

# Sooty bark disease in BC: A cause of a rare form of hypersensitivity pneumonitis

**S**ooty bark disease is a rare form of hypersensitivity pneumonitis that is caused by exposure to spores of *Cryptostroma corticale*. *C. corticale* is a fungus endemic to eastern North America but invasive in parts of western and central Europe, where it infects certain broadleaf trees, specifically maples. The fungus colonizes trees via airborne spores and can lead to wasting of the bark in a disease state known as sooty bark disease.<sup>1,2</sup> The descriptor “sooty” refers to the mats of fungal spores that can lead to a blackened appearance and friable texture of infected trees’ bark.

In the summer of 2022, staff from the Canadian Forest Service (part of Natural Resources Canada) and the British Columbia Ministry of Forests, Lands and Natural Resource Operations discovered five cases of sooty bark disease in urban trees in the Victoria and greater Vancouver areas and positively identified *C. corticale*. While known to be present in Washington state since 1969,<sup>3</sup> sooty bark disease had not been previously reported in BC.

## Sooty bark disease

Hypersensitivity pneumonitis is a form of interstitial lung disease, characterized by inflammation and fibrosis of the lung interstitium, driven by an immune response to an inhaled antigen.<sup>4</sup> In sooty bark disease, these antigens are *C. corticale* spores and/or mycelia.<sup>5</sup> Acute symptoms of sooty bark disease, which may appear after hours or days of exposure, include coughing, wheezing, fatigue, diarrhea, nausea, and vomiting.

---

*This article is the opinion of the BC Centre for Disease Control and has not been peer reviewed by the BCMJ Editorial Board.*

Continued exposure to fungal spores can cause immune-mediated lung remodeling with cough, shortness of breath, and systemic signs such as weight loss and fever.<sup>5,6</sup>

Hypersensitivity pneumonitis is rare, with an annual incidence of one to two per 100 000.<sup>4</sup> Sooty bark disease is even more rare—we found five relevant case reports but no descriptions or estimates of incidence.<sup>6–10</sup> All reports involved prolonged proximity to wood or bark contaminated with *C. corticale*. Three described cases in loggers,<sup>6–8</sup> one described a case in a horticulturist,<sup>10</sup> and one described a case in an orchid grower who cultivated over 1000 orchids with bark chips.<sup>9</sup> We did not find documented cases of sooty bark disease due to inhalation of windblown spores or from casual exposure, and we found no description or report of risk to the public.

## Risk of sooty bark disease in BC

At present, with only a small number of cases of sooty bark disease detected in BC, the risk to BC residents is low. However, the prevalence of trees affected by sooty bark disease is likely to increase. Sooty bark disease was detected in Seattle in 2020.<sup>11</sup> It has since been detected multiple times and is an emerging concern for ornamental tree health.<sup>12</sup> This is likely due in part to recent heat and drought affecting the Pacific Northwest. Heat- and drought-stressed trees are more susceptible to *C. corticale*, and warmer and especially drier weather may lead to an increased incidence of sooty bark disease.<sup>5,13</sup>

Over time, if sooty bark disease becomes more prevalent in BC, there may be some risk to occupational groups such as foresters, arborists, and carpenters who work extensively with wood. In addition, infected trees will need to be detected, disposed of, and

diverted from chipping or use as mulch. The risk to the public would likely remain very low except for those who engage in activities that bring them into prolonged and frequent contact with wood or bark.

To manage and understand this risk, the Canadian Forest Service is developing a surveillance program based on a network of provincial, municipal, and private stakeholders to monitor for trees infected with *C. corticale*. They will share results of this surveillance with the BC Centre for Disease Control and WorkSafeBC to disseminate to the public and employers, along with appropriate risk and mitigation information. ■

—Ali Okhowat, MD, MPH, CCFP

**Clinical Instructor and Co-Lead, R3 Enhanced Skills in Global Health Program, Faculty of Medicine, UBC**

—Christopher Carlsen, MD, MPH  
Professor of Medicine, UBC

—Joey Tanney, PhD

**Research Scientist, Pacific Forestry Centre, Canadian Forest Service, Natural Resources Canada**

—Nicolas Feau, PhD

**Research Scientist, Pacific Forestry Centre, Canadian Forest Service, Natural Resources Canada**

—David McVea, MD, PhD

**Public Health Physician, Environmental Health Services, BCCDC**

---

## References

- Schlößer R, Bien S, Langer GJ, Langer EJ. Fungi associated with woody tissues of *Acer pseudo-platanus* in forest stands with different health status concerning sooty bark disease (*Cryptostroma corticale*). *Mycol Prog* 2023;22:13. doi: 10.1007/s11557-022-01861-6.
- Cochard B, Crovadore J, Bovigny PY, et al. First reports of *Cryptostroma corticale* causing sooty bark disease in *Acer* sp. in Canton Geneva,

*Continued on page 34*

# Letters to the editor

We welcome original letters of less than 500 words; we may edit them for clarity and length. Letters may be emailed to [journal@doctorsofbc.ca](mailto:journal@doctorsofbc.ca) or submitted online at [bcmj.org/submit-letter](http://bcmj.org/submit-letter) and must include your city or town of residence, telephone number, and email address. Please disclose any competing interests.

## Specialists filling gaps in care

With the dearth of primary care providers, some specialists are filling the gap somewhat, taking on unrecognized tasks and extra work such as ordering “routine” tests (e.g., bloodwork, appropriate imaging). This unrecognized work, done because it is the right thing to do, not because it is part of specialists’ responsibilities, should be recognized and appropriately compensated. Kudos to these already overburdened practitioners for these extra time-consuming efforts, which are done because it is ethically the right thing to do with our massive gaps in care provision.

—Peter Meyer, MD  
Victoria

Doctors Helping  
Doctors  
24 hrs/day,  
7 days/week

If something is on your mind, give us a call at 1-800-663-6729 or visit [www.physicianhealth.com](http://www.physicianhealth.com).



Physician  
Health Program  
British Columbia

Connecting Physicians to Health



## WORKSAFEBC

Continued from page 32

during the swing phase of gait, making them safe and efficient.

### Considerations for work-related injuries

The goal is to return patients with work-related injuries to as close to their pre-injury condition as possible. To help achieve this, the patient’s WorkSafeBC claim owner may approve and arrange an additional referral to a physiatrist, the WorkSafeBC Visiting Specialist Clinic in Richmond, and/or, in the case of an amputation, the Amputee Multidisciplinary Program at Lifemark Health Centre in Langley. This referral depends on the complexity of the injury and where in the province the patient lives, and it is often made on the recommendation of a prosthetist or physician involved in the patient’s care.

### Reach out to a medical advisor

To speak with a WorkSafeBC medical advisor about a patient with a work-related injury, including one who may require a prosthesis or orthosis, submit a RACE request ([www.raceconnect.ca](http://www.raceconnect.ca)). ■

—David Broman, CPO(c)FCBC  
Prosthetic and Orthotic Consultant,  
WorkSafeBC  
Member, Expert Advisory Committee on  
Prosthetics and Orthotics, PharmaCare,  
Ministry of Health, Province of British  
Columbia  
Chair, Prosthetics and Orthotics  
Program Advisory Committee, British  
Columbia Institute of Technology

## COHP

Continued from page 11

- Graves M, Howse K, Pudwell J, Smith GN. Pregnancy-related cardiovascular risk indicators: Primary care approach to postpartum management and prevention of future disease. *Can Fam Physician* 2019;65:883-889.
- Ray JG. Metabolic syndrome and higher risk of maternal placental syndromes and cardiovascular disease. *Drug Dev Res* 2006;67:607-611. doi: 10.1002/ddr.20134.

## BCCDC

Continued from page 33

- Switzerland. *New Dis Rep* 2015;31:8. doi: 10.5197/j.2044-0588.2015.031.008.
- Goree H. Occurrence of *Cryptostroma corticale* in northwestern United States. *Plant Dis Rep* 1969;53:87.
- Leone PM, Richeldi L. Current diagnosis and management of hypersensitivity pneumonitis. *Tuberc Respir Dis (Seoul)* 2020;83:122-131. doi: 10.4046/trd.2020.0012.
- Kespohl S, Riebesehl J, Grüner J, Raulf M. Impact of climate change on wood and woodworkers—*Cryptostroma corticale* (sooty bark disease): A risk factor for trees and exposed employees. *Front Public Health* 2022;10:973686. doi: 10.3389/fpubh.2022.973686.
- Wenzel FJ, Emanuel DA. The epidemiology of maple bark disease. *Arch Environ Health* 1967;14:385-389. doi: 10.1080/00039896.1967.10664759.
- Emanuel DA, Wenzel FJ, Lawton BR. Pneumonitis due to *Cryptostroma corticale* (maple-bark disease). *N Engl J Med* 1966;274:1413-1418. doi: 10.1056/NEJM196606232742504.
- Towey JW, Sweany HC, Huron WH. Severe bronchial asthma apparently due to fungus spores found in maple bark. *JAMA* 1932;99:453-459. doi: 10.1001/jama.1932.02740580021005.
- Shepherd GM, Michelis MA, Macris NT, Smith JP. Hypersensitivity pneumonitis in an orchid grower associated with sensitivity to the fungus *Cryptostroma corticale*. *Ann Allergy* 1989;62:522-525.
- Plate HP, Schneider R. Ein fall von asthmaartiger allergie, verursacht durch den pilz *Cryptostroma corticale*. *Nachr Dtsch Pflanzenschutzdz* 1965;7:100-101.
- Washington State Department of Natural Resources. Forest health highlights in Washington / 2020. 2021. Accessed 20 December 2024. [www.dnr.wa.gov/publications/rp\\_fh\\_2020\\_forest\\_health\\_highlights.pdf](http://www.dnr.wa.gov/publications/rp_fh_2020_forest_health_highlights.pdf).
- Washington State University. Sooty bark disease. Accessed 20 December 2024. <https://ppo.puyallup.wsu.edu/sbd>.
- Ogris N, Brglez A, Piškur B. Drought stress can induce the pathogenicity of *Cryptostroma corticale*, the causal agent of sooty bark disease of sycamore maple. *Forests* 2021;12:377. doi: 10.3390/f12030377.