FACT SHEET

Uranium, radon and worker health

Uranium

Uranium is a naturally occurring radioactive material found in all soil and rock. It is also found in large deposits in various parts of Canada.

The uranium fuel cycle

After the uranium is mined, milling facilities process it to recover uranium concentrate. Processing and fabrication facilities then use the concentrate to create fuel for nuclear power reactors.

Radon

Uranium breaks down naturally through a process called radioactive decay, producing radon gas. Radon gas, which has no taste, colour or smell, also decays into a series of short-lived radioisotopes called radon progeny. Radon progeny emit radiation more quickly and present greater health risks in the lungs than radon itself.

Long-term exposure to radon is the second leading cause of lung cancer in Canada after smoking and the leading cause of lung cancer for non-smokers. This is why radiation protection measures, such as mechanical ventilation in uranium mines, is strictly controlled.

Uranium worker safety

Protecting people and the environment is a top priority for the Canadian Nuclear Safety Commission (CNSC). The uranium industry is highly regulated for health and safety, with the CNSC and other government agencies setting strict rules in all workplaces that deal with uranium. Past health research has found that uranium workers were as healthy as other Canadians. Lung cancer appears to be the only disease related to radiation in which historic uranium workers have had higher mortality and cancer rates.

Health study

The **Canadian Uranium Workers Study** is looking at health data from nearly 80,000 workers from Canadian uranium mines and mills, as well as uranium processing and fabrication facilities. By looking at nearly 70 years of mortality data and 50 years of cancer incidence data, the study will provide further insights into workers' long-term health and the relationship between radon and lung cancer.

The Canadian Uranium Workers Study plan has undergone two independent scientific peer reviews by international researchers, and has been reviewed by the Health Canada and Public Health Agency of Canada's Research Ethics Board and by the University of Saskatchewan's Research Ethics Board to ensure that the study is scientifically and ethically sound and free from conflicts of interest.

Final study results are expected in 2024.

nuclearsafety.gc.ca/uranium-workers-study

Researchers

Dr. Rachel Lane is a radiation and health sciences specialist at the Canadian Nuclear Safety Commission. Along with **Ms. Kristi Randhawa**, a radiation and health sciences officer, Dr. Lane is leading the 4-year study, which explores the impact of radon on human health, especially in low-exposure workplaces.

Dr. Anne Leis, Department Head, and **Dr. Punam Pahwa**, Professor of Biostatistics, with the University of Saskatchewan's Community Health and Epidemiology Faculty, are responsible for administering the collaborative project and conducting the statistical analysis.

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