

Radon and Heat/Energy Recovery Ventilators (HRV/ERV): The impact on radon levels in a home.

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This bulletin aims to address some of the most common homeowner questions regarding HRV/ERVs and radon.

Does your home already have an HRV/ERV?

Heat and energy recovery ventilators are systems designed to improve indoor air quality by bringing fresh outdoor air into a home while exhausting stale indoor air. The design of these units allows for some heat (in the case of an HRV) or heat and humidity (in the case of an ERV) to be exchanged between the outgoing indoor air and incoming fresh air, in order to save energy. Both types of units must be balanced to function properly, which means that the same amount of air is being brought into the home as is being exhausted.

When out of balance, a positive or negative pressure can be created in the home. Both of these situations can have harmful side effects, including forcing warm moist air into the walls of the home and causing moisture damage or mold, or drawing additional radon gas into the home. HRVs and ERVs may be out of balance if they weren't properly installed, if modifications have been made to the ducting or vents, or if the units aren't properly cleaned and maintained. Regular cleaning of the filters is an important part of regular maintenance that is often neglected.

In short, if your home is already equipped with an HRV or ERV, consulting with a qualified professional to ensure the unit is properly balanced is a good first step in addressing your radon levels. In certain cases, cleaning and adjusting the HRV or ERV has been found to lower radon levels. Even if radon levels aren't reduced, you will be assured that the system is functioning as it should.

HRV/ERVs should be cleaned and balanced annually. There are simple videos available online:

Ex: <https://youtu.be/DiaifXPDtaQ?si=9owYj0jwFCfi-KJN> or <https://youtu.be/bZiqvG4SeeE?si=7dlzN0uM9pjeqpZl>

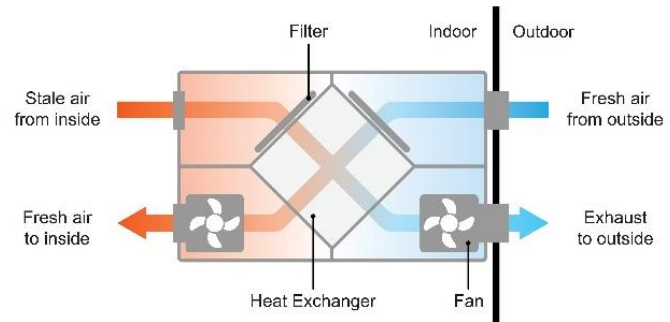
Should we install an HRV/ERV to Reduce Radon?

HRVs and ERVs are not the most effective method of reducing indoor radon levels. The most effective method of reducing radon levels is to have a certified C-NRPP professional install an active soil

C-NRPP certified professionals shall reflect high standards and ethics in their work and comply with recognized standards of practice to protect public health and safety. Our professionals shall communicate clearly and accurately with consumers about their work process and the harmful effects of radon gas.

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

Heat Recovery Ventilator

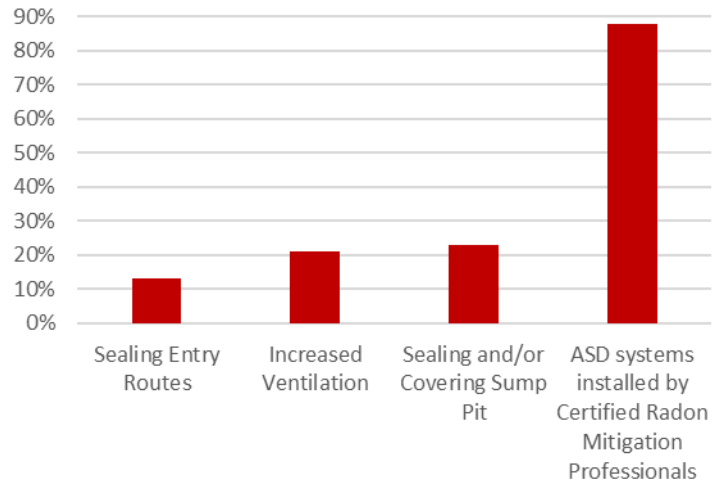


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depressurization (ASD) system; also known as a sub slab depressurization system (SSD). An ASD system removes radon gas before it even enters the home, which drastically reduces indoor radon levels, as seen in the graph to the right.

An ERV or HRV simply dilutes radon levels inside a home, leading to a much more modest reduction in indoor radon levels. However, there are some homes where an HRV/ERV may effectively manage radon levels, or may be used in addition to other mitigation approaches. Generally, HRV/ERVs are installed by professionals who are not certified radon mitigators, so if reducing radon is a homeowner's primary goal, it is important to consult with a trained C-NRPP radon mitigation professional to discuss mitigation options.

Percentage of Radon Reduction Achieved through various methods.



Continual Radon Monitoring and your HRV/ERV

If you are using an HRV or ERV to manage your radon levels, we recommend that you use a digital radon monitor to continually measure your radon levels. If your HRV/ERV starts to become unbalanced, the digital monitor will alert you to increasing radon levels. You can find a list of consumer-grade continual radon monitors reviewed by C-NRPP as part of the Consumer Device report here: www.c-nrpp.ca

Chart based on Health Canada's Follow up Radon Action Survey:
<https://www.canada.ca/en/health-canada/services/publications/health-risks-safety/residential-radon-mitigation-actions-follow-up-study.html>

References:

Find a C-NRPP Professional:

<https://c-nrpp.ca/find-a-professional/>

Consumer-grade continual radon monitors reviewed by C-NRPP:

<https://c-nrpp.ca/wp-content/uploads/2023/10/Digital-Device-Report-Oct-2023.pdf>

List of Radon Test Do-It-Yourself test Providers listed by Take Action on Radon:

<https://takeactiononradon.ca/test-for-radon/radon-test-kits/#buykit>

Health Canada Information on Radon:

<https://www.canada.ca/en/health-canada/services/health-risks-safety/radiation/radon.html>

Health Canada's Information on Energy Efficiency:

<https://www.canada.ca/en/health-canada/services/publications/health-risks-safety/radon-energy-retrofits.html>