

Did you know that exposure to elevated levels of radon could be affecting the health of students and school staff in your community?



Radon is the second leading cause of lung cancer and can be found in homes, schools, and buildings across the country. The U.S. Environmental Protection Agency (EPA) recommends that all homes and schools be tested for radon. At least one out of every 15 homes in the United States have an elevated radon level.<sup>1</sup> However, schools are likely to be the second largest source of radon exposure for staff and students since they spend around eight hours inside school buildings five days a week for most of the year.

According to the EPA, a nationwide survey estimates one in five schools has at least one schoolroom with a short-term radon level above the action level of 4 pCi/L (picocuries per liter of air). The EPA estimates that more than 70,000 schoolrooms in use today have high short-term radon levels.<sup>2</sup>

The good news is that there are ways to reduce the risk of radon exposure among staff and students through radon testing and mitigation. Several states have implemented a protocol for radon testing in schools with remarkable success. School officials can easily test buildings for radon or have them professionally tested. If buildings test high for radon, school officials can reduce radon levels by having a mitigation system installed. There are resources that may be available through the American Rescue Plan and other federal funding to help with testing and mitigation costs.

## Why Schools Should be Concerned About Radon

According to the Environmental Law Institute, over fifty-five million children and six million adults across the U.S. spend their days in K-12 schools. To give children the best chance for educational success, these school facilities need to be free of environmental problems that impact health and impede learning. Poor environmental conditions can prevent academic progress by making it harder for students to concentrate, causing or exacerbating illness in students and staff, increasing absences and lost workdays, and diverting school funds to pay for costly repair and remediation projects. Attention to environmental quality is important not only for promoting wellness and advancing the core educational mission, but also for preserving the financial health of school systems.<sup>7</sup> It's crucial to remember when addressing environmental conditions in schools to not forget about the potential impact of elevated radon levels.



Over **55 million** children and **6 million** adults across the U.S. spend their days in K-12 schools.

Radon health risks in schools can be significantly reduced. Schools can take action today to implement a program to test schools for radon and install radon mitigation systems if needed.

This document provides the following information to help address radon risk reduction in schools:

- Facts about radon
- Program implementation strategies
- Examples of state laws and policies for testing requirements in schools
- Additional resources

## Facts About Radon



**Radon is an odorless, tasteless, colorless naturally occurring radioactive gas emitted from the ground.**

### What Radon Is

Radon is a naturally occurring radioactive gas released in rock, soil, and water from the natural decay of uranium. It moves up through the ground to the air above and can enter a building or home through cracks in walls, basement floors, foundations, and other openings. You cannot see, taste or smell radon, but exposure to radon can increase a person's risk of developing lung cancer.

### Health Effects of Radon

The EPA ranks indoor radon among the most serious environmental health problems facing us today. The EPA estimates that around 21,000 people die from radon-induced lung cancer each year in the U.S.<sup>2</sup>

Lung cancer is the only confirmed health effect of radon. There are no immediate symptoms from radon, but long-term exposure can eventually lead to lung cancer. Overtime, radon breaks down into radioactive particles known as radon decay products. These decay products can become trapped in the lungs when inhaled and damage lung tissue by emitting radiation. While radon is proven to cause cancer, not everyone exposed to elevated radon levels will develop lung cancer. According to the Centers for Disease Control and Prevention (CDC), people who smoke tobacco and live in homes with high radon levels have a risk of lung cancer that is ten times higher than people who do not smoke and live in homes with high radon levels.<sup>6</sup>

There is no medical test for radon exposure. The only way to find out an individual's radon exposure is to test the inside of buildings like homes and schools, where most of the time is spent.

### How Radon is Measured

Radon is measured by picocuries per liter of air (pCi/L), a measurement of radioactivity. Since radon occurs naturally, a person can never completely get away from it. According to the EPA, radon levels average about 1.3 pCi/L inside and 0.4 pCi/L outside homes and buildings across the country.<sup>4</sup>

Radon can occur at elevated levels in any type of building, whether it is new or old, well-insulated or drafty, or with or without a basement. The only way to know the radon levels in a building is to test.

Testing for radon is easy, quick, and affordable. In many states, school officials can obtain radon testing devices that staff are then trained to use. Some states require that testing be done by licensed radon professionals. School officials can contact state radon programs to find out about any licensure or other requirements, how-to purchase radon test kits as well as better understand any state-specific requirements and how to find a list of licensed or certified testing professionals.

## What To Do If a Building Tests High for Radon

Reducing radon exposure is the first step to reducing health risks. If schools receive test results that are 4.0 pCi/L or higher, the EPA recommends fixing the building through radon mitigation. A radon mitigation system is designed to reduce radon concentrations in the indoor air of a building. The kind of radon mitigation system that is most effective varies depending on the construction and building conditions. Some techniques will prevent radon from entering a building, while others reduce radon levels already in the building. A mitigation system should be installed by a certified or licensed radon mitigation contractor. The cost to install a mitigation system varies. There may be funds available to help schools with testing and mitigation costs from the federal COVID-relief aid allotted to states for spending on schools.

## Program Implementation Strategies

There are many resources available to help schools create policies and protocols for radon testing. The EPA offers a comprehensive section on their website called [Creating Healthy Indoor Air Quality in Schools](#), which includes step-by-step actions and strategies that schools can take to create effective indoor air quality management programs. Additionally, this resource offers detailed guidance on radon testing, results interpretation, and mitigation in schools.

There are six key drivers for success that are outlined in this resource which include the following<sup>5</sup>:



1. **Organize** for success.
2. **Communicate** with everyone, all the time.
3. **Assess** your environments continuously.
4. **Plan** your short- and long-term activities.
5. **Act** to address structural, institutional, and behavioral issues.
6. **Evaluate** your results for continuous improvement.

Review this section of the EPA's website [Managing Radon in Schools](#) to see how the above key drivers can specifically apply to creating radon testing in schools protocols.

## State Laws And Policies For Testing Requirements In Schools

A number of states have created laws and regulations that address radon in schools. Most of them require schools to conduct radon testing or mitigation or to incorporate radon-resistant new construction (RRNC) techniques. Others only encourage or facilitate such actions. The Environmental Law Institute synopsised these laws in the [2023 Radon in Schools Overview of State Laws](#).

Here are two examples of states that have implemented successful radon testing protocols in schools.

- **Minnesota** – Under Minnesota Statute 123B.571, school districts that receive health and safety revenue to conduct radon testing must conduct the testing according to the state's 'Radon Testing Plan'. View the Minnesota Department of Health [website](#) to review their complete testing plan, guidance for schools and reporting form.

- **Oregon** - Under ORS 332.341 and 332.345, school districts were required to submit a testing plan for schools to the Oregon Health Authority by September 1, 2016. Testing was then required to be complete by January 1, 2021. View the Oregon Health Authority [website](#) to view the protocol and plan that they created along with resources and communication toolkits.

## Resources

The American Rescue Plan and other federal dollars may be available to help schools and school districts plan and implement indoor air quality improvements, including radon testing and mitigation if needed.

Between the COVID Relief & Omnibus Spending Bill passed in December 2020 and the American Rescue Plan passed on March 11, 2021, the Federal government has approved \$176 billion in emergency COVID-19 relief aid for K-12 schools. Facility-related expenditures are among the allowable uses for these funds and are an excellent opportunity to invest in the indoor air quality in schools without impacting school operating budgets.<sup>8</sup> Improved ventilation is recognized to help both in preventing SARS-CoV-2 transmission and in reducing radon exposure. Because indoor radon levels can be affected by changes in ventilation and air movement, it is important to include radon testing and mitigation in any plans for facility upgrades.

The American Lung Association's [Indoor Air Quality in Schools Guide](#) outlines the potential opportunities through the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) and steps for how to apply for funding.

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*This project has been funded wholly or in part by the United States Environmental Protection Agency under assistance agreement 84021001 to the American Lung Association. The contents of this document do not necessarily reflect the views and policies of the Environmental Protection Agency.*