

Work-related asthma

Asthma affects about 7.5% of the adult population.^{1,2} Work-related asthma, one of the most common conditions encountered in occupational disease,³⁻⁵ comes in various forms and occurs when workplace exposures cause or aggravate respiratory conditions.

Work-related asthma can be categorized as either occupational asthma or work-aggravated asthma (sometimes referred to as work-exacerbated asthma), and accounts for 5% to 20% of new adult-onset asthma.^{1,3-5} Occupational asthma can be due to sensitization to one or more agents or irritants in the workplace. Asthma related to sensitization to a chemical in the workplace is referred to as sensitizer-induced occupational asthma. Through repeated exposure to potential sensitizers (often for months or years), workers can develop sensitization, and upon re-exposure, may experience asthma symptoms. Workers often report typical symptoms of asthma at the workplace, with improvement away from the workplace.

Exposure to an irritant, in the absence of sensitization, can also induce a form of asthma termed irritant-induced asthma or reactive airways dysfunction syndrome (RADS). The classic criteria for RADS include:

- A history of new-onset asthma.
- Symptom-onset related to a single high-level exposure.
- Onset of symptoms within 24 hours of exposure.
- Exposure to a high concentration of gas, fumes, or a spray-known irritant.
- Airway hyper-responsiveness or reversible airflow obstruction.

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Recovery can be prolonged (more than 3 months) or can lead to persistent asthma.⁵

Work-aggravated asthma is pre-existing asthma aggravated or exacerbated by work exposure to irritants.

More than 300 substances have been identified as being causally associated with asthma, the majority being sensitizers.^{1,2,4} Common sensitizers seen in BC include plicatic acid (Western Red Cedar) seen in sawmill workers and diisocyanates seen in spray painters, chemical manufacturing, foundry, and other industries. For a list of agents associated with occupational asthma by occupation, visit www.csst.qc.ca/en/prevention/reptox/occupational-asthma/Pages/occupational-asthma.aspx.

Diagnosis

Asthma is a heterogeneous clinical syndrome primarily affecting the lower respiratory tract characterized by episodic or persistent symptoms of wheezing, dyspnea, and cough. The diagnosis of asthma requires these symptoms and demonstration of reversible airway obstruction using spirometry and/or methacholine challenge testing. A negative spirometry result does not necessarily exclude the diagnosis of asthma, and if clinical suspicion remains high, either repeat spirometry or methacholine challenge may be indicated.^{1,2}

After a diagnosis of asthma has been made, the next step is to determine if it is work-related. Of note, spirometry testing may be negative away from the workplace/exposure. As a result, peak flow metres or spirometry testing may need to be completed in relation to the workplace to confirm the work relationship. Fur-

ther testing to confirm sensitization may sometimes be required and may be carried out by specialists in occupational medicine. If you would like your patient to be seen by a consultant specialist from WorkSafeBC Occupational Disease Services, please indicate this on your Form 8/11 and an occupational disease medical advisor will be in touch with you.

A claim for asthma requires objective evidence such as that confirmed through pre- and post-bronchodilator spirometry, pulmonary function testing, and/or methacholine challenge testing. In the case of work-aggravated or irritant-induced asthma, with appropriate medical treatment and appropriate mitigation of work triggers, many workers can continue in their job. However, if occupational asthma is strongly suspected, particularly sensitization-related occupational asthma, removal from the workplace is the recommended course of action. If a worker is unable to continue working at their present place of employment due to work-related asthma and the claim is accepted, vocational rehabilitation is the next course of action. While fit-tested respirators may mitigate symptoms from irritants, even exposure to a small dose of a sensitizer, once sensitized, may produce symptoms and respirators may not be of benefit.

For more information or assistance

If you would like to speak with an occupational diseases medical advisor, or you have further questions regarding an asthma claim, please contact a medical advisor in your nearest WorkSafeBC office.

— **Brian E. Ng, MD, MPH, CCFP**
WorkSafeBC Medical Advisor

References on page 40

Continued from page 39

currently is no cure for dementia, we can positively influence the lives of people living with the disease.

—Romayne Gallagher, MD,
CCFP(PC), FCFP

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Continued from page 38

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Tools for tracking down guidelines

Locating clinical practice guidelines can be challenging. Many are simply posted on the Internet rather than being published in scholarly journals; thus, they escape the notice of medical databases such as Medline. Additionally, the US National Guideline Clearinghouse (www.ahrq.gov/gam/updates/index.html) was shut down in 2018 after US federal funding was cut. So what is left? Here are some recommended sources.

CMA CPG Infobase (www.cma.ca/En/Pages/clinical-practice-guidelines.aspx) is a free directory of guidelines from the last 5 years by Canadian health organizations. Given that the small number of Canadian clinical practice guidelines can be hard to find in the larger volume of international content, a Canadian source such as this is crucial.

ECRI Institute. The ECRI Institute is building a free directory of clinical practice guidelines, the ECRI Guidelines Trust (<https://guidelines.ecri.org>). US National Guideline Clearinghouse records were not made available, so the new directory must be built from the ground up. The directory includes summaries and links to full-text documents, and ratings on trustworthiness. Free registration is required.

International Guideline Library. The International Guideline Library (www.g-i-n.net/library/international-guidelines-library) is a public directory from the not-for-profit Guidelines International Network. The linking function requires a membership, but consider using

the site as a search tool and then locate the full-text guidelines using a title search in Google, or ask your library for a copy.

College librarians are available to locate guidelines for registrants of the College of Physicians and Surgeons of British Columbia.

Medline. While incomplete, Medline remains a worthwhile site for locating clinical practice guidelines. Using PubMed.gov (www.ncbi.nlm.nih.gov/pubmed), in the search results, limit the Article Types to “Guideline.”

National Institute for Health and Care. Results from the UK’s National Institute for Health and Care Excellence’s Evidence Search (www.evidence.nhs.uk) can be filtered for guidelines.

Finally, explore the guidelines cited in point-of-care tools such as DynaMed, UpToDate, or BMJ Best Practice, and try using Internet search engines such as Google.

College librarians are available to locate guidelines for registrants of the College of Physicians and Surgeons of British Columbia. You are invited to call the library at 604 733-6671 or email medlib@cpsbc.ca.

—Karen MacDonell
Director, Library Services

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