



Radiation Safety
Institute of Canada
Institut de radioprotection du Canada

Radon Testing in the Workplace

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Guests: Jill Robertson, Dalhousie University, Ali Shoushatarian (The Ottawa Hospital),
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Land Acknowledgement





Webinar Functionality

Audio and video

- During the presentation, from the presenters only
- Captions: More>Language and speech>Turn on live captions

Use the Chat feature to talk to discuss with everyone

Use Q&A feature to ask questions for Q&A portion

Posted on webinar page

- Video, answers to questions, copy of the slides

Follow up email will be sent

- Topics covered, time of attendance



In This Session

Radon

Radon Testing in the Workplace

Panel Discussion

Q&A

Movement break

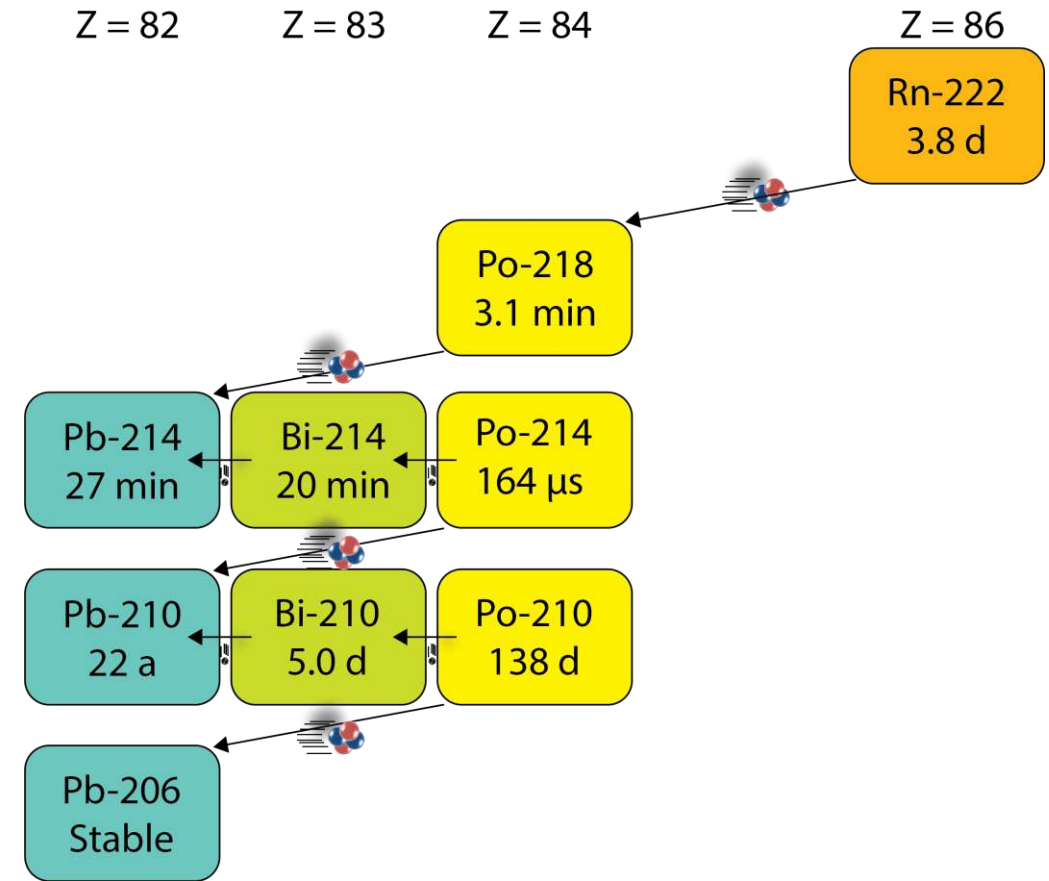
- Charlmane Wong
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- Naturally-occurring radioactive gas
- Decay product in uranium-238 series that emits carcinogenic alpha particles
- Uranium is common on Earth
- Decays into radioactive progeny that also emit alpha
- 2nd leading cause of lung cancer
- Primary cause of lung cancer in non-smokers

Radon





Testing

- We need to test and mitigate if levels are high.
- Radon levels fluctuate, so long term testing is recommended.
- Testing should be done during the heating season.
- Health Canada
- CARST/C-NRPP





Units

Bq/m^3

- Concentration of radioactivity
- How many radioactive decays per second in a cubic meter of air

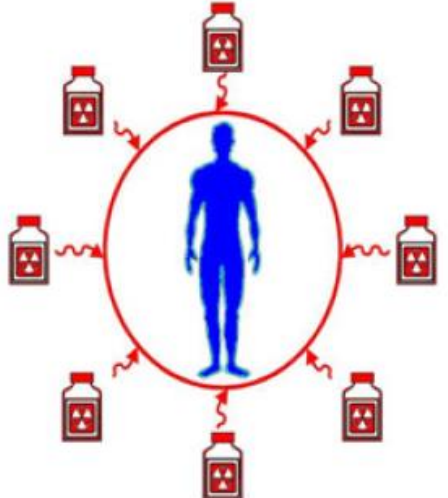
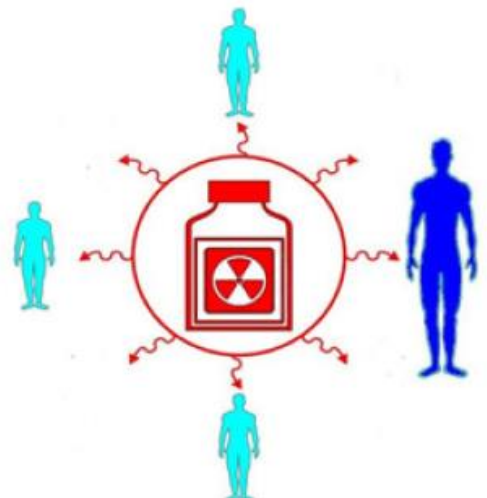
Working Level Month

- Energy concentration x time spent
- $1 \text{ WLM} = 3.5 \text{ mJ h/m}^3$



Reference Levels

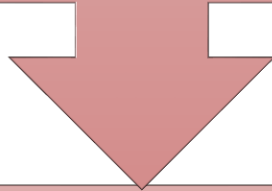
<https://www.icrp.org/publication.asp?id=ICRP%20Publication%20103>

Dose Limits	Constraints and Reference Levels
Protect individual workers from occupational exposure and the Representative Person from public exposure	
	
From all regulated sources in planned exposure situations	From a source in all exposure situations



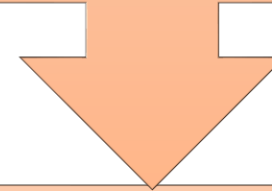
HC Reference Levels

Radon concentration
greater than 600 Bq/m³



Mitigate within 1 year

Radon concentration between
200 Bq/m³ and 600 Bq/m³



Mitigate within 2 years



Workplace Radon

- OHS Legislation
 - Province
 - Territory
 - Canada Labour Code

Canadian Jurisdiction	Occupational Exposure Limits
Federal: Canada Labour Code	For non-nuclear energy workers: 800 Bq/m ³
MB, NL, NS	4 WLM/year; ALARA
NB	Underground miners: 4.8 WLM/year, TWA cannot exceed 0.4 WL; ALARA Other workers: none
ON	4 WLM/year; Workers in mines and mining plants: 1 WLM; ALARA
YT	All workers: AED = 1 WL; ALARA

<https://www.carexcanada.ca/profile/radon/>



[https://cc
Rept-witt](https://cc-rept-witt)



- During the panel discussion, feel free to post questions in the Q&A.

Panel Discussion





Questions?

- First addressing some questions sent during registration that weren't addressed in the presentation
- As time permits, we will address questions posted in the Q&A
- Questions we do not get to
 - Answers will be posted to our website and a link to resources emailed out





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CARST/C-NRPP

<https://carst.ca>

<https://c-nrpp.ca/>



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Thank you for listening!

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Wellness Break

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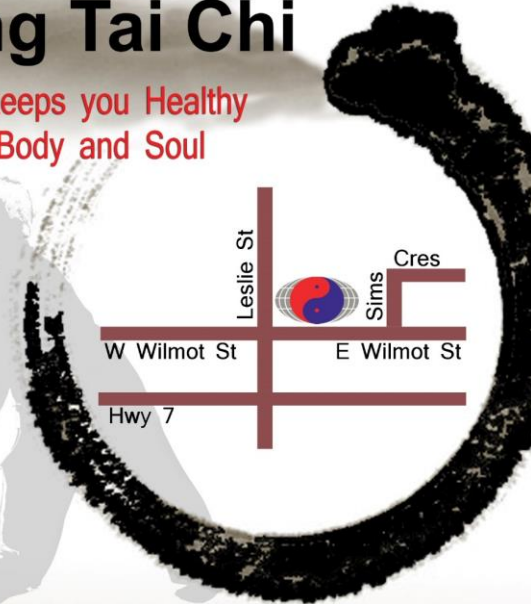
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[Ji Hong Tai Chi & Qi Gong, Richmond Hill, ON](#)



References/Resources

- Radiation Safety Institute of Canada
 - [Radon](#)
 - [Webinars](#) – See November 20, 2023; November 16, 2022; November 20, 2021; April 22, 2021; June 21, 2017
- CARST/C-NRPP
 - [Radon in the Workplace – Are You Protected?](#)
 - Article published in [Canadian Radiation Protection Association Bulletin](#)
 - [C-NRPP Listed Professional Devices](#)
 - [Find a Professional](#)
 - [Find Entry Level Courses](#)



References/Resources

- Government of Canada
 - [Guide for radon measurements in public buildings](#)
 - [Radon Testing in Federal Buildings – Highlights](#)
 - [Radon action guide for provinces and territories: Policies for specific locations](#)
 - [Canadian Guidelines for the Management of Naturally Occurring Radioactive Materials \(NORM\)](#)
 - [Radon Exhalation from Building Materials for Decorative Use](#)
 - [Hazard and Risk – Risk Assessment](#)



References/Resources

- Government of Ontario
 - [Radon in the Workplace](#)
- International Atomic Energy Agency
 - [Protection of Workers Against Exposure Due to Radon](#)
 - [SRS 98: Design and Conduct of Indoor Radon Surveys](#)
 - [SRS 33: Radiation Protection against Radon in Workplaces other than Mines](#)