

# EXHALE Guide for Schools

Strategies to Help People with Asthma Achieve Better Health

The Centers for Disease Control and Prevention's (CDC's) National Asthma Control Program created this Guide to assist schools in using CDC's EXHALE strategies to help people with asthma achieve better health outcomes.

## EXHALE

- Is a set of six strategies that each contribute to better asthma control.
- Can help both children and adults with asthma.
- Can have the greatest impact when multiple strategies are used together.

This Guide explains how schools can use EXHALE strategies, individually or in combination, to help people with asthma achieve better health outcomes. Every person with asthma does not necessarily need every strategy.

School personnel have the power to educate and help coordinate care for students with asthma. Schools can engage partners with the shared goal of helping people with asthma.



Centers for Disease  
Control and Prevention  
National Center for  
Environmental Health

# Welcome to EXHALE

CDC's National Asthma Control Program (NACP) and its partners help Americans with asthma achieve better health and improved quality of life. NACP developed EXHALE, a set of six strategies that each contribute to better asthma control.

## EXHALE strategies can reduce asthma-related missed school days

Also, each strategy in EXHALE can reduce asthma-related emergency department (ED) visits and hospitalizations.



Schools can use EXHALE to help students with asthma achieve better health

## What are the EXHALE strategies?



# EXHALE

### Education

on asthma self-management

### X-tinguishing

smoking and exposure to secondhand smoke

### Home

visits for trigger reduction and asthma self-management education

### Achievement

of guidelines-based medical management

### Linkages

and coordination of care across settings

### Environmental

policies or best practices to reduce asthma triggers from indoor, outdoor, or occupational sources

# The Role of School Personnel in Asthma Control

Managing a chronic condition like asthma can be affected by educational, environmental, behavioral, and social factors. Each person with asthma has a unique set of triggers that can cause them to experience symptoms.

School personnel can guide staff, students, and parents by sharing best practices to help people with asthma. School personnel can help reduce the morbidity and mortality of asthma by using EXHALE strategies.

This Guide will explain how EXHALE-related interventions can help schools improve the health of students with asthma.



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## Other EXHALE Guides are available for:

- Healthcare professionals.
- Healthcare system executive leaders.
- Managed care leaders and staff.
- Medicaid and Children’s Health Insurance Program leaders.
- Public health professionals.
- People with asthma, their families, and their caregivers.

These Guides are available at: <https://www.cdc.gov/asthma/exhale/>

# How EXHALE Can Help Schools

School personnel have an important role in improving the health of students with asthma. EXHALE can help reduce asthma-related missed school days, ED visits, and hospitalizations among students.

## EXHALE can have the greatest impact when:

- Multiple EXHALE strategies are used together in every community.
- Schools, public health professionals, healthcare professionals, health insurance plan administrators, people with asthma, their families, and other community members work together to use EXHALE.
- EXHALE-related programs consider the social and cultural context of the individuals and communities served by these programs.

## How can EXHALE be used if resources are limited?

- Partnerships can support a school or school district's EXHALE-related activities. For example, some health departments can link people with asthma to existing asthma self-management education or home visit programs.
- Existing tools and resources can be used to support EXHALE-related activities (see examples in the following pages).
- Not every person with asthma will need every EXHALE strategy. More resource-intensive services (such as home visits) can be focused on people at higher risk of asthma attacks.

Learn more about how you can use these strategies on the next page.



# Examples of How Schools Can Use EXHALE

Each EXHALE strategy can help people with asthma feel better, avoid the hospital, and not miss school or work.

## E ducation on asthma self-management

### More about this strategy:

- Asthma self-management education (AS-ME) includes education on how to use asthma medications correctly and how to reduce exposures to asthma triggers such as cockroaches or mold.
- Personalized asthma action plans for each student can help school nurses treat students' asthma symptoms according to their doctors' recommendations.

### Examples of what schools can do for this strategy:

- Encourage students with asthma and their families to receive AS-ME. One option is for school personnel to deliver AS-ME to students with asthma and their families.
- Examples of relevant AS-ME trainings for students with asthma, their families, or school personnel are in [Appendix 1](#).
- Some health departments have asthma programs that might have information on AS-ME classes available for students and their families. Contact information for some health department asthma programs can be found at <https://www.cdc.gov/asthma/contacts>.
- Collect and use a personalized asthma action plan for all students with asthma. Examples of asthma action plans are available in [Appendix 1](#).

## X -tinguishing smoking and exposure to secondhand smoke

### More about this strategy:

- Tobacco smoke is unhealthy for everyone, including people with asthma.
- Secondhand smoke is tobacco smoke that comes from the tip of a cigarette (or another tobacco product), or that is exhaled by someone who is smoking. This smoke can be inhaled by a nonsmoker who is nearby. Secondhand smoke from cigarettes can trigger an asthma attack.

### Examples of what schools can do for this strategy:

- Provide tobacco-use prevention education for students in kindergarten through grade 12.
- Encourage tobacco cessation for all students who smoke or use tobacco (including students with asthma), as well as their families and caregivers. More information about how to quit is available [here](#).
- Use CDC's [Body and Mind \(BAM!\) Classroom Resources for Teachers](#), which includes information on e-cigarettes.
- Avoid using tobacco industry sponsored youth prevention programs, as these are ineffective and may promote tobacco use among youth. Learn more [here](#).
- Adopt, implement, and enforce smokefree policies, which can support tobacco cessation and reduce exposure to secondhand smoke. More information is available in the section [Environmental policies or best practices to reduce asthma triggers from indoor, outdoor, or occupational sources](#).



## Examples of How Schools Can Use EXHALE (continued)

### **H**ome visits for trigger reduction and asthma self-management education

#### More about this strategy:

- A trained home visitor can help find common triggers of asthma attacks in homes and teach families how to reduce and remove triggers. This person can also teach families how to use asthma medications correctly.
- Home visits can especially help people who have had frequent hospitalizations or ED visits for asthma. Not everyone with asthma needs a home visit.

#### Examples of what schools can do for this strategy:

- Contact the health department's asthma program (if an asthma program exists) to find out if home visits for asthma are available nearby for students and their families. Contact information for some state, territorial, and local health department asthma programs can be found at <https://www.cdc.gov/asthma/contacts>.
- Encourage local home visit programs for asthma to use the [Home Characteristics and Asthma Triggers Checklist for Home Visitors \(English version\)](#), which is also available in [Spanish](#), includes low-cost steps to reduce asthma triggers, and has a related, standardized training for home visitors [here](#).

### **A**chievement of guidelines-based medical management

#### More about this strategy:

- Guidelines-based medical management includes taking asthma medication exactly as prescribed. Reasons why taking asthma medication as prescribed might be difficult for students and their families include incorrect inhaler use and not remembering to take medication.
- School-based health centers, which provide primary health care on-campus or off-site, can support access to and delivery of guidelines-based medical care for asthma. School-based health centers can reduce asthma-related hospitalizations and ED visits. More information is available [here](#).

#### Examples of what schools can do for this strategy:

- Learn about guidelines-based medical management, including how to manage asthma attacks. Examples of available online trainings are provided in [Appendix 2](#).
- Review inhaler technique (if applicable) with students with asthma, their families, and their caregivers, which can be reinforced with CDC's videos on "[Know How to Use Your Asthma Inhaler](#)."
- Collect and use a personalized asthma action plan for all students with asthma. Examples of asthma action plans are available in [Appendix 2](#).
- Increase access to professional registered school nurses in the school building, all day, every day.
- Refer students with asthma to school-based health centers, if possible and if needed.



## Examples of How Schools Can Use EXHALE (continued)

### **L**inkages and coordination of care across settings

#### More about this strategy:

- Care coordination in schools includes school nurses organizing the care of students by sharing information and maintaining communication with other care providers for students with asthma and other chronic health conditions.
- Support services might be available to help students with asthma and their families (examples provided below).

#### Examples of what schools can do for this strategy:

- Collect and use a personalized asthma action plan for all students with asthma. Examples of asthma action plans are available in [Appendix 3](#).
- Strengthen partnerships with healthcare organizations and others to improve linkages and care coordination for students with asthma. Relevant resources are available in [Appendix 3](#).
- Connect students with asthma and their families to needed support services. The health department might have information on support services available to students. Also, some relevant resources are available in [Appendix 3](#).



### **E**nvironmental policies or best practices to reduce asthma triggers from indoor, outdoor, or occupational sources

#### More about this strategy:

- Policies and practices shown to help people with asthma include:
  - Modifying older diesel engines of school buses to run more cleanly to reduce air pollution.
  - Smokefree policies, including:
    - Comprehensive smokefree policies that prohibit smoking in all indoor spaces of workplaces (including school campuses), restaurants, bars, and public and private multi-unit housing (including apartment buildings).
    - Smokefree rules that prohibit smoking in homes and vehicles.
  - [Home weatherization assistance programs](#) that provide loans or grants to low-income residents to repair or improve their homes, which can reduce asthma triggers in their homes such as mold and pests.
  - Eliminating, when possible, or reducing exposure to asthma triggers in the workplace.

#### Examples of what schools can do for this strategy:

- Adopt, implement, and enforce comprehensive smokefree policies that prohibit use of all tobacco products, including smoking cigarettes, in school buildings, on school property, and at school events (example policy [here](#)).
- Find out if there is a state clean diesel grant, rebate, or loan program available to your school; some information is available [here](#).
- Talk with community leaders about environmental policies or best practices that can help people with asthma, including students.

# What EXHALE in Action Can Look Like: Selected Examples

Schools, in partnership with the Missouri Asthma Prevention and Control Program (MAPCP) and others, have successfully carried out EXHALE-related activities to help students with asthma in Missouri. Here are some examples:

- School district superintendents partnered with MAPCP and others to provide online or face-to-face training to school nurses, using [Teaming Up for Asthma Control® \(TUAC\)](#), a program developed with support from CDC in 2010. School nurses then used materials provided by MAPCP and its partners to deliver AS-ME to students who enrolled (with parental consent). More information about how these activities were conducted, as well as health and economic outcomes, is available in a [peer-reviewed publication](#) and a [white paper](#).
- The Missouri School Boards' Association, Missouri School Health Program, MAPCP, the state Medicaid agency (MO HealthNet), and other partners formed the Care Coordination for School-Aged Children Workgroup. This partnership resulted in the creation of a template parental consent form that allows schools to share health-related information with students' healthcare professionals and health insurance plans and improve coordination of care; this template is compliant with the Family Educational Rights and Privacy Act (FERPA). Distribution of the customizable form occurs via [School Nurse Link](#), a website that facilitates linkages between school nurses and health insurance plans. This website helps school nurses connect with health insurance plans for case management, transportation, and other services.
- Through the [Missouri Clean Diesel Program](#), in the Missouri Department of Natural Resources, school districts have increased their number of school buses that run more cleanly. These improvements can reduce air pollution and help children with asthma avoid hospitalizations and ED visits for asthma.

- Through the Missouri School Health Program, the [Adolescent Cessation in Every School \(ACES\)](#) program is offered to school nurses and counselors through trainings and conferences. The ACES toolkit was developed by the Missouri Tobacco Control Program for professionals who work with adolescents, especially in a school-based setting. Many of the tools provided in the toolkit focus on helping young people quit tobacco through behavioral interventions (such as motivational interviewing or completing the quit plan) and would not be considered a medical treatment requiring permission from parents and guardians.

## How can asthma control programs be partners in using EXHALE?

Some state, territorial, and local health departments have asthma control programs. These programs can support schools. For example, they might be able to:

- Provide information on how asthma affects a state or community, how EXHALE can help a particular state or community (such as impact on health or healthcare costs), and how EXHALE-related activities can be carried out.
- Connect people with asthma to existing EXHALE-related programs, such as AS-ME or home visits for asthma.
- Convene partners (such as from healthcare, schools, or housing) to work together to help people with asthma.

Contact information for some state, territorial, and local asthma control programs in health departments is available at <https://www.cdc.gov/asthma/contacts>.

Health department programs and services vary. You can contact your state, territorial, or local health department to learn more about potential partnership opportunities to help people with asthma.

# How Program Evaluation Can Help with EXHALE

Program evaluation can show how well EXHALE-related efforts help people with asthma and how these efforts can improve. The health department can ask schools to participate in program evaluations, or schools can opt to carry out evaluations on their own.

## Examples of questions that schools can use for program evaluation include:

- Are students with asthma, their families, and school personnel receiving the AS-ME training they need to reduce asthma attacks?
- Are asthma action plans regularly updated and accessible when needed?
- Are asthma services coordinated between the school, the health department, and other healthcare organizations or service providers? What gaps exist?

Evaluation is a learning process that can be integrated into routine practices. Good evaluations are systematic, follow a standard framework (such as the [CDC Framework for Program Evaluation in Public Health](https://www.cdc.gov/asthma/program_eval/default.htm)), and involve the people who are working with or served by the program. More information and resources on program evaluation can be found at [https://www.cdc.gov/asthma/program\\_eval/default.htm](https://www.cdc.gov/asthma/program_eval/default.htm).



# Selected Resources Related to EXHALE

## Resources related to multiple EXHALE strategies:

- CDC's [EXHALE: A Technical Package to Control Asthma \(full document\)](#).
- CDC's [Strategies for Addressing Asthma in Schools](#).
- [CDC Vital Signs: Asthma in Children](#).
- U.S. Environmental Protection Agency's [Managing Asthma in the School Environment](#).
- American Lung Association's [Asthma-Friendly Schools Initiative Toolkit](#).

## **E**ducation on asthma self-management

- Agency for Healthcare Research and Quality [Technical Brief on AS-ME packages](#).
- See [Appendix 1](#) for more resources for this strategy.

## **X**-tinguishing smoking and exposure to secondhand smoke

- [CDC Vital Signs: Tobacco Use By Youth Is Rising](#), which describes tobacco product use among students and what can be done to help.
- CDC's [Avoid Secondhand Smoke webpage](#), which includes information on the health effects of secondhand smoke, steps to reduce exposure to secondhand smoke, and stories of people with asthma affected by secondhand smoke.
- National Cancer Institute's [Become a Smokefree Teen](#), which provides information and tools to help youth who want to stop smoking or vaping.

## **H**ome visits for trigger reduction and asthma self-management education

- [Home Characteristics and Asthma Triggers Checklist for Home Visitors \(English version\)](#), created by CDC, U.S. Environmental Protection Agency, and U.S. Department of Housing and Urban Development (Spanish version [here](#); standardized home visit training in English [here](#)).

## Selected Resources Related to EXHALE (continued)

### **A**chievement of guidelines-based medical management

- [The Community Guide: School-Based Health Centers](#).
- See [Appendix 2](#) for more resources for this strategy.

### **L**inkages and coordination of care across settings

- [CDC Healthy Schools: Care Coordination](#).
- See [Appendix 3](#) for more resources for this strategy.

### **E**nvironmental policies or best practices to reduce asthma triggers from indoor, outdoor, or occupational sources

- CDC's [Health Impact in 5 Years Initiative](#), which includes [home weatherization assistance programs](#), [clean diesel bus fleets](#), and [comprehensive smokefree policies](#).
- U.S. Environmental Protection Agency's [Mold Remediation in Schools and Commercial Buildings Guide](#).
- American Lung Association's [Create Tobacco-Free Schools](#), which includes a sample Tobacco-Free School Campus Policy, a parent letter, newsletter article, and other resources.

**For more information, visit:**

<https://www.cdc.gov/asthma/exhale/>

# Appendix 1: Selected Information About Education on Asthma Self-Management

## Resources that can help school nurses and others deliver AS-ME:

Examples of Resources That Can Help School Nurses and Others Deliver AS-ME			
Name (Source)	Intended Audience	Language(s)	How to Access
<a href="#">Asthma Basics</a> (ALA)	School nurses, CHWs, and others who teach adults and children with asthma, their families, and caregivers.	English, Spanish	Go to website (use hyperlink)
<a href="#">Asthma Basics for Children</a> (AAFA)	School nurses who teach parents and teachers of young children with asthma.	English, Spanish	Go to website (use hyperlink)
<a href="#">Asthma Education for the Community Health Worker</a> (AAE)	CHWs who teach people with asthma and their families.	English	Go to website (use hyperlink)
<a href="#">Breathe Well, Live Well Training for Educators</a> (ALA)	Healthcare professionals, health educators, or CHWs who teach adults with asthma.	English	See note*
<a href="#">Kickin' Asthma</a> (ALA)	School personnel and others who teach children with asthma aged 11–16 years.	English	See note*
<a href="#">Open Airways for Schools</a> (ALA)	School personnel and others who teach children with asthma aged 8–11 years.	English, Spanish	See note*
<a href="#">Wee Breathers</a> (AAFA)	Healthcare professionals who teach parents of young children with asthma.	English, Spanish	Go to website (use hyperlink)
<a href="#">You Can Control Asthma</a> (AAFA)	Healthcare professionals who teach school-age children with asthma and their families.	English, Spanish	Go to website (use hyperlink)

\*Contact the American Lung Association at 1-800-586-4872 to access training and program materials. *Kickin' Asthma* and *Open Airways for Schools* are designed to be delivered as group.

AAE, Association of Asthma Educators; AAFA, Asthma and Allergy Foundation of America; ALA, American Lung Association; CHW, community health worker.

Also, the [National Asthma Educator Certification Board](#) is a voluntary testing program used to assess knowledge in asthma education. Certified asthma educators are typically licensed healthcare professionals (such as a nurse or respiratory therapist) who obtain this certification, but others (such as community health workers) can also become certified if they have at least 1,000 hours of relevant experience and pass this test.

Notes about this page:

- This information is current as of August 2020.
- More information on some of these tools and other AS-ME tools is available at the Agency for Healthcare Research and Quality [Technical Brief on AS-ME packages](#).

## Appendix 1: Selected Information About Education on Asthma Self-Management (continued)

AS-ME that people with asthma, their families, and their caregivers can access online include:

Examples of Online AS-ME for Patients with Asthma, Their Families, and Their Caregivers			
Name (Source)	Intended Audience	Language(s)	How to Access
<a href="#">Asthma Basics</a> (ALA)	Adults and children with asthma, their families, and their caregivers.	English, Spanish	Go to website (use hyperlink)
<a href="#">Asthma Care for Adults</a> (AAFA)	Adults with asthma and their caregivers.	English, Spanish	Go to website (use hyperlink)

AAFA, *Asthma and Allergy Foundation of America*; ALA, *American Lung Association*.

### Asthma action plans

Asthma action plans can be a useful tool to facilitate or reinforce AS-ME. Sources of asthma action plans include:

- CDC's [Tools for Asthma Control](#), which includes printable, electronic, and computer-based asthma action plans.
- American Lung Association's [Create an Asthma Action Plan](#), which includes English and Spanish asthma action plans.

Also, the American Lung Association's [Asthma-Friendly Schools Initiative Toolkit](#) includes sample school policies and letters to parents about asthma action plans, which can be found [here](#).

# Appendix 2: Selected Information About Achievement of Guidelines-Based Medical Management

This table lists some trainings for school nurses and other school personnel on guidelines-based medical management:

Examples of Training Opportunities for School Personnel on Guidelines-Based Medical Management	
Name (Source)	Notes
<a href="#">Asthma Educator Institute</a> (ALA)	Continuing education credits vary by location.
<a href="#">Asthma Management and Education Online</a> (AAFA)	Nurses and respiratory therapists can earn 8.75 contact hours.
<a href="#">Creating Asthma-friendly Environments and Promoting Access to Guidelines-based Care for Children with Asthma</a> (NASN, NEEF)	Nurses can earn 3.0 contact hours.
<a href="#">Environmental Management of Pediatric Asthma: Guidelines for Health Care Providers</a> (NEEF)	Continuing education credits are not available.
<a href="#">Environmental Triggers of Asthma</a> (ATSDR)	Physicians can earn 1.75 continuing education credits; nurses can earn 1.75 contact hours; health educators can earn 1.5 contact hours.
<a href="#">EQIPP: Asthma</a> (AAP)	Physicians can earn 54 continuing education credits; nurses can earn 54 contact hours.
<a href="#">Putting It Into Practice: Pediatric Environmental Health Training Resource</a> (CEHN)	Continuing education credits are not available.

AAFA, Asthma and Allergy Foundation of America; ALA, American Lung Association; AAP, American Academy of Pediatrics; ATSDR, Agency for Toxic Substances and Disease Registry; CEHN, Children's Environmental Health Network; EQIPP, Education in Quality Improvement for Pediatric Practice; NASN, National Association of School Nurses; NEEF, National Environmental Education Foundation.

The information on this page is current as of August 2020.

## Asthma action plans

Asthma action plans can be a useful tool to facilitate or reinforce guidelines-based medical care. Please see the [previous page](#) for more information about asthma action plans.

# Appendix 3: Selected Information About Linkages and Coordination of Care Across Settings

The information provided in this appendix is organized according to the [examples on page 6](#) of how schools can use EXHALE:

- Collect and use a personalized asthma action plan for all students with asthma.
- Strengthen partnerships with healthcare organizations and others to improve linkages and care coordination for students with asthma.
- Connect students with asthma and their families to support services.

## Example 1: Collect and use a personalized asthma action plan for all students with asthma

Sources of asthma action plans include:

- CDC's [Tools for Asthma Control](#), which includes printable, electronic, and computer-based asthma action plans.
- American Lung Association's [Create an Asthma Action Plan](#), which includes English and Spanish asthma action plans.

Also, the American Lung Association's [Asthma-Friendly Schools Initiative Toolkit](#) includes sample school policies and letters to parents about asthma action plans, which can be found [here](#).

Asthma action plans can be a useful tool to facilitate or reinforce linkages and coordination of care.

## Example 2: Strengthen partnerships with healthcare organizations and others to improve linkages and care coordination for students with asthma

Relevant resources include:

- American Academy of Allergy, Asthma & Immunology's [School-Based Asthma Management Program \(SAMPRO\)](#).
- Template letters to communicate with healthcare professionals about:
  - Students with asthma (available [here](#)).
  - Students whose asthma symptoms affect their school attendance or activities (available [here](#)).
- Template parental consent form to allow schools to share health-related information with students' healthcare professionals and health insurance plans and improve coordination of care (available [here](#) — this example is compliant with the Family Educational Rights and Privacy Act [FERPA]).
- Online training "[Partnership Building to Support Students Manage Chronic Health Conditions](#)" (nurses can earn 1.0 contact hours).

## Appendix 3: Selected Information About Linkages and Coordination of Care Across Settings (continued)

### Example 3: Inform and help people with asthma, their families, and their caregivers connect to local support services

Relevant resources include:

Resource	Brief Description
<b>American Academy of Family Physicians' The EveryONE Project® <a href="#">Neighborhood Navigator</a></b>	This interactive tool can identify community resources by zip code. It is available in more than 100 languages.
<b>U.S. Department of Energy's <a href="#">Where to Apply for Weatherization Assistance</a></b>	This website includes information on how and where to apply for home weatherization assistance programs providing loans or grants to low-income residents to repair or improve their homes, which can reduce asthma triggers in their homes such as mold and pests.

