

Occupational disease: Spotlight on cancer

Exposures in Canadian academic workplaces


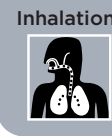

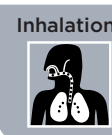

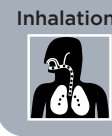
Occupational disease in Canada

Occupational disease is an unfortunate reality in many workplaces, including academia. In this environment workers' health can be affected by a number of different hazards, from poor work design that can cause back pain or repetitive strain injuries, to exposure to substances such as mould that can cause respiratory illness.

The focus of this fact sheet is exposure to hazardous substances known or suspected to cause cancer.

The World Health Organization estimates that up to 19% of all cancers are attributable to the environment, including work settings, resulting in 1.3 million deaths each year worldwide.¹ According to occupational compensation claims, the most common cause of workplace deaths in Canada is mesothelioma, a cancer that is caused almost exclusively by asbestos exposure.²

Figure 1: Important carcinogens that can be found in academic workplaces

Carcinogenic agent	Health effects	Main route of exposure	Main sources of exposure in academic workplaces
<p>Asbestos</p>  <p>Asbestos is a group of naturally occurring fibrous minerals. According to Canadian workplace compensation claims, it is the leading cause of workplace death in Canada.²</p>	<p>Mesothelioma (a cancer of the protective lining of many internal organs)</p> <p>Lung, laryngeal, and ovarian cancer</p> <p>Asbestosis (scarring of the lungs)</p>	<p>Inhalation</p> 	<p>Working in asbestos-containing buildings that are undergoing renovations or have deteriorating asbestos insulation</p>
<p>Radon</p>  <p>Radon is a naturally occurring radioactive gas that is released from the ground and can accumulate indoors (typically in basements). It is the second leading cause of lung cancer in Canada.³</p>	<p>Lung cancer</p>	<p>Inhalation</p> 	<p>Working in areas and rooms with higher concentrations of radon (e.g. basements)</p>
<p>Silica dust</p>  <p>Silica is a naturally occurring mineral found in soil, sand, and rocks. Approximately 380,000 Canadians are exposed to silica at work.⁴</p>	<p>Lung cancer</p> <p>Silicosis scarring of the lungs)</p> <p>Chronic obstructive pulmonary disease (COPD)</p> <p>Rheumatoid arthritis</p> <p>Tuberculosis</p>	<p>Inhalation</p> 	<p>Inhaling dust created during ceramic and sculpture work</p>

Occupational disease in Canada continued...



CAREX Canada is the country's leading source of evidence on Canadians' exposures to substances known or suspected to cause cancer in the workplace. The project shows that in universities and colleges, workers may be exposed to asbestos from older buildings undergoing renovations, formaldehyde or solvents (e.g. chloroform) in research laboratories, radon in basement classrooms, silica from ceramic and sculpture work, and carbon black in printer toners and inks. Other exposures, such as tobacco smoke, can increase a workers risk of developing cancer even further when they're also exposed to substances like radon and asbestos.

Radon, an invisible radioactive gas, is the second leading cause of lung cancer in Canada.³

Understanding and reducing exposure to these and other substances at work is crucial for preventing occupational cancer and other diseases.

CAREX Canada

CAREX (CARcinogen EXposure) Canada is the country's leading source of evidence on Canadians' exposures to workplace and environmental carcinogens. Based at Simon Fraser University in British Columbia, CAREX Canada offers a better understanding of which known and suspected carcinogens Canadians are exposed to and where such exposures may occur.

By offering this knowledge, CAREX helps to inform efforts to reduce exposures to carcinogens and thereby helps to prevent cancer. For example, CAREX Canada resources can be used to determine what exposures a worker might face in a particular job, or to identify populations at risk of exposure to particular carcinogens.

CAREX Canada also offers estimates of the number of Canadians exposed to carcinogens at work. Their eWORK Tool, which is available under the [Tools tab](#) on their website, allows users to explore CAREX exposure data by carcinogen, sector, occupation, province, sex, and exposure level.

The CAREX Canada website also contains detailed information on use, exposure routes, and health effects for a number of occupational carcinogens. A sample of these is summarized in Figure 1.

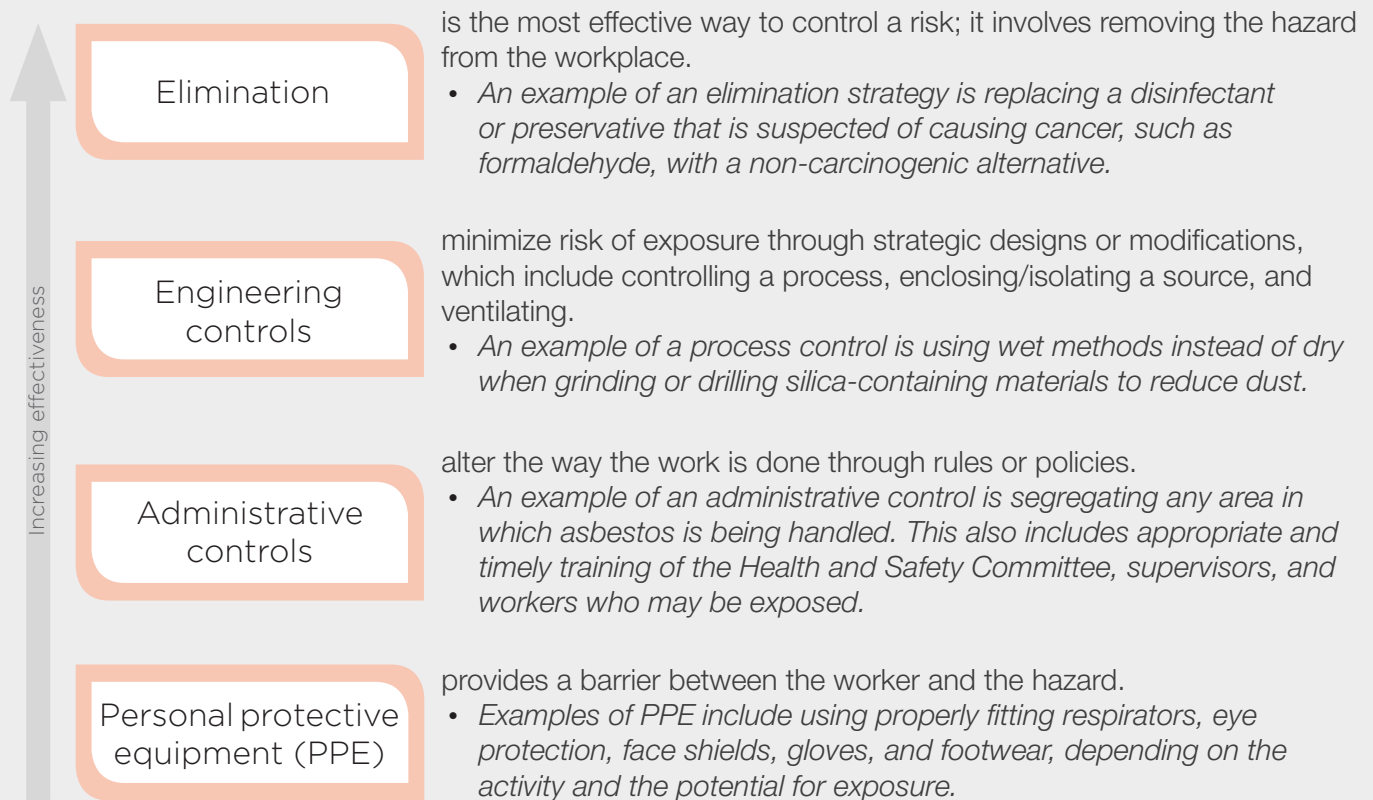



More information, including regulations and guidelines for each agent, methods for calculating exposure level estimates, and a list of references, is available under the Profiles and Estimates tab of the CAREX Canada website.



Preventing exposures

A variety of strategies can help protect workers from exposures to harmful substances such as carcinogens. These strategies are listed below in order of effectiveness in controlling a risk. It is always best to try to control the hazard at the source first.



 A compilation of exposure reduction resources, including the Canadian Partnership Against Cancer's Prevention Policies Directory and the Canadian Cancer Society's Cancer Information portal, is available on CAREX Canada's website. You can also visit the hazard control page on the Canadian Centre for Occupational Health and Safety (CCOHS) for more information on protecting workers.

Where can you learn more?

 Visit our website at www.carexcanada.ca

 Follow us on Twitter @CAREXCanada

 Email us at info@carexcanada.ca

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References

1. World Health Organization. [Environmental and occupational cancers](#). 2011.
2. Del Bianco A, Demers PA. [Trends in compensation for deaths from occupational cancer in Canada: a descriptive study](#). CMAJ. 2013;1(3):E1-E6.
3. Health Canada. [What are the Health Effects of Radon?](#) Last updated September 2012.
4. CAREX Canada. [Occupational Exposure Estimate, Silica \(Crystalline\)](#). 2015.