Occupational disease — a disease or condition arising in and out of the workplace — may often lead to cancer as a result of exposure to hazards such as asbestos, chemicals, and products like silica used in fine arts departments.

This fact sheet highlights the importance of knowing what resources are available for dealing with carcinogens in the workplace. Identifying hazards, accessing training, and knowing reputable resources can help in assessing the workplace, workplace processes, and substances for safety and prevention purposes.

CARcinogen EXposure Canada (CAREX) is a leading resource for CAUT’s academic staff associations and is a valuable source of resource materials for CAUT’s health and safety publications.

CAREX is “a multi-institution research project that combines academic expertise and government resources to generate an evidence-based carcinogen surveillance program for Canada. CAREX is a national surveillance project that estimates the number of Canadians exposed to substances associated with cancer in workplace and community environments. These estimates provide significant support for targeting exposure reduction strategies and cancer prevention programs.”

It is important for academic staff associations and their Joint Health & Safety Committee (JHSC) members to ensure that their employer has solid protocols in place to assess and identify any potentially hazardous substance before it arrives in the workplace, and if it must be in the workplace, that all regulations and safety requirements around its presence and use in the workplace are strictly adhered to.

Eliminating, substituting, and reducing hazardous substances in the workplace must be a priority in order to eliminate exposures that can lead to the development of occupational disease and occupational cancer.

CAREX has developed a short factsheet on occupational disease and cancer, with information about how the two are linked. You can find more information on the CAREX website at www.carexcanada.ca.

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Correctly handling hazardous substances in the workplace must be a priority.

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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. 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.

Occupational disease in Canada

Occupational disease: Spotlight on cancer
Exposures in Canadian academic workplaces

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

<table>
<thead>
<tr>
<th>Carcinogenic agent</th>
<th>Health effects</th>
<th>Main route of exposure</th>
<th>Main sources of exposure in academic workplaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asbestos</td>
<td>Mesothelioma (a cancer of the protective lining of many internal organs)</td>
<td>Inhalation</td>
<td>Working in asbestos-containing buildings that are undergoing renovations or have deteriorating asbestos insulation</td>
</tr>
<tr>
<td></td>
<td>Lung, laryngeal, and ovarian cancer</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Asbestosis (scarring of the lungs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radon</td>
<td>Lung cancer</td>
<td>Inhalation</td>
<td>Working in areas and rooms with higher concentrations of radon (e.g. basements)</td>
</tr>
<tr>
<td>Silica dust</td>
<td>Lung cancer</td>
<td>Inhalation</td>
<td>Inhaling dust created during ceramic and sculpture work</td>
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<tr>
<td></td>
<td>Silicosis scarring of the lungs</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Chronic obstructive pulmonary disease (COPD)</td>
<td></td>
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<tr>
<td></td>
<td>Rheumatoid arthritis</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Tuberculosis</td>
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<td></td>
</tr>
</tbody>
</table>

Silica is a naturally occurring mineral found in soil, sand, and rocks. Approximately 380,000 Canadians are exposed to silica at work.

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.

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.
### CAREX Canada

CAREX (CARcinogen EXposure) 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.*

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

#### Occupational disease in Canada continued...

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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.
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.

**Preventing exposures**

is the most effective way to control a risk; it involves removing the hazard from the workplace.

- An example of an elimination strategy is replacing a disinfectant or preservative that is suspected of causing cancer, such as formaldehyde, with a non-carcinogenic alternative.

minimize risk of exposure through strategic designs or modifications, which include controlling a process, enclosing/isolating a source, and ventilating.

- An example of a process control is using wet methods instead of dry when grinding or drilling silica-containing materials to reduce dust.

alter the way the work is done through rules or policies.

- An example of an administrative control is segregating any area in which asbestos is being handled. This also includes appropriate and timely training of the Health and Safety Committee, supervisors, and workers who may be exposed.

provides a barrier between the worker and the hazard.

- Examples of PPE include using properly fitting respirators, eye protection, face shields, gloves, and footwear, depending on the activity and the potential for exposure.

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](http://www.carexcanada.ca)
- Follow us on Twitter @CAREXCanada
- Email us at info@carexcanada.ca

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References


