the risk of being in a serious motor vehicle accident is much higher. Approximately 120 cases have been reported between January 1999 and December 2004.

When should I see a doctor?

Doctors can request tests for patients who show symptoms of infection. Tests are not performed for simple exposure as exposure most often does not result in illness. If you are ill and have symptoms of cryptococcosis, it is important to tell your doctor that you have been to Vancouver Island, as most physicians outside of British Columbia would not be aware that the infection may be caused by *Cryptococcus gattii*. There are a number of antifungal medications that can be used to treat the infection.

Is it safe to travel to Vancouver Island?

The risk of contracting the disease is low and the disease can be successfully be treated with anti-fungal medication. *Cryptococcus gattii* is also found in other travel destinations such as Southern California, Australia, Central and South America.

Are the parks open where the fungus has been found growing on trees?

All areas where the fungus has been found remain open for normal use. Only a very small number of the millions of visitors to parks on Vancouver Island since 1999 have become ill with the infection. None of the people who work in the parks have reported serious illness. There is no reason to restrict outdoor activities in these areas since the benefits of outdoor exercise greatly outweigh the risk of disease.