DEPARTMENT OF HEALTH

Radon in Family Child Care Operating in Homes

Protect yourself, your family, and the children in your care by testing for radon and reducing levels if it is high.

What is radon?

Radon is a colorless and odorless radioactive gas. It comes from the soil and is naturally occurring. It enters buildings through openings in the foundation (like cracks and exposed soil). Any building can have high radon, regardless of age, construction methods, or soil conditions.

Radon is a health concern because it causes lung cancer. The risk for lung cancer increases with higher levels of radon and longer periods of exposure. Radon is the leading cause of lung cancer for people that never smoked, and it increases the risk in smokers. In the United States, it is estimated that radon causes about 21,000 lung cancer deaths a year. Children may be at increased risk because of their different lung shapes and sizes and faster breathing rates.

The US Environmental Protection Agency (EPA) recommends taking action to reduce radon if the radon level is at or above 4 picocuries per liter (pCi/L). In Minnesota:

- Average indoor levels are about three times greater than the national average
- About 2 in 5 homes that have tested were above the action level
- In a 2014 MDH study, 47% of the 465 family child care that tested were above the action level

How do you test for radon in a home that has child care?

The owner or renter of a residential dwelling can test themselves, if they are the person on the title, deed, or lease. Test at least one room on the lowest level used for child care. You can purchase an approved test kit from many local health departments, hardware stores, and labs. Do not use digital consumer devices that cost around $100-200 since these are not usually approved devices. Licensed radon professionals can also test homes.

There are two types of tests: a short-term test (a few days) and a long-term test (minimum 3 months). When conducting short-term testing, maintain closed house conditions, including keeping exterior windows and doors closed (doors can be opened for normal entry/exit). With long-term testing, closed house conditions do not need to be maintained. Test at least every 5 years, and test sooner, if there are changes that can affect radon exposure or a radon system is installed.

It is best to test on days that the child care is operating with a short-term test (2-5 days). If the result from this initial test is 2.0 to 3.9 pCi/L, consider a follow-up test. Also consider testing in the winter if the initial test was done outside the heating season.

If the initial test is 4 or above pCi/L, conduct a follow-up test as soon as possible (or you could proceed to radon reduction). This follow-up test can be done with a short-term or long-term test (3+ months). If the average of two short tests or the one long test is at or above 4 pCi/L, then you should take action to reduce the radon levels. Alternatively, a professional can do the follow up test, using a continuous radon monitor that tracks hourly levels. This test can determine if elevated levels are present during child care operating hours. If levels are low when children are present, then mitigation may not be needed (but mitigation should still be considered for the occupants living in the home).

How do you reduce radon levels?

If the radon level is at or above 4 pCi/L, hire a licensed radon mitigation professional to reduce the radon level. Radon mitigation in homes typically involves installing a venting pipe and fan to pull air from the soil and vent it outside, which stops radon from entering the building.

The goal of a radon mitigation system is to reduce the indoor radon levels to below the action level of 4.0 pCi/L. Many systems reduce concentrations to below 2.0 pCi/L, so consider mitigation when levels are between 2 and 3.9 pCi/L. After a mitigation system is installed, test within 30 days to verify radon reduction. Retest about every 2 years, or sooner if significant changes occur that could affect radon levels, to verify low radon levels (such as significant renovations; alterations to heating, ventilation, or cooling; or openings to soil).

Resources

- Discounted test kits are available to homeowners and renters through some health departments and from AirChek (mn.radon.com).
- Child care may be eligible for loans and possibly other financial assistance for radon mitigation (https://www.health.state.mn.us/communities/environment/air/radon/financial.html).
- MDH maintains lists of licensed radon professionals (https://www.health.state.mn.us/communities/environment/air/radon/findprof.htm).
- MDH conducts free inspections of recently installed radon mitigation systems.
- MDH offers free family childcare continuing education classes (https://www.health.state.mn.us/communities/environment/air/iaqtraining.html).
- For more information, see MDH radon (https://www.health.state.mn.us/communities/environment/air/radon/index.html).

Questions about the child care regulation modernization projects should be directed MN Department of Human Services (https://mn.gov/dhs/partners-and-providers/licensing/child-care-and-early-education/child-care-regulation-modernization.jsp). Community-based child care programs (aka special family child care) that operate outside of a home should review the fact sheet: ‘Radon in Child Care Centers and Non-Residential Buildings’.

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To obtain this information in a different format, call: 651-201-4933