Levels of air pollution are five times more likely to have impaired lung function by age 18. Poor air quality has also been shown to increase absenteeism and is linked to lower scores on standardized tests as well as lower academic performance.

A variety of health problems can be caused by air pollution, especially by the smallest pollutants known as ultrafine particles. Ultrafine particles are contained in diesel soot and other components of combustion exhausts and are harmful to anyone, especially children. One leading study found that children exposed to high diesel exhaust and other components of combustion exhausts and are harmful to anyone, especially children. Clean air is an essential ingredient for healthy lungs and normal lung development. This is especially true for children whose lungs are still developing and vulnerable to pollution.
Problem

School-age children typically spend more than 30% of their day in classrooms. This means that airborne particulates and other airborne pollutants in classrooms have a significant effect on their health and academic success. In the past, the most common approach to improving indoor air quality in classrooms focused on the installation of panel filters in the school's HVAC system. Unfortunately, these are typically MERV 7 filters that are not effective against fine and ultrafine particles contained in diesel soot and other combustion pollutants. Alternatively, in-classroom filtration systems are often noisy and not effective.

Solution

A study published in the peer-reviewed journal INDOOR AIR investigated the effectiveness of various air purifications systems in reducing the exposure of children to air contaminants inside classrooms. The researchers set up air-quality monitoring equipment in three Southern California schools. Precise scientific measurements allowed them to compare conventional classroom filtration techniques (such as MERV 7 filters) to advanced air filtration technologies developed by IQAir as well as other companies.

Results

The study found that IQAir HVAC-based and stand-alone classroom air filtration systems outperformed all of the other technologies in the study. IQAir panel-filtration technologies reduced airborne concentration of ultrafine particles and black carbon by almost 90%.

IQAir stand-alone air cleaning systems in the study – specifically, the IQAir Cleanzone SL system – reduced indoor particle concentrations by as much as 94%. In addition, only IQAir was able to meet the strict noise-level requirements established in the study.

"The installation of highly effective air filtration devices in schools may be an important mitigation measure to minimize exposure of children to indoor pollutants of outdoor origin, especially at schools located near heavily trafficked freeways, refineries, and other important sources of air toxics."


For more information, visit www.iqair.com/commercial, or contact an IQAir Commercial Solutions Specialist at 866-500-4090.