Healthy Classroom Air, Healthy Students

Keeping Students with Asthma Safe and Healthy:
A Toolkit for Families and Educators

nea NATIONAL EDUCATION ASSOCIATION

Acknowledgments

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Toolkit Overview and How to Use it

Poor school air quality negatively impacts students and educators and is especially harmful to those with lung diseases, like asthma. This toolkit provides information and resources that you can use to improve school air quality and keep students with asthma healthy. It was written with families, students, and educators in mind; particularly, those who care about protecting students from poor school air quality.

Recommendations include increasing building ventilation, implementing classroom air quality monitors, using portable HEPA air cleaners, hiring full-time school nurses, and stocking quick-relief asthma medications in every school.

This toolkit provides multiple strategies and resources to choose from based on capacity, recognizing that not everyone is able to participate in time-consuming advocacy efforts. You can choose to take action at the school, district, or state level and select from resources including a simple checklist that you can fill in and use to start a conversation with a school principal, an infographic that you can share with a classroom teacher, a sample school board resolution and talking points you may use to collaborate with a policymaker, or model state legislation you can share with your state representative.

This toolkit is designed as a supplement to the many already-existing resources, such as the **Environmental Protection Agency's (EPA) Tools for Schools** and the **EPA Managing Asthma in the School Environment**, that recommend simple and low-cost practices, like removing asthma triggers from classrooms and developing asthma management plans. By integrating the tools and strategies found in this toolkit, we aim to provide a comprehensive guide that empowers all interest holders to take actionable steps toward improving school air quality.

Background and Issue

Asthma impacts 6.5 percent of children and adolescents under the age of 18 nationwide—or approximately 1 in 12.[1] Rates are worse for Black children and adolescents, impacting 11.6 percent of the population, almost double the national rate. Asthma is a chronic disease of the lungs that causes repeated episodes of wheezing, breathlessness, chest tightness, and coughing.[2] Management includes avoiding asthma triggers and taking medicine. Despite available treatments and community education on environmental triggers, students continue to experience asthma attacks and need emergency care.

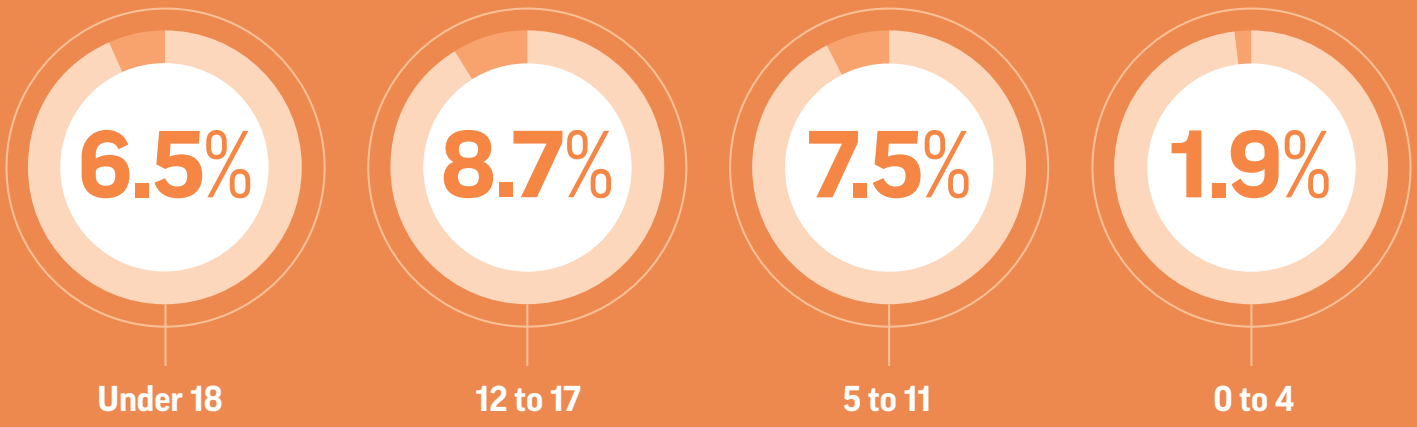
The Centers for Disease Control and Prevention (CDC) report that asthma attacks and emergency-urgent care visits were most prevalent for children ages 0 to 4, with almost 35 percent needing to visit an emergency department or urgent care facility in the last 12 months. Without proper management, asthma attacks can lead to school absences, increased medical costs, and premature death.

Asthma is the leading cause of school absenteeism.[5] In 2013, 49 percent of students ages 5 to 17 missed one or more school days due to their asthma.[6] Children and adolescents with asthma are more likely to visit the emergency department and be hospitalized in comparison to those without asthma.[5,7] Absences due to asthma place students at risk for lower academic performance and bear financial costs to families. One study estimated that annual health care costs range from $3,076 to $13,612 per child and adolescent.[8] Further, although rare, mortality was highest among Black children and adolescents, with approximately 7.7 Black children and adolescents per million in comparison to 1 per million for White children and adolescents.[9]

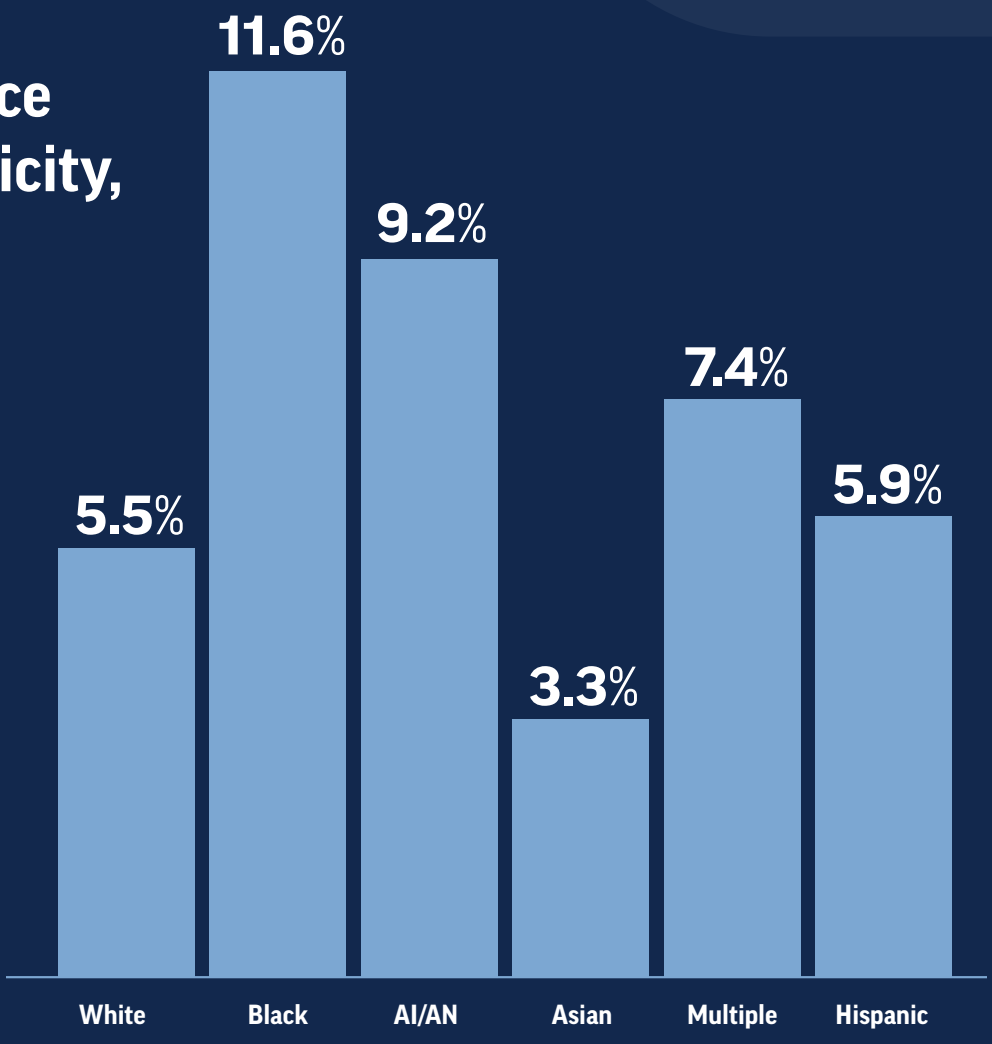
Common Asthma Triggers [3,4]

- Viral infections, such as the common cold
- Air pollutants and irritants, such as smoke, fumes from cleaning products, and perfume
- Weather changes or cold air
- Allergens, such as pollen, mold, pet dander, cockroaches, and dust mites

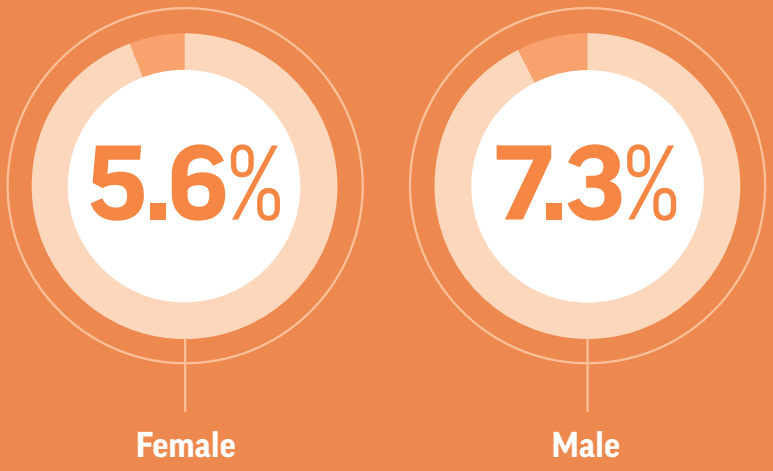
Asthma Prevalence by Age[9]



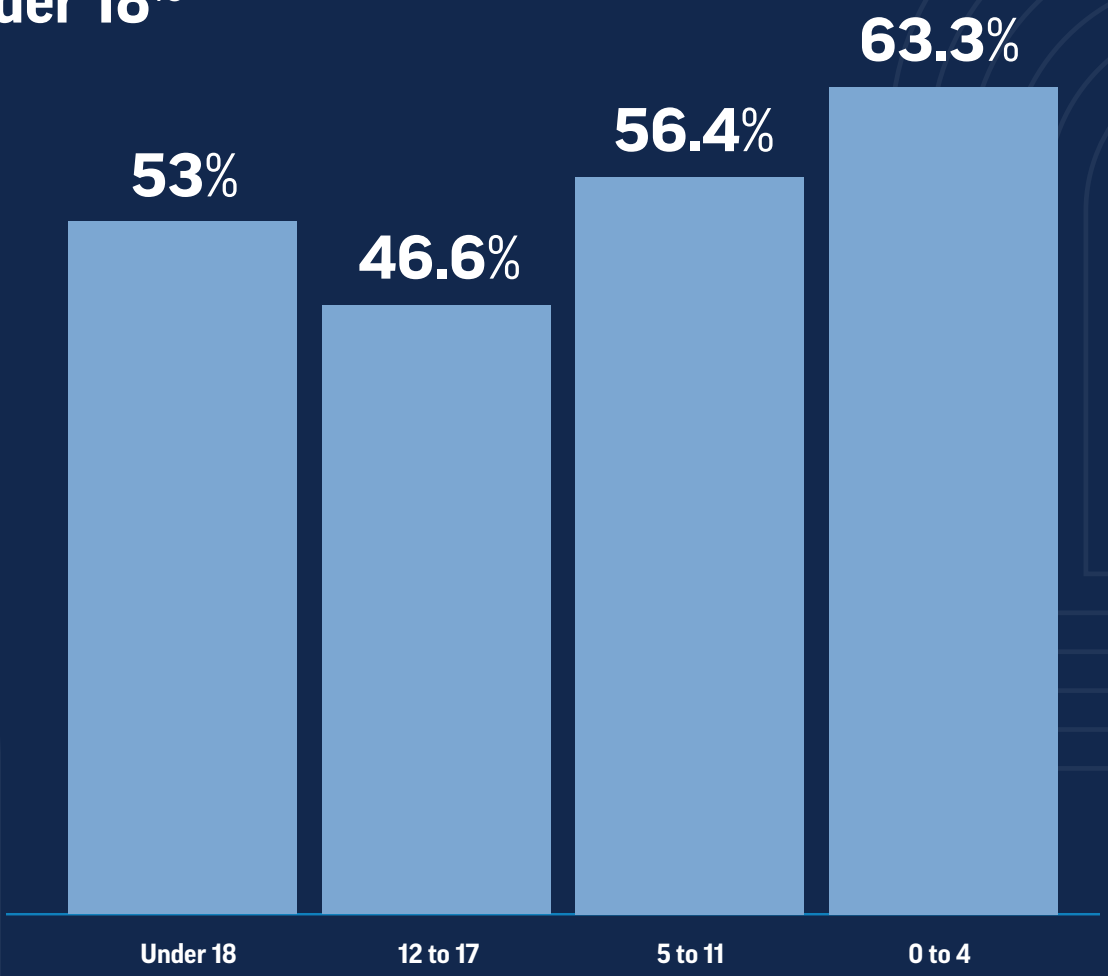
Asthma Prevalence by Race and Ethnicity, Under 18[9]



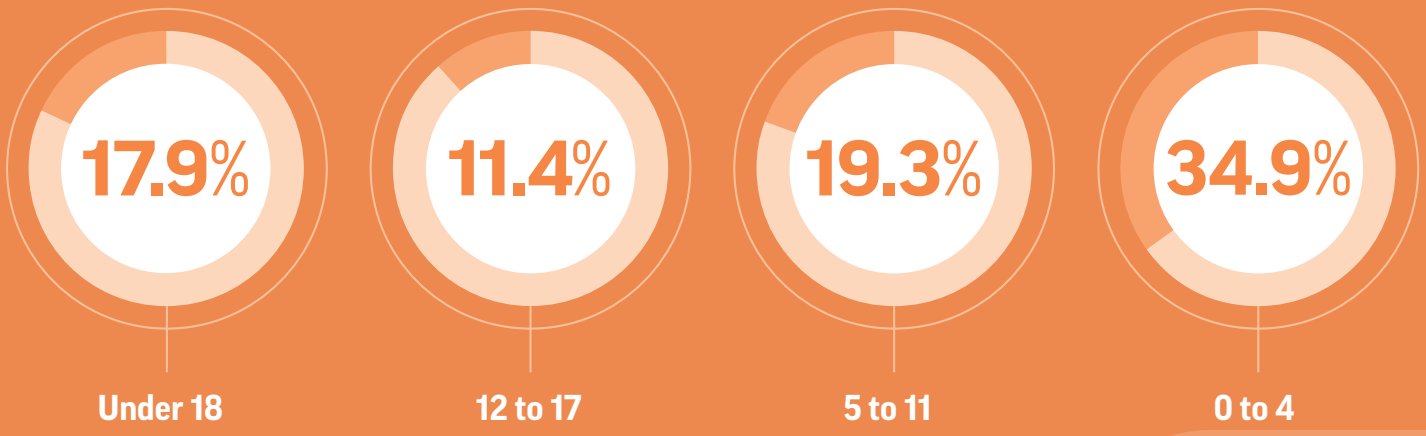
Asthma Prevalence by Sex, Under 18[9]



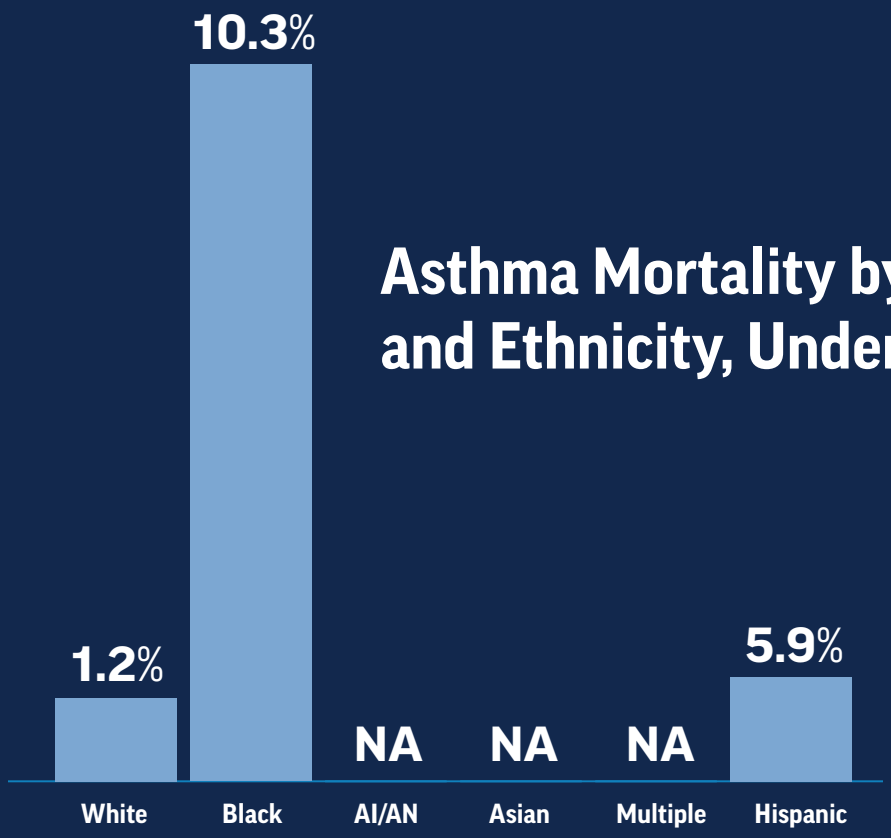
Asthma Attack Prevalence in the Last 12 Months, Under 18[10]



Emergency Department/Urgent Care Visit Prevalence in the Last 12 Months[10]



Asthma Mortality by Race and Ethnicity, Under 18[10]



We can reduce absences and costs to students and families. Asthma events can be avoided or controlled with the right resources in place, but the time to act is now. The changing climate will bring children into contact with increasing air pollutants. For example, the U.S. Environmental Protection Agency expects smog and pollen to worsen and estimates that longer wildfire seasons and larger wildfires will become more frequent, exposing children to more smoke.[11,12] We can ensure students are safe in their classrooms by changing the status quo.

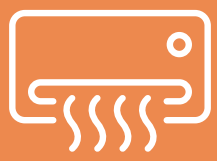
Current School Practices and Their Impact

School air quality impacts student health and learning outcomes and exacerbates asthma when conditions are poor. In 2020, the GAO found that 41 percent of districts have reported needing to update or replace the HVAC systems in half of their schools.[13] HVAC systems are designed to keep air healthy and comfortable for students and educators. Sufficient ventilation and filtration are essential to lowering the concentration of contaminants in classroom air.

Aging and poorly maintained school buildings place students at risk for asthma attacks and respiratory illness. Studies conducted by the EPA found that indoor levels of air pollutants may be two to five times–"and occasionally more than 100 times"–higher than outdoor levels.[14] Common pollutants include volatile organic compounds (VOCs) and particulate matter (PM).[15] High levels of VOCs and PM may cause allergies and respiratory illness, raise risks for asthma, and exacerbate asthma.[15,16] PM can be especially problematic in schools located in metropolitan areas and near highways. Studies find that student exposure to pollutants, such as soot, was higher at schools located near a highway or freeway.[17,18] Additional studies found that molds and animal allergens–including mouse, cat, and dog allergens–were often higher in schools than homes.[19,20]

What Is ASHRAE?

The American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) is a professional organization and a trusted leader in the field of heating, ventilation, cooling, and indoor air quality. The standards they set are the basis for most building codes.[22]



Essentially, schools are not meeting healthy ventilation levels and placing students at risk for asthma attacks and respiratory problems. In fact, several studies found that most schools did not meet the current minimum ventilation rates set by the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE).[21]

How Do Ventilation and Filtration Work?

Effective ventilation not only dilutes indoor pollutants but also enhances the performance of filtration systems by ensuring that indoor air is consistently circulated through filters at their designed rates, improving removal of pollutants and maintaining healthier air quality.

Strong evidence links poor ventilation to increased asthma symptoms and absences due to respiratory infections, yet there is little federal and state regulation of school building ventilation.[27,28] A review of state policies found that most states lack clear ventilation and filtration requirements and wide variation in district practices.[29] Recent data on district spending plans has been encouraging and showed that more than 70 percent of districts planned facility upgrades, which accounted for more than 17 percent of federal pandemic relief funds for education.[30]

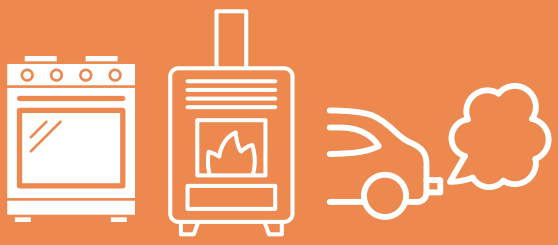
Although districts have committed to HVAC upgrades, a survey of 88 districts found that only 40 percent planned to monitor classroom air quality with CO2 monitors.[31] Healthy indoor air requires both proper facilities management and monitoring, such as timely HVAC maintenance and repair and classroom sensors.

What Are VOCs?

Volatile organic compound (VOC) sources may emit from cleaning products and adhesives, glues, and paints from school furniture and carpets.[15]

What Is PM?

Particulate matter (PM) is microscopic solids or liquid droplets found in the air, such as dust, pollen, mold, combustion particles from heaters and gas stoves, automobile exhaust, and metals.[15,23]



What Is CO2?

Carbon dioxide (CO2) is a colorless, odorless, naturally occurring gas that is produced by several sources, such as when individuals exhale and from the burning of fossil fuels.[24]

CO2 is often used as an indicator for ventilation. Leading agencies, including the EPA and CDC, state that CO2 levels above 1,000 parts per million (ppm) are an indicator of under-ventilation.[25] The CDC recently updated its guidance to include that a CO2 level above 800 ppm is an indication that you may need to bring in more fresh, outdoor air into the space.[26] Sufficient ventilation is key to providing healthy, clean indoor air.

Recommendations

Several federal agencies, including the EPA and CDC, have released guidance and toolkits, which may include highly technical specifications and maintenance protocols, on how schools can best improve ventilation and filtration in classrooms. Much like schools are provided technical regulations and guidance on academic performance and required to translate such requirements into an easy-to-understand format and make public how they plan to fulfill academic goals, so too must schools make data on student health and safety accessible and public.

Classroom indoor air quality (IAQ) sensors and a publicly available monitoring system—in an easy-to-understand format—empower educators, students, and families with the information they need to hold schools accountable and keep themselves and their students safe and healthy. Indoor air quality constantly changes and an assessment conducted over a set period provides only an average and does nothing to ensure clean classroom air quality in the future, nor alerts occupants and families to current dangers. Families need data in real time. However, equally critical is access to historical trend data, which provides the necessary context for interpreting real-time readings, identifying persistent patterns, and ensuring accountability over time. Together, real-time and historical data make IAQ monitoring both actionable in the moment and meaningful for long-term health and safety. Real-time sensor data enable classroom occupants and facility crews to address a situation as it occurs; either by increasing outdoor air through the HVAC system, opening windows, turning on fans, or adjusting portable HEPA air cleaners.

What Do Classroom Air Quality Sensors Monitor?

- Carbon dioxide
- Carbon monoxide
- Particulate matter
- Volatile organic compounds
- Temperature
- Humidity

Real-time data in conjunction with ventilation and filtration strategies allows for timely response and remediation. Filtration and ventilation strategies are school-based strategies that reduce exposure to asthma triggers and help prevent attacks. Listed below are strategies you may be able to observe in a school. The best practice is to implement multiple filtration and ventilation strategies simultaneously. For example, portable HEPA air cleaners are a great supplement to HVAC systems and have been shown to reduce particulate matter by 80 percent or more within 30 minutes.[34,35]

What Is Carbon Monoxide?

Carbon monoxide (CO) is a colorless, odorless gas. At low concentrations, CO can cause fatigue in healthy individuals and chest pain in individuals with heart disease. At higher concentrations, it can cause headaches, dizziness, weakness, upset stomach, nausea, and confusion. CO can be deadly.

Sources of CO include automobile exhaust, gas stoves, gasoline-powered equipment, fireplaces, and tobacco smoke.

Filtration

Difficult-to-Observe Strategies	Somewhat Observable or Somewhat Easy-to-Find Strategies	Easily Observed Strategies
HVAC systems are fitted with MERV 13 filters to increase filter efficiency.[36]	Upper-room ultraviolet germicidal irradiation (UVGI) is used to clean the air. UVGI uses UV light technology to inactivate airborne germs. Viruses and bacteria can spread through the air via particles (aerosols and droplets), which are a form of particulate matter. If improved ventilation and filtration are not possible, schools should consider UV technology.[37]	Portable HEPA air cleaners are placed in every classroom. Portable HEPA air cleaners should especially be considered in schools without mechanical ventilation or when HVAC systems cannot support high-efficiency filters (such as MERV 13).[37]

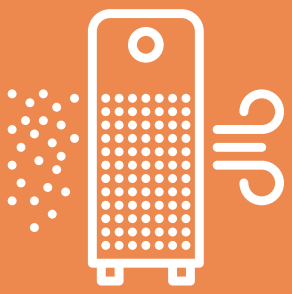
Ventilation

Difficult-to-Observe Strategies	Somewhat Observable or Somewhat Easy-to-Find Strategies	Easily Observed Strategies
HVAC systems bring in outdoor air and run during all occupied hours; fans are in the ON position.[38]	Records of HVAC testing and evaluations are made available to educators and families.	Windows are opened or window fans are used to increase ventilation (weather and outdoor air quality permitting).

Additional strategies include those that are applied in response to an asthma attack, such as a full-time nurse or a trained member of school personnel who can administer stock Albuterol (often called "quick-relief medication") to students. Data from the National Teacher and Principal Survey (NTPS) and the Schools and Staffing Surveys (SASS) reveal that 52 percent of schools had a full-time nurse in the 2015–2016 school year, and earlier studies show that as few as 14 percent of students with persistent asthma keep or take rescue medicines to school.[40-42] Not only can the presence of medicines and a school nurse or trained staff member save a student's life but a nurse can also address poor adherence to recommended treatment regimens and help students control their asthma with Corticosteroids (often called "controller medications").

What Are Portable HEPA Air Cleaners?[39]

HEPA is short for high efficiency particulate air. HEPA filters are pleated mechanical air filters that are extremely efficient at removing particulate matter, such as dust, pollen, mold, bacteria, and viruses from the air.



HEPA filters have a higher minimum efficiency reporting value (MERV) than those recommended for school HVAC systems. It is recommended that HVAC systems be fitted with MERV 13 filters. HEPA filters are equivalent to a MERV 17 or higher and capture particles with greater efficiency.

Portable HEPA air cleaners are stand-alone units that can be used in addition to other strategies. Costs can vary. Portable HEPA air cleaners can also be constructed using filters and a box fan, such as the **Corsi-Rosenthal box**.

Did You Know?

Fifty-five percent of children with asthma are prescribed controller medicines, but only 30 percent use them regularly as prescribed.[1]

Absent children were more likely to have asthma that was either not well-controlled or poorly controlled and visit an emergency department or urgent care center for their asthma.[43]

Only 18 states have laws or guidelines that allow schools to stock quick-relief medicines.[44]

Families, educators, and students will have varying priorities and time constraints. You should focus on strategies you know you can implement, whether it be portable HEPA air cleaners, classroom sensors, or stock Albuterol. For example, some parent-teacher organizations have successfully advocated for portable HEPA air cleaners in every classroom and organized "build days" to construct do-it-yourself filters, such as a **Corsi-Rosenthal box**, for every classroom.

The remaining sections of this toolkit provide tools you can use with little time commitment to mitigate asthma triggers in schools and effectively manage school asthma incidents, aiming to decrease the need for emergency services referrals.

School Checklist and Infographic

The **school checklist** was compiled and adapted from multiple sources, including the EPA and CDC. As you walk through your school, use the checklist, marking off the policies and practices that you know are in place. If you are uncertain about any of the policies and practices in the checklist, use it as an opportunity to speak to a classroom teacher or school principal.

The checklist is also a great conversation starter with other school families who also may be concerned about classroom learning conditions. If you need additional ideas on what you can say to another caregiver, educator, or principal, see the Talking Points section.

The **infographic** provides a basic overview of what is occurring in the school environment and how it impacts students with asthma. It aims to raise awareness about the challenges faced by students with asthma and suggests preventive strategies and interventions for schools to implement.

The infographic may be paired with other resources, such as the checklist or talking points, to help make your case for the strategies that are needed in schools. The infographic may also be modified and used as a flyer.

Here are some conversations starters and suggestions:

- "Good morning/afternoon, [TEACHER OR PRINCIPAL NAME]. I was filling out this checklist focused on student health and safety, and I'm not sure if the school has a tobacco-free campus policy. If it exists, can you please share the policy with me? I also would like to talk to you for a few minutes about some of the other items on this list."
- "Good morning/afternoon, [TEACHER OR PRINCIPAL NAME]. I was filling out this checklist focused on student health and safety, and I had a few questions. Would it be possible to walk through the school and visit with the school nurse? I would like to discuss some of the checklist items and steps our family takes at home to keep [STUDENT NAME] safe from asthma triggers. I would be happy to share what works for us at home and how we can ensure [STUDENT NAME] stays safe and healthy at school."

Keeping Students with Asthma Safe and Healthy: School Checklist[1]

SCHOOL POLICIES

- ☐ An indoor air quality management plan
- ☐ Tobacco-free school policy
- ☐ A "no idling" policy
- ☐ A fragrance-free policy
- ☐ Self-carry/self-administer asthma medication policy or a medication storage policy, which enables students to store their asthma medication at school
- ☐ Written asthma action plan for each student with asthma

SCHOOL PRACTICES

- ☐ Provides asthma education to all school personnel
- ☐ Makes a nurse or designated and trained staff member available to administer asthma medications
- ☐ Stocks school with Albuterol, Epinephrine, a peak flow meter, and a holding chamber in case a student is without quick-relief medicine
- ☐ Use integrated pest management to control pests and reduce exposure to allergens
- ☐ Uses formaldehyde-free, low-emitting and low-toxicity chemicals, paints, and materials throughout the school
- ☐ Uses chemicals only with adequate ventilation and when school is unoccupied
- ☐ Uses only unscented, **EPA-approved for school use cleaners** or **Green Seal products**
- ☐ Places "Walk off" mats at every entrance to the school building
- ☐ Addresses mold and moisture in a timely manner
- ☐ Ensures all outdoor air intakes are unobstructed and away from sources of pollution (e.g., dumpsters, idling cars)
- ☐ Monitors classroom air quality with sensors in every classroom and makes data available to families in real time
- ☐ Improves ventilation by bringing in outdoor air either through the HVAC system, opened windows, or window fans (if weather and outdoor air quality permit)
- ☐ Has portable air cleaners with HEPA filters in every classroom to help with filtering out pollutants
- ☐ Monitors the local Air Quality Index to reduce exposure to pollutants
- ☐ Conducts building facility tours and workshops for families on classroom air quality
- ☐ Assesses every classroom and school facility for asthma triggers at start of each school year and revisits midyear

[1]The checklist was compiled and adapted from the following sources: The American Lung Association, The Asthma-Friendly Schools Initiative Toolkit; CDC, Strategies for Addressing Asthma in Schools; CDC, Strategies for Addressing Asthma within a Coordinated School Health Program; EPA, Clean Air in Buildings Challenge; EPA, Proven Strategies to Improve Indoor Air Quality in Schools; EPA, Managing Asthma in the School Environment; EPA, Indoor Air Quality Tools for Schools Action Kit

Keeping Students with Asthma Safe and Healthy

Not all schools have a school nurse or a designated staff member who may administer medication. It's also possible that a student does not have back-up medication at their school and the school does not stock any quick-relief medications. The student may need to be referred to emergency services.

The student is referred to emergency services. The student must miss a day or a few days of school. Absenteeism may cause school performance to suffer.

Students with asthma are either allowed to self-administer their quick-relief medication or go to the nurse or trained school staff member.

Students exposed to poor classroom air quality are at risk of respiratory illness. Poor air quality may exacerbate asthma symptoms and cause students to miss school, which may result in poor academic performance.

Schools can implement preventative measures—such as maintaining HVAC systems to ensure sufficient ventilation and filtration, using portable classroom HEPA filters, and installing classroom air quality sensors—to keep students safe.

Once a student begins to show symptoms of an asthma attack, a school may also implement other measures, such as permitting the student, a nurse, or a trained staff member to administer quick-relief medication, to prevent further harm to the student.

For more information, see the Healthy Classroom Air, Healthy Students toolkit.

Students with asthma are exposed to classroom pollutants, which may exacerbate their symptoms.

What are the effects of this problem?

What are the root causes of this problem?

Most schools do not provide sufficient ventilation and filtration to classrooms. Common classroom pollutants—including volatile organic compounds, carbon dioxide, and particulate matter—are harmful to student health, especially to students with asthma.

The lack of federal and state guidance on classroom air quality negatively impacts student health and academic performance.

Talking Points

Advocacy is most successful when you share your story. Do you have a child with asthma? Share what it's like caring for them and the concerns you have when they enter a school that has potentially more allergens and pollutants than your own home. Share why you believe the issue is urgent. Consider highlighting lost instructional time and visits to an emergency room. Share your hopes and ask questions like: Do you have a no-idling policy? How often do you check for and remove asthma triggers? Do you have classroom sensors? Do you have portable HEPA air cleaners? Do you stock Albuterol?

Your story is the most powerful tool you have.

Use the following talking points to supplement your story. Use them when you need to and modify them as you see fit.

- **Every student deserves to learn in a clean, safe environment.** By assessing schools for asthma triggers, equipping them with functioning HVAC systems, air quality sensors, and portable HEPA air cleaners, we improve indoor air quality (IAQ) and ensure schools are sanctuaries of health and learning.
- **In facing extreme weather or environmental hazards, our schools can be bastions of safety with proper ventilation and filtration.** This approach not only shields our students from harmful indoor and outdoor pollutants, like wildfire smoke, but also serves as a testament to our commitment to student well-being. It's about ensuring that our actions today protect and preserve the health of our future leaders.
- **No student should have their education interrupted by preventable health issues.** Asthma attacks are not just medical issues; they are education barriers that can and should be prevented. With prompt attention to removing asthma triggers and providing sufficient ventilation, filtration, and trained personnel ready with quick-relief medication, we can turn potential emergencies into manageable incidents that keep our students in the classroom, not the emergency room.
- **Secure the economic health of families and schools, avoid urgent care and emergency room visits, and keep our students in class.** Every dollar spent on emergency health care for asthma due to poor air quality is a lost investment in our children's futures. It's about more than saving money; it's about valuing education and health equally. Absences due to visits to an urgent care or emergency department result in unexpected medical bills and lost wages for families and lost federal funding for schools.
- **We can all agree that keeping students in classrooms where they are learning is a top priority.** COVID-19 caused an unprecedented disruption to our children's education. As we move forward, we must ensure the quality of the air in our schools to prevent further loss of instructional time. It's not just about returning to 'normal'; it's about building a resilient education system that withstands future challenges. Too many students lost the opportunity to learn due to the COVID-19 pandemic. We can prevent unnecessary absences and keep students focused on learning with adequate classroom air quality monitoring and management.
- **Districts like Boston Public Schools have taken important steps to meet the challenge by installing sensors, making data available in real-time, and managing air quality more actively.** While no system is perfect, Boston's example is a call to action.

School Board Resolution

You can use the sample school board resolution to continue a conversation with your school board representative.

If you decide to testify at your school board meeting, be sure to type your testimony in advance so that you also may submit it for the record. School boards often will provide a link for you to upload your testimony.

On the day of the meeting, try your best to speak from your heart and not your notes. Words are most powerful when you can speak directly to the board. Again, your most powerful tool is your story. You also should be prepared to answer any follow-up questions they may have.

Your testimony should include the following:

- What the problem is, and be specific;
- Why this problem should be addressed right away;
- The values you share with the board (for example, healthy students, attendance, academic performance);
- The three key messages you want to convey; and
- The result you hope for.

After the meeting, touch base with your representative and propose a time to meet and discuss next steps. You can share the sample school board resolution at this time.

Sample Resolution on School Air Quality and Effective Asthma Management

WHEREAS, the [DISTRICT NAME] (hereinafter "District") is committed to providing a safe, inclusive, and healthy learning environment for all students, recognizing that such an environment is fundamental to student well-being and lifelong learning; and

WHEREAS, asthma affects approximately 1 in 12 children and adolescents nationwide, disproportionately impacting Black children and adolescents and contributing to significant education disparities through increased absenteeism; and

WHEREAS, federal agencies expect an increase in air pollutants—such as smog, pollen, and smoke—potentially increasing students' risk for respiratory distress; and

WHEREAS, current practices in managing school air quality and asthma do not adequately address the needs of students, potentially leading to preventable asthma attacks and related health emergencies; and

WHEREAS, the District acknowledges the importance of healthy air and effective asthma management in schools as critical to the health, safety, and academic success of students, especially those with asthma; and

WHEREAS, recommendations including the implementation of indoor air quality management plans, the use of portable HEPA air cleaners, the availability of quick-relief asthma medications, and the employment of full-time school nurses have been identified as effective strategies to support students with asthma; and

WHEREAS, engaging educators, students, families, and the broader school community in asthma awareness and prevention efforts can foster a supportive environment that reduces the risk of asthma incidents and promotes the overall well-being of all students; and

WHEREAS, the District recognizes the urgency of adopting comprehensive strategies to improve school air quality and support students with asthma, reflecting our commitment to health, equity, and academic excellence;

NOW, THEREFORE, BE IT RESOLVED that on [DATE] of [MONTH, YEAR], by the [SCHOOL DISTRICT GOVERNING BOARD] (hereinafter "Board"), the District hereby commits to implementing the following measures to support students with asthma:

1. Develop and implement an indoor air quality management plan that includes classroom air quality sensors and portable HEPA air cleaners;
2. Develop and implement a school air quality dashboard that provides both real-time and historical classroom sensor data, with clear reporting, follow-up, and accountability procedures to ensure issues are addressed and the community can track progress over time;
3. Establish a policy to ensure the availability of quick-relief asthma medications and the presence of a full-time school nurse or trained staff member to administer such medications in every school;
4. Provide asthma education for all school personnel to recognize asthma symptoms and respond effectively to asthma incidents; and
5. Engage with families and the broader community by conducting building facility tours and workshops on school air quality;

BE IT FURTHER RESOLVED that the District will allocate appropriate resources to support these initiatives, ensuring that all students can learn in a healthy, safe, and supportive environment.

BE IT FURTHER RESOLVED that the District commits to ongoing evaluation of these initiatives to ensure their effectiveness and to make adjustments as necessary to meet the evolving needs of our students and school community.

ADOPTED by the [SCHOOL DISTRICT GOVERNING BOARD] on [DATE], with a unanimous vote of [NUMBER] in favor, [NUMBER] opposed, and [NUMBER] abstentions.

Letter to the Principal

You can use and modify the sample letter to the principal as needed. The sample letter may contain more information than you need; feel free to delete or adjust, where necessary. The letter can also serve as a reference when having a one-on-one conversation with your principal; it contains links to example districts, studies, and additional resources.

Feel free to submit both your checklist and the letter to your principal. Once you have scheduled a meeting with the principal, don't forget your talking points and key messages. The testimony tips to create a sense of urgency, highlight shared values, and make an ask from the School Board Resolution section may also be used here.

Although principals may be supportive of your ask(s), they also may need you to help lead on getting some of the strategies implemented. For example, the principal may ask you to work directly with the local parent-teacher organization to build Corsi-Rosenthal boxes or draft a no-idling policy. Be prepared to volunteer some of your time.

Sample Letter to the Principal

Dear [PRINCIPAL NAME],

I am writing to express my concern for school air quality. I have been doing some research and have come across some resources that demonstrate indoor air quality's (IAQ) impact on student health and learning. I understand poor school IAQ may contribute to student respiratory illness, absence, lower test scores, and lower school performance.

I know you value the health and academic success of [STUDENT NAME], so I am happy to schedule a time for us to meet and discuss how we can work together. It is important that we ensure all students are healthy and can focus on learning. Some specific strategies I would love to discuss are the following:

- A no-idling policy;
- Removal of asthma triggers;
- Use of third-party certified green cleaning products;
- Safe use and storage of cleaning supplies;
- A policy on keeping the school stocked with quick-relief asthma medications;
- Classroom indoor air quality (IAQ) sensors; and
- Portable HEPA air cleaners.

I have noticed that some families leave their cars idling during school drop-off and pick-up, and I am concerned the exhaust is making its way into the classrooms. Additionally, I have noticed a strong smell of cleaning products in the hallway on more than one occasion. Car exhaust and fumes from cleaning products can expose students to deadly carbon monoxide, particulate matter, and volatile organic compounds (VOCs), placing students at risk for respiratory distress and asthma attacks.

Nationally, about 1 in 12 children and adolescents have asthma; the rates here in [YOUR LOCATION] are [ASTHMA STATISTIC]. I believe we can prevent respiratory illness and asthma attacks with some practical policy changes and strategies, like ensuring a sufficient supply of outdoor air through the HVAC system, classroom IAQ sensors, and portable HEPA air cleaners. Portable HEPA air cleaners are a great supplement to the HVAC system and have been shown to reduce particulate matter by 80 percent or more within 30 minutes. The air cleaners do not need to be costly; several parent groups nationwide have built do-it-yourself air cleaners for their schools, such as the **Corsi-Rosenthal box** (CR box). The **CDC studied the use of CR boxes and confirmed their effectiveness**.

Installing classroom IAQ sensors may seem like a daunting task. Still, federal dollars have been made available for school districts looking to improve air quality. Several districts, such as **Boston Public Schools**, **District of Columbia Public Schools**, and **Denver Public Schools**, have used those funds and installed sensors. Classroom sensors can alert maintenance crews and educators to an urgent IAQ situation and enable prompt adjustments to the HVAC system, the opening of windows, or the use of fans and portable HEPA air cleaners.

I have included some resources on additional prevention strategies below my letter. Prevention efforts can help reduce illness and asthma attacks, but it would be great if the school was prepared in the event of an attack. **All states permit students to self-carry quick-relief medication**, but not every student carries their medication. As a result, **more states have enabled schools to stock medicines like Albuterol**. A large **school district in Arizona implemented a stock inhaler program**.

In their first year, they saw a 20 percent reduction in 911 calls and a 40 percent decrease in emergency medical services. I believe our school and students would greatly benefit from stocking Albuterol.

I look forward to speaking with you and collaborating on keeping our students healthy.

Thank you for your time,
[YOUR NAME AND SIGNATURE]

Some additional resources from the Environmental Protection Agency (EPA):

- **Indoor Air Quality Tools for Schools Action Kit** includes background information, guidance on managing IAQ, and checklists.
- **Toolkit for Safe Chemical Management in K-12 Schools** includes best practices for using and storing chemicals in schools.
- **Idle-Free Schools Toolkit for a Healthy School Environment** includes helpful information on implementing an idle-free campaign.
- **School Flag Program** helps to educate students and families on outdoor air quality.

Model Legislation

The model legislation, like the sample school board resolution, is sample legislation that you may share with policymakers, specifically with state policymakers. It can be modified, if necessary.

Indoor Air Quality

The **model legislation for indoor air quality** was created by the Johns Hopkins Center for Health Security (JHCHS). The model legislation includes best practices on indoor air quality (IAQ) implementation, communication, standards, and compliance.

The act is organized into key sections, each addressing different aspects of IAQ management:

- Purposes and Definitions
- Mission, Scope, and Awareness
- Building Testing and Assessments
- Building Investigations and Inspections
- Building Incentives and Enforcement
- Administrative Procedures and Miscellaneous

The Model State Indoor Air Quality Act enables state legislatures to:

- Develop their own precise regulatory language and establish their own protective airflow rates and allowable contaminant levels that are appropriate to local conditions;
- Mandate IAQ testing in publicly accessible buildings and require public posting of IAQ test results so that building occupants know the quality of the air they are breathing;
- Establish a system for people to file complaints about bad air quality and respond to those complaints, often with inspection by a state agency;
- Incentivize building owners to voluntarily make repairs and upgrades to HVAC systems, when necessary, to improve IAQ;
- Establish procedures for IAQ inspections and penalties for noncompliance; and
- Authorize a state agency to collect data and conduct research and require them to develop an IAQ plan, including the production of educational content.[45]

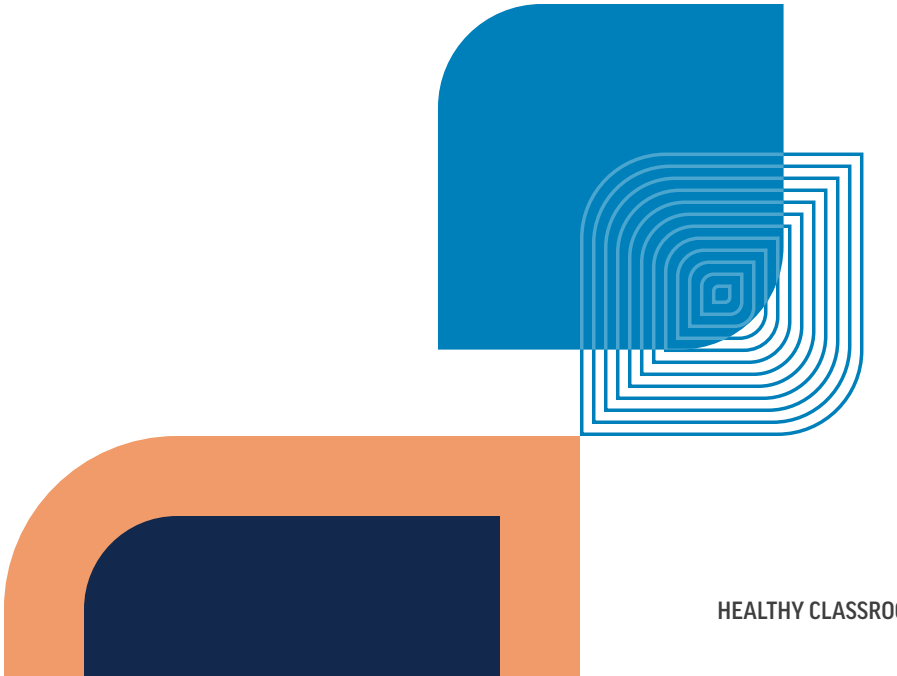
The Model State Indoor Air Quality Act and other materials, including a fact sheet, webinar, and infographic, can be found at https://centerforhealthsecurity.org/indoor-air.

Stock Albuterol Inhalers

Currently, 18 states have laws or guidelines that permit schools to stock and administer albuterol inhalers.[44]

Below is a list of some of the states and the corresponding legislation. The legislation below can be provided to your state's policy-makers as a sample to help inform legislation in your state.

- Arizona, House Bill 2208, **"Stock Inhalers for Schools"**
- California, Assembly Bill 1283, **"Pupil Health, Emergency Stock Albuterol Inhalers"**
- Illinois, General Assembly Bill 2958, **"Stock Albuterol"**
- New Hampshire, RSA 200:54, **"Rescue Inhalers in Schools"**
- Virginia, Code § 22.1-274.2, **"Possession and Administration of Inhaled Asthma Medications and Epinephrine by Certain Students or School Board Employees"**



Know Your Rights

Many schools have asthma management policies in place. You will want to collaborate with your child's school to ensure their policies and practices work for your family.

Below are some additional options you could employ to protect your child while in school. Please note that a student with asthma may qualify as a student with a disability for purposes of Section 504. Read more about Section 504 protections for students with asthma.

School Health Care Plans

	Emergency Care Plan	Individual Health Care Plan	Section 504 Plan	Individualized Education Program
What is it?	An emergency care plan (ECP) is a medical plan written by your child's doctor for your school to follow. The plan should include your child's asthma triggers and allergens and how to respond to an attack or reaction.	An individual health care plan (IHCP) outlines what the school will do to create and maintain a safe environment, your child's asthma or allergic reaction symptoms, and appropriate responses. The IHCP is written in collaboration with your child's doctor and the school nurse. An ECP is usually part of the IHCP.	504 plans provide education accommodations and support services to students. It can be requested by a student's family or the school. A student's family and the school develop the plan together. An ICHP can be part of a 504 plan, which then makes the ICHP legally enforceable.	An individualized education plan (IEP) outlines a child's present levels of academic and functional performance, specialized instruction, support services, individual accommodations, and measurable annual goals.[46] An ICHP can be part of an IEP plan, which then makes the ICHP legally enforceable.
Who is eligible?	Any child with a medical condition	Any child with a medical condition	Qualified students with disabilities who attend a school receiving federal financial assistance, as defined by the Americans with Disabilities Act	Students with one or more of the 13 specific disabilities listed in the Individuals with Disabilities Education Act (IDEA) who require special education services
Is it legally binding?	No	No	Yes	Yes

The above chart was adapted from the Asthma and Allergy Foundation of America (AAFA). The AAFA also provides sample asthma action plans.

Additional Resources

This toolkit is an easy-to-use resource for families, educators, and students. It does not include many of the technical details that are outlined in other online toolkits.

For more information, check out other toolkits and additional resources below.

Toolkits and Guides

Indoor Air Quality Tools for Schools Action Kit

Environmental Protection Agency (EPA)

The action kit includes best practices, industry guidelines, sample policies, and a sample IAQ management plan.

Managing Asthma: A Guide for Schools

U.S. Department of Health and Human Services

The guide provides an overview of asthma and how to effectively manage asthma in schools. It also includes checklists, recommendations, and sample letters.

Sensible Steps to Healthier School Environments

EPA

This resource provides an overview of asthma triggers and other potentially harmful elements—such as lead, radon, and mercury. It includes a checklist to help quickly assess exposure to common environmental health hazards in your school.

Dampness and Mold Assessment Tool: School Buildings

National Institute for Occupational Safety and Health (NIOSH)

NIOSH created this tool to help assess a school areas of dampness and mold in buildings and prioritize remediation of problem areas.

Green Cleaning for Healthy Schools Toolkit

Healthy Schools Network

The toolkit includes a variety of resources—such as tip sheets, PowerPoints, model policy, posters, and recommendations—to improve school cleaning practices.

Other Resources

Series: Indoor Air Quality Fact Sheets

Center for Green Schools

The fact sheet series provides an overview of the different types of building systems (such as decentralized, central system, or unit ventilator) and ventilation as well as the benefits of filtration and portable HEPA cleaners.

How to Evaluate Building Ventilation Using Carbon Dioxide Monitors

NEA

This guidance identifies what to look for in CO2 monitors, explains how to effectively use them and interpret the results, and outlines cautions when using results to make decisions about IAQ.

Considerations for Use and Selection of Portable Air Cleaners for Classrooms

UC Davis Western Cooling Efficiency Center

The white paper provides guidance on selecting appropriate portable HEPA air cleaners for classrooms.

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