



100 Radon Test Kit Challenge

We are challenging municipalities across Canada to take part in the 100 Radon Test Kit Challenge. Sign up today to be among of the 20 communities in the 4th year of this challenge.

The **100 Radon Test Kit Challenge** targets municipalities across Canada where radon testing has thus far been limited, but where there is a potential for homes to have elevated radon levels. We have adapted the program to fit COVID guidelines.



With the support of Health Canada, the *Take Action on Radon* program will provide 100 test kits to each participating municipality, to be distributed to citizens for free or for a nominal fee (to be decided by the Community Liaison).

Radon is a colourless, odorless, radioactive gas created by the natural decay of uranium in the soil. A measurable amount of radon is found in every building, but exposure to high amounts over a long period of time presents a risk for lung cancer. In fact, radon is the primary cause of lung cancer in non-smokers. It is important to note, however, that all homes can be tested for radon and radon levels can be reduced if they are found to be high.

We are recruiting community champions to take on this project in their community.

WHY PARTICIPATE?

Reducing lung cancer from radon starts with identifying where the risk is and looking at ways to reduce the risk. By testing homes and reducing radon levels, communities can reduce lung cancer risk not only for current residents, but for future residents as well!

By participating in this program, communities can gather data on what percentage of their homes are above Canada's radon guideline, and how high their radon levels are. This data will provide insight to community decision makers on what policy changes or other support might be helpful to help residents identify and reduce radon levels in their homes.

www.takeactiononradon.ca
1-855-722-6777

There may be policies or programs that municipalities could implement for their residents. Participation in this project will equip municipal decision makers with data to them understand whether changes to the building code may be merited.

WHO CAN BE A COMMUNITY LIAISON?

The community liaison is someone in the community who would like to help lead the 100 Test Kits Program, but who has no commercial interest in radon. This may be a municipal employee, or someone working with a non-corporate entity or a non-profit organization. We have found the project works most effectively both for community engagement and future actions if we work with each municipality in some way.

ROLE OF THE COMMUNITY LIAISON

- Help raise radon awareness in the community by recruiting participants (*Take Action on Radon* will provide support materials for this including a poster and hand-outs).
- Recruit 100 community members to take part in the test kit survey; ideally randomly located around the community.
- Determine a method to distribute 100 test kits to your community participants; including choosing a time, date and location. (we have recommendations for contactless distribution)
- Collect contact information from participants to send reminders about distributing or collecting the test kits.
- Monitor test kit distribution and connect with *Take Action on Radon* if there are tests left over.
- Participants will need to complete some basic information (i.e. the day they start testing) through an online entry form; if needed, help community participants using the online registration forms. This may include providing computer support to those who have difficulties.
- Organize a method to collect the test kits after the radon testing period has completed and ship the test kits to the lab.
 - The detectors will be shipped out to the community liaison for distribution to community members and once the detectors are collected, the cost of shipping the units to the lab for analysis will also be covered, providing they are all shipped at once. If participants miss the deadline for the mass shipment they are responsible to ship to the lab at their own cost (approximately \$2-4).
 - After the detectors are analyzed, each participant will privately receive a report with their own results. The community liaison will receive a summary of the data without specific participant details to ensure privacy of the results are maintained.

IDEAS FOR COMMUNITY ENGAGEMENT/TEST DISTRIBUTION COLLECTION

Although testing for radon is relatively simple, the fact that testing lasts for 91 days, there seems to be an important step to engage participants to follow through on setting up and returning the tests. Therefore, we have found that providing participants with free test kits is more effective when combined with some type of activity that engages them in the benefits of testing and reducing their radon exposure.

This includes attending a radon information session where they learn about why testing and reducing radon exposure is important and have a chance to ask questions about the whole processes. Participating as a community also helps building engagement, homeowners can challenge others on their street or in their workplace to join them in testing.

WHAT SUPPORT IS PROVIDED BY TAKE ACTION ON RADON?

Before the project, *Take Action on Radon* will meet by phone or webmeeting with the Community Liaison (and other community team members, if relevant) to help develop the distribution and collection method for the test kits. We will provide support with developing community engagement techniques and ideas for test distribution and collection methods, answer questions and connect with relevant stakeholders.

During the project, *Take Action on Radon* will supply the test kits with test kit instructions and a sample sign up sheet. We have also set up a website for participants to log their start and end dates as well as complete an online house survey. We will work together with the Community Liaison to follow up with test kit owners to ensure they start the test and complete the survey. We will remind the participants about the upcoming detector collection and let them know how, when and where they can return the detectors. We will send a series of email reminders as the date approaches and follow up with those participants who haven't returned test kits.

After the project, *Take Action on Radon* will provide an initial community survey to summarize the relevant data from the project and work with the Community Liaison to answer questions and identify any other relevant information/data and follow up recommendations.

Take Action on Radon has developed a toolkit to help with rolling out this campaign. The toolkit includes:

- Suggestions for test distribution and drop off
- Sample presentation on radon
- Links to videos that could be used for community engagement
- Sample poster or ads that can be used to advertise the program

- Radon posters and pamphlets,
- *Take Action on Radon* banner,
- Sample letters to send to stakeholders

PROTECTING HOMEOWNER'S PRIVACY

Take Action on Radon takes homeowner privacy seriously. Only individual homeowners will receive their personal radon test results. At the end of the project, *Take Action on Radon* will provide a community report to the Community Liaison with summarized data void of any identifying information.

COMMUNITY REPORT

At the end of the project, *Take Action on Radon* will provide an initial Community Report to the Community Liaison. After this report is provided, if there is any additional information requested by the Community Liaison or any additional items that were identified by *Take Action on Radon* as interesting or important from the data it will be provided to the Community Liaison in a way which summarizes the results of the data in a way that combines results to a minimum of 10 data points.

The initial Community Report will include a summary of:

- Number of Participants
- Number of Completed tests
- Number of homes above guideline
- Average Radon Level
- Comparison of Results with 2011 Health Canada Survey
- List of issues if there are uncompleted tests
- Follow up recommendations

KEEPING SAFE and COMPLIANT WITH COVID RECOMMENDATIONS

With the changes that have occurred within the last year, we have adapted the program to ensure that it fits with the COVID restrictions within your region. We have experience with adapting measures throughout the process. The Community Information session will be held online and recorded to be easily accessed by participants. The test kit distribution and collection can be done using methods which require limited contact.

Overview of the Process

TAOR Team	Community Liaison	100 Test Kits Participants
	Respond to the confirmation email (as detailed above), providing the TAOR team with your community's contact information and availability dates.	
Community Liaison completes the 2021 Preparation form – Jot Form		
Confirm with this year's Community liaisons – Congratulations, you're on the list! We then ship out the awareness material each community has requested.		
TAOR Team calls Community Liaison and reviews Contact Form. TAOR Team prepares materials for the community.		
As the date approaches, we'll send out letters to community stakeholders – the mayor, council, MLAs or MPs just to let them know about the project and ask them to advertise your Public Awareness Night.	Advertise the campaign and create awareness in your community. You may enable a sign-up sheet (online or at a community center) where citizens can sign up in advance.	Sign up to participate in advance (if this feature is available).
TAOR Team		
Ship the detectors.		
	Receive the detectors.	
	Public Awareness Session! Distribute the detectors and maintain a list of each person who receives one, along with their contact information.	Attend the awareness evening and receive their detector(s).
		Go home and deploy the detector and fill out the online survey.
	Once all the detectors have been distributed, send a copy of your complete distribution list to the TAOR Team.	
Add each community's contact list to our database. We use this information to send reminder emails to those who haven't yet deployed their detector or completed the online survey.		

100 day testing period		
Email reminders to all participants that the end of the testing period is coming up (1 week prior, 1 day prior, and the evening before the last collection day)		
	Ensure that everything is in place to collect the detectors.	
		Complete the end survey online.
		Return the detector to the drop off location.

FREQUENTLY ASKED QUESTIONS

What is the relationship between radon and cancer?

- Radon is a colourless, odourless, tasteless, radioactive gas found naturally in the environment. Radon is released into the air during the natural breakdown of uranium in rocks and soil. Radon enters homes and buildings through any place in contact with the soil, such as small cracks in the foundation, construction joints, gaps around service pipes, floor drains and sumps. Radon levels indoors can reach high concentrations, and long-term exposure to these radon levels greatly increases an individual's lifetime risk of developing lung cancer.
- An individual's risk depends both on the radon level and the length of exposure, as well as their smoking habits. Lung cancer can develop after many years of radon exposure. Health Canada estimates that about 16% of lung cancer deaths are related to exposure to radon in the home. Radon exposure is the LEADING CAUSE of lung cancer in non-smokers and it is estimated there are more than 3,200 radon-related lung cancer deaths in Canada each year.

How does radon cause lung cancer?

- As a radioactive gas, radon decays. As it decays, radon produces decay products, sometimes called "radon daughters" or "radon progeny". Radon gas and radon progeny in the air can be breathed into the lungs where they break down further and emit "alpha particles" inside the lungs.
- Alpha particles release small bursts of energy which are then absorbed by nearby lung tissue. This results in lung cell death or damage. When lung cells are damaged, they have the potential to result in cancer when they reproduce (mutation).

How do you test for radon?

- Radon levels can fluctuate through time, so to get an accurate estimate of your annual average it is important to test for a minimum of 91-days during the heating season. Once you receive the test, read the instructions to choose the best location for placing the test in your home, open the package, and set the device in place for 91 days. At the end of the 91-day period, pack the test up and ship it back to the lab for analysis. More information can be found online: <https://takeactiononradon.ca/test/>

What is *Take Action on Radon*?

The Take Action on Radon is a national initiative funded by Health Canada to bring together stakeholders and raise awareness on radon across Canada.

The current advisory team is made up of the Canadian Association of Radon Scientists and Technologists (CARST), CAREX Canada, and the Canadian Cancer Society.

Why is *Take Action on Radon* conducting this testing survey across Canada?

The goal of this survey is to gather more information about radon concentrations throughout the country to increase our knowledge and help us to better understand concentration levels.

How does radon enter a home?

- For most of the year, the air pressure inside your home is lower than the pressure in the soil surrounding your foundation. This difference in pressure can draw soil gases, including radon, into the house. Gas containing radon can enter your home at any opening where the house contacts the soil. These openings can be present even in well-built and new houses. Potential entry routes for radon in homes include small cracks in foundation or air openings around joints, fittings and pipes.

What factors influence high radon levels in a home?

Because there are so many factors, it is not possible to predict the radon level in a home; the only way to know your radon level is to test. All homes have some level of radon. The levels can vary dramatically even between similar homes located next to each other.

The amount of radon in a home will depend on many factors including:

- Soil characteristics: Radon concentrations can vary enormously depending on the uranium content of the soil. The greater the source, the greater the potential that radon could enter a building. In addition, radon flows more easily through some soils than others; for example through sand versus clay.

- Construction type: The type of home and its design affect the amount of contact with the soil and the number and size of entry points for radon.
- Foundation condition: Foundations with numerous cracks and openings have more potential entry points for radon.
- Occupant lifestyle: The use of exhaust fans, windows and fireplaces, for example, influences the pressure difference between the house and the soil. This pressure difference can draw radon indoors and influences the rate of exchange of outdoor and indoor air.
- Weather: Variations in weather (e.g., temperature, wind, barometric pressure, precipitation, etc.) can affect the amount of radon that enters a home.

Is radon a concern outdoors?

- No. Radon is found naturally in the environment when uranium in soil and rock decays. When released from the ground into the outdoor air, radon is diluted and does not pose a significant health risk. However, in enclosed spaces such as homes, radon can sometimes accumulate to high levels and become a health concern.

What is the radon action level?

The **Government of Canada** recommends action when 91-day tests are above 200 Bq/m³

FIX SOON

If your radon levels **200 - 600 Bq/m³**
Reduce your radon within 1 year.

FIX NOW

If your radon levels **600+ Bq/m³**
Reduce your radon within 2 years

How long will it take to get results once the lab receives our batch of kits?

Once the lab has received the batch of kits from the community, they should provide the results within two weeks. They will provide the results to the email that was listed on the when the Start Test information was entered. If no email was provided. They will mail the results to the address listed as the contact address. The length of time to receive the results by mail will vary depending on the mail service but could be 4 week after the tests are received. If you don't receive the results, please contact the Take Action on Radon group and we will investigate the reason for the delay.

What if someone lives outside of the specified communities wants a test kit? Where can they get one?

[Take Action on Radon](http://takeactiononradon.ca) (takeactiononradon.ca) provides more information on where to buy radon test kits

How accurate are the radon tests/monitors?

The detectors that we used for 100 Radon Test Kit Challenge are the most accurate detectors, the process that we have followed has included a quality assurance program to ensure that the individual detectors are also accurate and so we have confidence in the radon levels being reported on the radon test reports which participants are receiving.

I just tested my house for radon this winter and my levels are high, should I retest my house?

Health Canada's recommendation is to test using a long-term alphas track for a minimum of 91-days. If you are using detectors which are listed on the C-NRPP list and the project or radon professional is following proper quality assurance guidance you can have confidence in your radon levels reported on your radon report are accurate. You will want to consider Health Canada's recommendations for reducing radon levels.

What should people do if they have high levels of radon?

- If high levels are found, homes must be mitigated. If your home is found to have high radon levels, your first step should be to consult a local Radon Mitigation Professional who has been certified by the Canadian National Radon Proficiency Program (C-NRPP). Mitigation can involve either limiting entry of radon into the home or expelling radon to the outdoors before it reaches lived-in spaces. The first approach uses passive measures, such as sealing cracks or laying a gravel base and a polyethylene barrier under the foundation. The second, more effective approach uses active measures, such as sub-slab depressurization which employs a fan to draw radon-containing air outdoors from under the home and provide a pathway out of the home. A C-NRPP Radon Mitigation Professional will guide you toward the most effective mitigation approach for your home.

You can find a list of C-NRPP Certified Mitigation Professionals at [C-NRPP Professionals](#)

New Homes in our community already have a radon pipe in the basement. Do they still need to be tested for radon?

They still need to be tested for radon. New homes could have either a radon rough-in stub pipe or a radon rough-in extended pipe. Both of these pipes are intended to make reducing radon easier once the home occupant has tested for radon and determined if radon reduction is required.

The **BC Building Code** requirements for radon vary by year and region. Some homes have a radon stub pipe or an extended pipe that runs through the house. These features are the beginning of a radon mitigation system and can make installation easier. Long-term (91 day) testing is still necessary.

The **Ontario Building Code** requires each municipality to determine if radon is 'constitutes a hazard to their residents' in order to determine if there should be requirements for radon control measures in new construction. The **National Building Code** includes radon control measures.

Is there any financial support for homeowners who need to install a radon mitigation system?

Currently, we only know of two programs that provide some type of assistance however, we will update our website as we learn of others.

In Ontario, Tarion Warranty covers new homes for the first seven years after construction. If homes test above the Health Canada guideline then the warranty program covers the cost of the radon mitigation system if installed by a C-NRPP Professional.

In Manitoba, Manitoba Hydro has a loan program where homeowner's can access their Energy Finance Plan to finance the cost of a radon mitigation system if the system is installed by an approved contractor who must be certified for radon mitigation through C-NRPP and meet their other contractor requirements.

Does radon gas exposure cause health effects other than lung cancer?

No. To date, medical researchers have not conclusively linked radon exposure to health concerns other than lung cancer.

Should I tell my doctor about my radon levels?

Yes, it is important that your doctor knows about exposures that can impact your lung health.

I tested for radon and my results were below the Government of Canada's 200 Bq/m³ guideline, should I test again and if so, when?

If you make substantial changes to your home through renovations or additions or if you undertake energy efficiency changes that significantly seal up your home, you should test again. Otherwise, it is a good idea to test every five years.

What type of information are you collecting from participants of the 100 Radon Test Kits Challenge and how are you using it?

When homeowners are provided with the radon test kits, we collect their contact information (name, email, and phone number), this information will be used to follow up with the participants to remind them to open and place the test, enter the information online and complete the online housing survey. We will also use it to contact them at the end of the test period to remind them that the collection dates are coming up and where they can drop off the detector.

Limited number of detectors are being provided free and so we want to make sure that each detector is being used. We will reach out to contact participants if they haven't recorded their start time to ensure that they are planning on using the radon test. Also, start and end dates are important information for the lab to provide a participant with results. Having contact information connected with a serial number, will allow us to contact participants for information to assist the lab in providing test results.

Who collects the information?

This information will be collected by the individuals and volunteers who are handing out test kits, it will be given to CARST (the Canadian Association of Radon Scientists and Technologists) who is the Lead for the *Take Action on Radon* project.

Where is the information kept/stored?

This information will be stored in paper form in our CARST offices and on computer until we have completed the project for the purposes of ensuring we have all the contact information registered and results provided to participants. The information will be kept until all results have been distributed.

The personal information will be maintained by CARST for the purposes of ensuring the participants has the test results.

When will the records be destroyed?

The records will be kept and stored securely for at least 1 year after the completion of the project to ensure it is available if required to respond to any participant inquiries. After that, it will be destroyed as per our usual schedule of shredding of 2 years after the date of the project.

OTHER RESOURCES:

(Additional material/links can be found at <https://takeactiononradon.ca/join/resources-for-stakeholders/>)

- [Take Action on Radon](#) (infographic)

Health Canada Publications:

Cross Canada Survey of Radon Concentrations in Homes, <http://www.hc-sc.gc.ca/ewh-semt/radiation/radon/survey-sondage-eng.php>

Radon - Another Reason to Quit, http://www.hc-sc.gc.ca/ewh-semt/pubs/radiation/radon_smokers-fumeurs/index-eng.php

Radon - Is it in Your Home?, http://www.hc-sc.gc.ca/ewh-semt/pubs/radiation/radon_brochure/index-eng.php

Radon - What you need to know, <http://www.hc-sc.gc.ca/ewh-semt/pubs/contaminants/radon/index-eng.php>

Radon Reduction Guide for Canadians, http://www.hc-sc.gc.ca/ewh-semt/pubs/radiation/radon_canadians-canadiens/index-eng.php