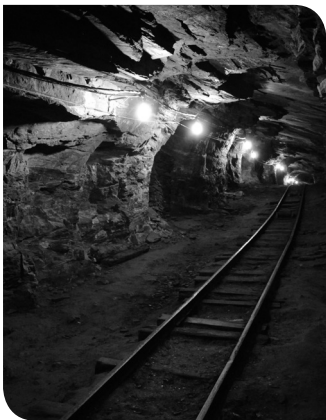




Radon

Burden of Occupational Cancer Fact Sheet in Mining



WHAT IS RADON?

Radon is a **naturally occurring radioactive gas** found in several isotopic forms. It is produced from the natural breakdown of uranium in soils and rocks and is colorless, tasteless, and odourless.

Radon in groundwater, soil, or building materials may enter the home or work environment and then decay, emitting ionizing radiation. Levels of radon in confined spaces or underground are often significantly higher than outdoor air levels.

The International Agency for Research on Cancer classifies radon as a **known carcinogen** (IARC 1).

WHAT ARE ITS HEALTH EFFECTS?

Lung cancer (those who smoke and are exposed to elevated levels of radon have a significantly increased risk of developing lung cancer)

THE BURDEN OF LUNG CANCER FROM WORKPLACE EXPOSURE TO RADON IN CANADA

The term 'burden' refers to the human impact (deaths, illness, years of life lost) and the economic costs (health care, productivity) associated with a cause or group of causes of disease.

20

Lung cancers caused by radon exposure in mining

Results show that approximately 190 lung cancers are attributed to occupational exposure to radon each year in Canada, based on 2011 cancer statistics. Of these, approximately 20 lung cancers are estimated to occur among workers in the mining industry.

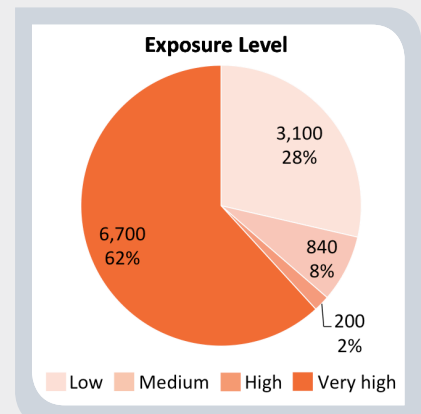
CAREX CANADA ASSESSMENT OF OCCUPATIONAL EXPOSURE TO RADON

Inhalation is the most common route of occupational exposure to radon. Approximately 11,000 Canadians are exposed to radon in mining.

Occupations with the largest number of exposed workers in mining include:

- **Underground production and development miners** (3,700 exposed)
- **Mine labourers** (720 exposed)
- **Heavy-duty equipment mechanics** (630 exposed)

Results show the majority of workers exposed to radon in the mining industry are in the very high exposure level category (see pie chart on right). The workers at risk of highest exposure to radon are those who work in underground mines. To learn more about how these exposure levels are defined, visit the [CAREX Canada website](#).



HOW CAN EXPOSURE BE REDUCED?

Radon-related cancers can be prevented by reducing the number of workers exposed and ensuring that the levels of exposures are as low as reasonably achievable (ALARA). Organizations should evaluate the risk of exposure in the workplace and implement the hierarchy of controls to address the safety needs of workers.

MINING INDUSTRY IN CANADA

In 2006, the mining and oil and gas extraction industry employed approximately 240,000 workers. For the purpose of this fact sheet, the mining industry is defined broadly to include all of underground and surface mining, quarrying, oil and gas extraction, as well as support workers for these activities.

ABOUT THE BURDEN OF OCCUPATIONAL CANCER STUDY

The Burden of Occupational Cancer Study aims to quantify the number of cancers that are caused by exposure to carcinogens in the workplace in order to identify priority areas for prevention. It is a collaboration between researchers at OCRC, CAREX Canada, the Institute for Work & Health, University of British Columbia, Université de Montréal, Institut de recherche Robert-Sauvé en santé et en sécurité du travail, and Imperial College London.



For more information, please visit OCRC at www.occupationalcancer.ca or CAREX Canada at www.carexcanada.ca.

This fact sheet was produced by CAREX Canada in partnership with OCRC. The Burden of Occupational Cancer Study is led by OCRC and is supported by the Canadian Cancer Society. CAREX Canada is hosted at Simon Fraser University and supported by the Canadian Partnership Against Cancer. Acknowledgments for photos: Helen Wilkinson, Woodleywonderworks, Leandro Neumann Ciuffo.

