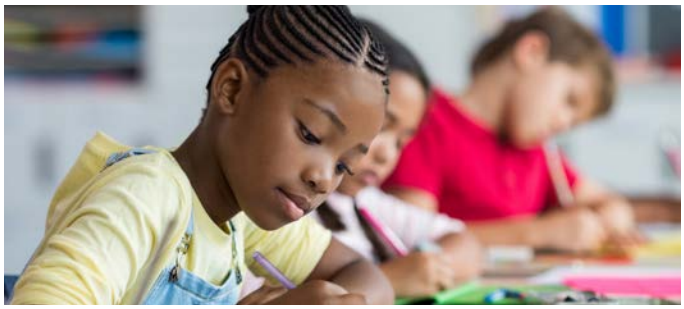
American Lung Association.



Indoor Air Quality in Schools
Impact on Learning

We all want children and teachers to be safe and healthy at school. Some dangers—such as poor air quality—are not always obvious. Poor indoor air quality in schools can negatively affect how children learn and harm their growing lungs.

What is indoor air quality?

Indoor air quality (IAQ) refers to the quality and cleanliness of the air in and around buildings. Components such as temperature, humidity, ventilation, pollutants, occupancy and building materials contribute to IAQ. When you breathe in through your nose or mouth, air travels down your airways and into your lungs. Not all the air we breathe in is clean. It can be filled with many pollutants, such as gases and particles, much of which is too small to see. When these pollutants travel through your lungs to the rest of your body, they can harm your health. That is why ensuring clean indoor air is important.

How does IAQ impact learning?

One of out of six people in the U.S. work in or attend a school, so it is important that the IAQ allows for safe and healthy learning environment. Levels of pollutants are two to five times higher indoors than outdoors, yet most of us spend up to 90% of our time indoors.

Poor IAQ in schools is linked to a variety of harmful outcomes, including:

- Student drowsiness, headaches, concentration problems and decreased academic performance;
- Increased student and staff absences due to respiratory infections, allergic responses or adverse reactions to chemicals used in schools;
- Reduced staff performance due to discomfort, sickness or absences;
- Increased asthma symptoms; and
- Greater risk of developing or worsening lung disease as they age.

Asthma is one of the leading causes of school absenteeism causing an estimated 13.8 million lost school days in children ages 5-17. Children with asthma are especially vulnerable to poor air quality and environmental asthma triggers found in many school buildings.

Improving IAQ has been shown to:

Improve student performance including addition skills, number comparison, reading and comprehension and test scores.

Reduce absenteeism among students and staff.

Who is most susceptible to the effects of poor IAQ?

Everyone can be impacted, but children, older adults, and people with underlying conditions or existing lung disease are most at risk of negative health effects. The swelling (inflammation) triggered by breathing in pollutants puts additional stress on people's lungs, heart and other organs.

Children face heightened risk from poor IAQ due to:

- Smaller and developing airways
- Breathing more rapidly
- Inhaling more air relative to their size than adults
- Having more respiratory infections than adults, which increases their susceptibility

How can schools address IAQ?

Addressing IAQ issues in schools can make a big difference in the health and success of students. Making even minor changes may positively influence focus and learning. Schools can help protect their students, teachers and staff by implementing policies, programs and practices that promote good indoor air quality. Clean indoor air helps create a healthy learning environment and results in better learning outcomes.

Learn more about school IAQ and energy efficiency at Lung.org/CASC.

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