
Asthma Management in Schools

Jodie Rodriguez, MS, CPNP, AE-C
Children's Healthcare of Atlanta
Asthma Center of Excellence
404-785-9960



Disclaimer

- This program offers general information and is not specific medical advice. Always consult with a doctor or other healthcare provider if you have any questions or concerns about the care or health of a child.
- In case of an urgent concern or emergency, call 911 or go to the nearest emergency room right away.
- A Children's Healthcare of Atlanta pediatric advice nurse is available 24 hours a day at 404-785-KIDS.

What Is Asthma?



A disease of the lungs where:

- **Airway becomes swollen and inflamed**
- **Airway is super- sensitive**
- **Airway narrows in response to a trigger**
- **A chronic disease**



What is Asthma?

- **Variable among students, seasons, and a person's lifetime**
- **Individuals could have intermittent or persistent asthma (mild, moderate, or severe)**
- **Asthma episodes (attacks) can be mild, moderate or life-threatening**
- **Asthma cannot be cured but it can be controlled.**

Who Gets Asthma?

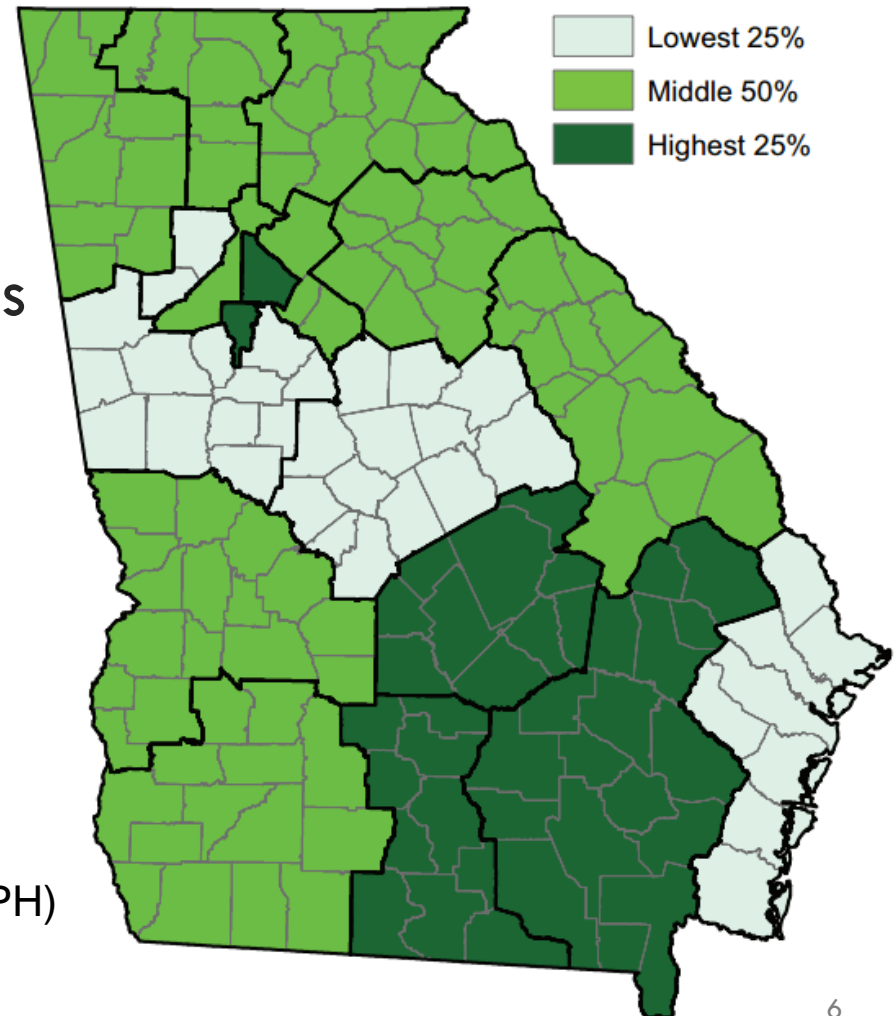
- **Anyone can get asthma, at any age**
- **More boys than girls**
- **Higher rates among African-American and Puerto Rican populations**
- **80% develop symptoms before age 5**
- **Many have increased incidence of allergies/eczema**
- **Tends to run in families**

Asthma in Georgia's Children

- Approximately 9% have asthma, an estimated 224,000 children
- Approximately 19% of children living in households with annual incomes <\$15,000 have asthma
- #1 reason for inpatient admission and ED/Urgent Care visits to Children's Healthcare

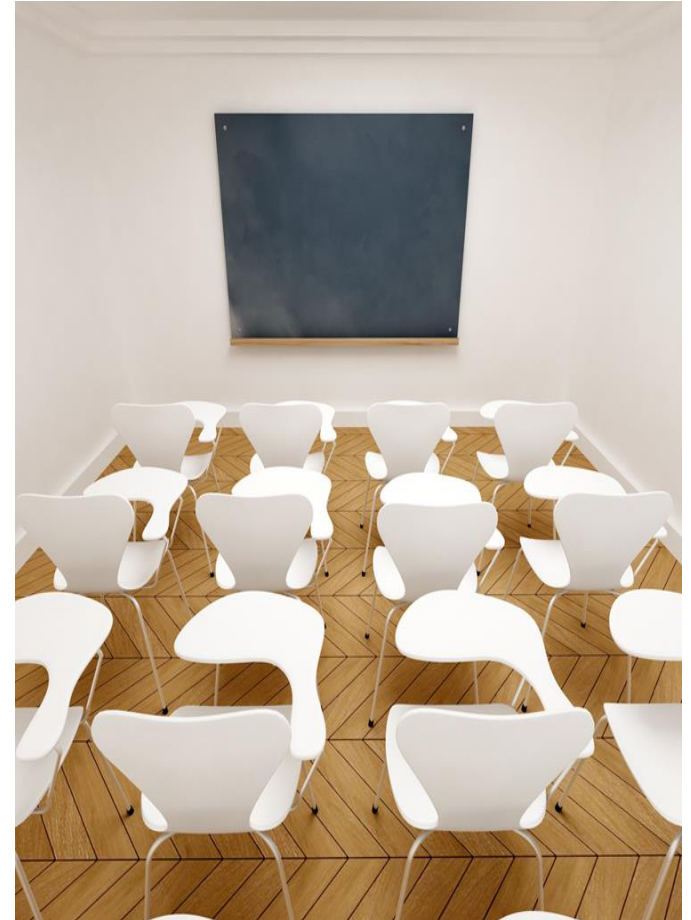
(Georgia Asthma Surveillance Report 2012, DPH)

Prevalence of Current Asthma Among Children 0-17 Years, Georgia 2006-2010



Impact of Uncontrolled Asthma on Student Learning

- **470,000 missed school days annually due to asthma**
- **Missed class time due to frequent visits to the school clinic**
- **Student fatigue due to night time symptoms**



Triggers



Exercise



Emotions



Infections



Weather changes



Odors

Triggers make the airway swell and asthma symptoms appear.

Triggers: allergies



Dust mites



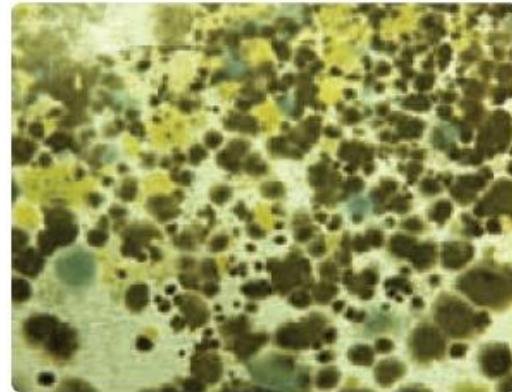
Pollen



Furry animals



Roaches



Mold

Triggers: cigarette smoke



Exercise Induced Asthma (EIA)

- **10-15% of General Population**
- **90% of all Asthmatics have some component**

Watch for:

- **Cough after exercise**
- **Shortness of Breath**
- **Wheezing/ Chest tightness**
- **“Out of shape”**
- **Tend to avoid play/Cannot keep up**

May need pre-treatment before exercise or strenuous activity

- *Beware of dizziness- reflects cardiac issue*

Reducing Triggers in School

- Avoid exposure to tobacco smoke and other smoke
- Avoid exposure to strong smells and odors
- Keep temperature and humidity at appropriate settings
- Dry up damp and wet areas immediately
- Consider removing furred or feathered animals from the classroom

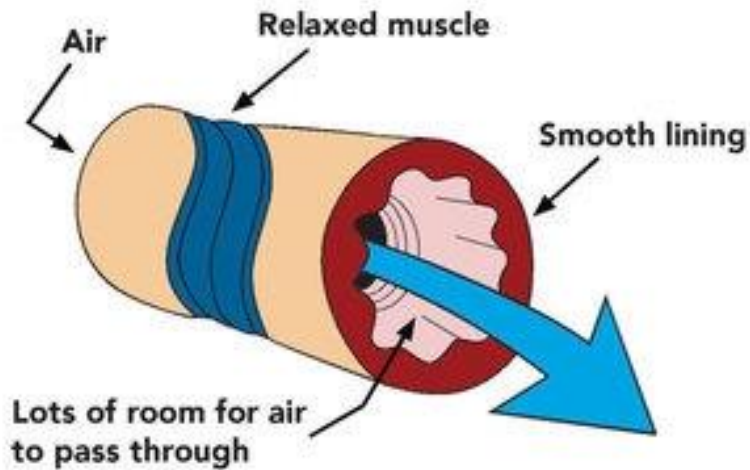


Reducing Triggers in School

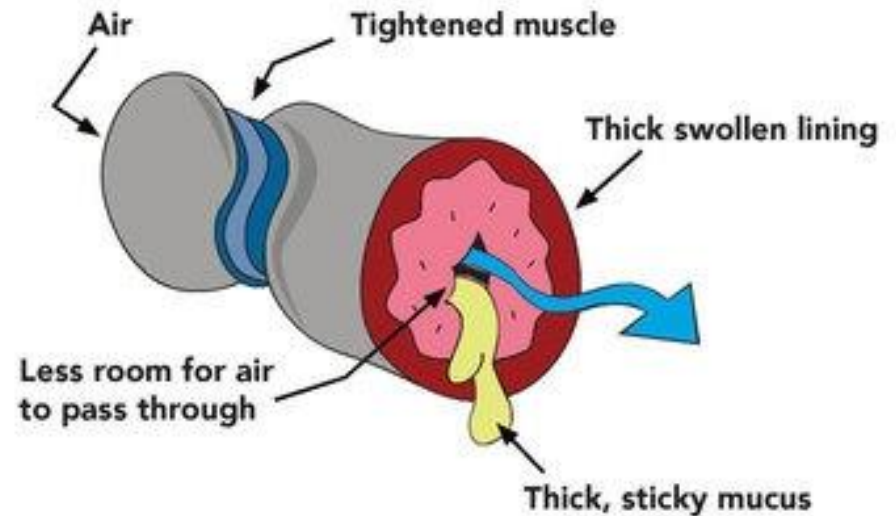
- Use pest management techniques to control pests
- Adjust schedule for high smog, high pollen, low temps
- Allow student to pre-medicate before exercise, if needed
- Encourage good hand washing and flu shots

What Happens During an Asthma Episode

Airway before an attack



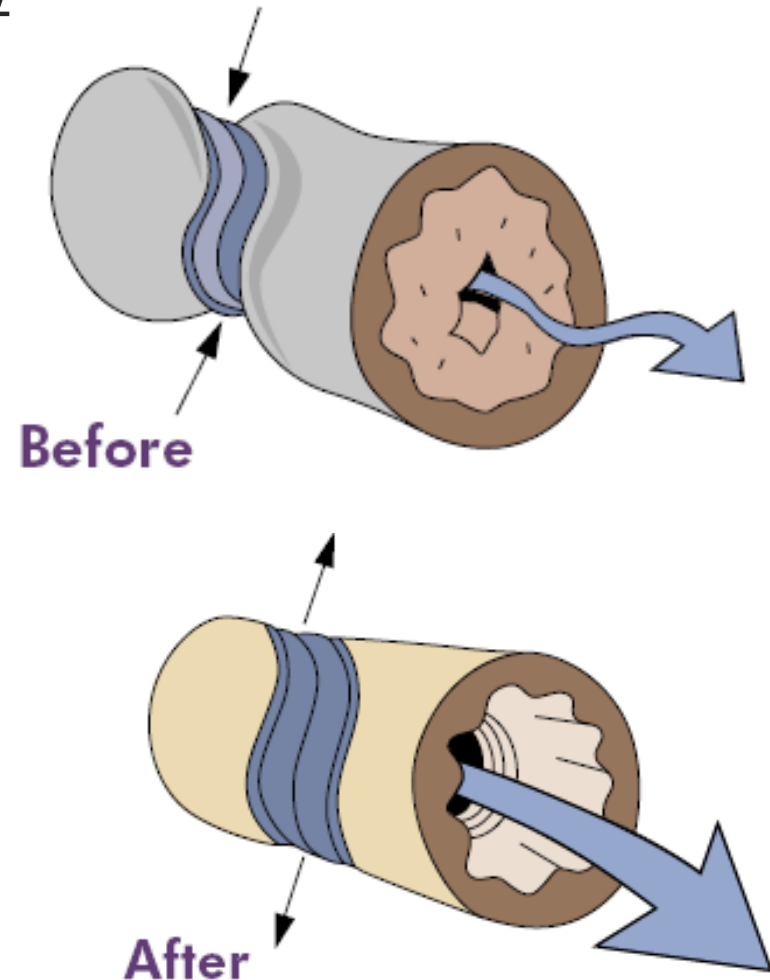
Airway during an attack



Types of asthma medication

Quick-relief (yellow/red zone)

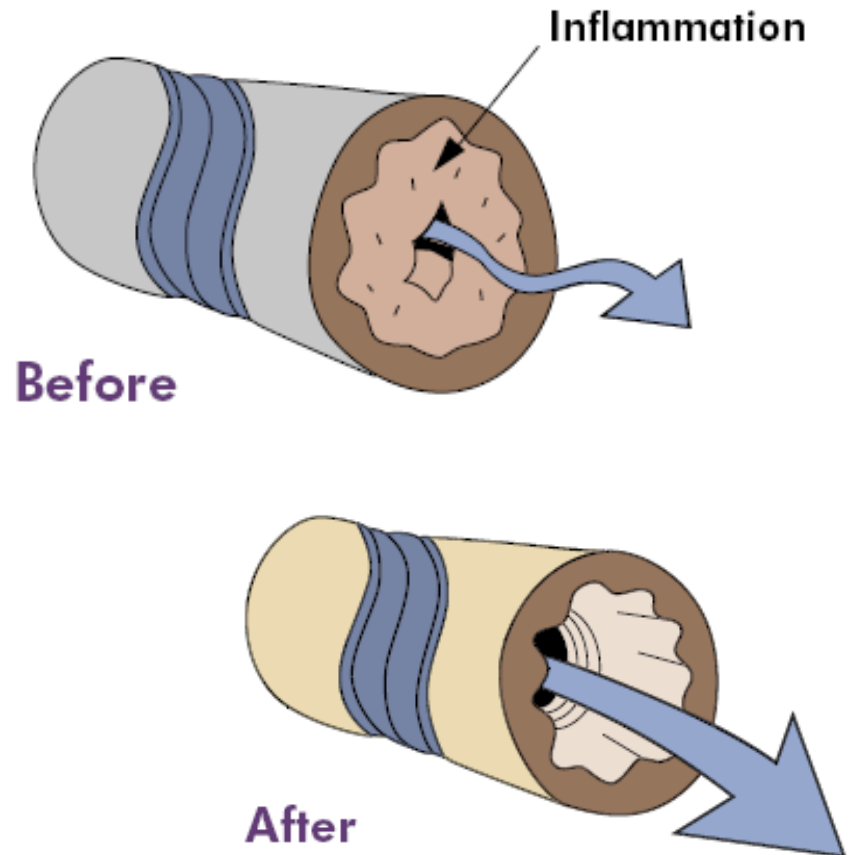
- Also called rescue or emergency medicine - **WILL SAVE LIFE IF HAVING A SEVERE ATTACK**
- Relaxes tight muscles around airway
- Helps stop coughing, wheezing, and trouble breathing
- Starts working within five minutes and usually lasts four hours
- Should always have this with you in case it is needed
- Examples are:
ProAir, Proventil, Ventolin, Xopenex, **Albuterol**



Types of asthma medication

Long term controllers

- For daily control and prevention of symptoms (usually taken before and after school)
- Used for the prevention of asthma symptoms, **not a rescue medication; WILL NOT SAVE LIFE IF HAVING AN ATTACK, but will help PREVENT an attack**
- Reduces swelling and mucus inside airway
- Examples are: Flovent, Pulmicort, Singulair, Advair, Dulera, Asmanex, Symbicort



Proper use of an inhaler (MDI)

Proper use of an inhaler helps to ensure that the asthma medicine gets to the lungs where it is needed. A spacer or holding chamber will help your child get the proper amount of medicine.



A. Spacer/holding chamber



B. Spacer/holding chamber with mask

1. Prime the inhaler according to the manufacturer's instructions.
2. Stand up or sit up straight.
3. Take off the cap and shake the inhaler.
4. Hold the inhaler as instructed by your doctor using one of these methods (above).
5. Breathe out all the way.

If using a spacer/holding chamber:

6. Breathe in slowly and deeply to fill the lungs. Press down on the inhaler at the same time.

7. Hold breath for 5 to 10 seconds.

If using a spacer/holding chamber with mask:

6. Place mask firmly on face, covering nose and mouth.
7. Press down on the inhaler and breathe in and out slowly 6 times.
8. Shake the inhaler before taking each puff. If more than one puff is ordered, allow one minute between each puff.

What Are the Symptoms of Asthma? (early signs)

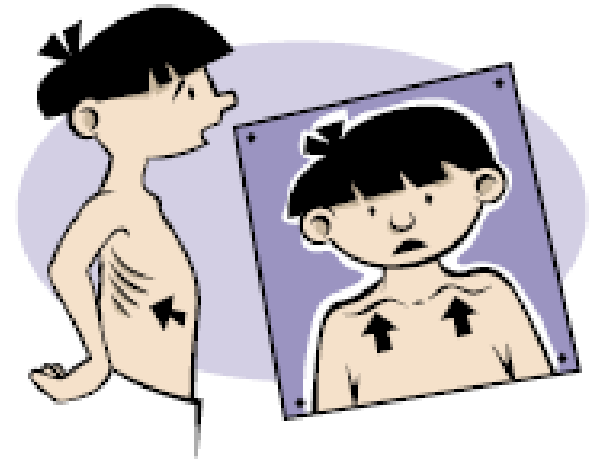
- **Coughing**
- **Wheezing or whistling in the chest**
- **Feeling short of breath**
- **Tightness in the chest**
- **Waking at night with symptoms***

*A key indicator of uncontrolled asthma



Signs of Distress (late signs)

- can't stop coughing or wheezing
- blue/gray color of lips or fingernails
- hard to breathe, fast or short of breath
- skin on chest 'sucking in'
- hunched over, with shoulders lifted, and straining to breathe
- difficulty completing a sentence without pausing for breath



If in distress.... **GET HELP!**

Asthma Action Plan

- Written by parent, student, and healthcare provider
- States how to treat asthma every day and how to treat if an asthma episode occurs
- Specific to child and their needs
- Should be on file in clinic with copies for student's teachers, PE teachers and coaches
- Should be easily available for all on and off-site activities before, during, and after school
- Updated yearly

I want to be able to: _____

My asthma action plan

Patient name: _____ DOB: _____
 Doctor's name: _____ Signature: _____
 Doctor's phone #: _____ Date: _____

Controller medicines	How much to take	How often	Other instructions
		_____ times per day EVERY DAY	<input type="checkbox"/> Gargle or rinse mouth after use
		_____ times per day EVERY DAY	
		_____ times per day EVERY DAY	
Quick-relief medicines	How much to take	How often	Other instructions
	<input type="checkbox"/> 2 puffs <input type="checkbox"/> 4-6 puffs <input type="checkbox"/> 1 nebulizer treatment	Take ONLY as needed (see below — starting in Yellow Zone or before exercise)	NOTE: If you need this medicine more than 2 days a week, call your doctor.


Asthma triggers (check all that apply):
 Exercise Change in temperature Molds Animals Strong odors or fumes Smoke
 Pollens Respiratory infections Dust Strong emotions Food/Other _____

Special instructions when I am ● Doing well ● Be careful ● Ask for help

Doing well.

GREEN ZONE

- No coughing, wheezing, chest tightness, shortness of breath during the day or night
- Can go to school and play




PREVENT asthma symptoms every day:

- Take my controller medicines (above) every day
- Before exercise, take _____ puff(s) of _____
- Avoid triggers that make my asthma worse (See above)

Be careful.

YELLOW ZONE

- Coughing, wheezing, chest tightness, shortness of breath
- Waking at night due to asthma symptoms
- Can do some, but not all, usual activities
- Runny nose, watery eyes




CAUTION. Continue taking my controller medicines every day.

- Take _____ puffs or _____ nebulizer treatment(s) of quick relief medicine. If I am not back in the **Green Zone** within one hour, then I should:
- Continue using quick relief medicine every 4 hours as needed. Call provider if not improving in _____ days.
- Increase _____
- Add _____

Ask for help.

RED ZONE

- Very short of breath
- Continual coughing
- Skin between ribs is pulling inwards
- Difficulty speaking without running out of breath
- Quick-relief medicines have not helped
- Symptoms same or worse after 48 hours in Yellow Zone



MEDICAL ALERT! Get help!

- Take quick-relief medicine: _____ puffs every _____ minutes and get help immediately.
- Take _____
- Call _____

If skin, fingernail or lip color is blue at any time:
Call 911 for help or go to the nearest Emergency Department

Components of an Asthma Action Plan

- Prescribed daily controller and quick-relief medicines
- Treatment guidelines for handling asthma episodes
- Emergency contacts
- List of things that make student's asthma worse

Green Zone

- No symptoms
- Able to play
- Take controller medicines as prescribed
- Pretreat before exercise, if part of plan
- Avoid triggers when possible

Yellow Zone

- Early warning signs
 - Mild coughing
 - Mild wheezing
 - Tight feeling in chest
 - Feeling short of breath
 - Difficulty during play
 - Waking at night with symptoms*
- Give quick relief medicine every 4 hours until no symptoms for 24 hours
- Continue giving controller medicines
- Call doctor if not improved in 2 days

Red Zone

- Signs of distress
 - Skin between ribs and around neck area pulls in with each breath
 - Sitting hunched over to try to breathe more easily
 - Severe coughing, wheezing or chest tightness
 - Difficulty completing a sentence without taking a breath*
- Give quick relief medicine every 20 minutes, sooner if needed
- Call cluster nurse as appropriate
- Call 911 if not better, but continue giving quick relief medicine until help arrives

When to call 911

- If you are giving the quick relief medicine and it isn't helping
- If symptoms return sooner than 3-4 hours
- If your instincts tell you to

- If a child is in distress, call 911 instead of driving them yourself unless you have an additional adult that can continue giving quick relief medicine in the car

High Risk Asthmatics

- Previous severe exacerbation (intubation or ICU admit)
- > 2 hospitalizations for asthma in the past year
- > 3 ED visits for asthma in the past year
- Use of >2 canisters per month of quick relief meds
- Poor perception of asthma symptoms or severity
- Current use of or recent withdrawal from systemic corticosteroids
- Low economic status and urban residence
- Lack of written asthma plan

(NIH, NHLBI, NAEPP: *Guidelines for the Diagnosis and Management of Asthma*, 2007)



Asthma and Food Allergy

- Almost 1 in 4 inner-city asthmatic school children also have food allergy
- Teenagers and young adults, especially those with asthma, are at the highest risk of severe and fatal food allergy reactions
- The two strongest associations of death from food allergy are failure to recognize the severity of the reaction and DELAY in the administration of epinephrine

(JACI In Practice: Food Allergy and Increased Asthma Morbidity in a School-Based Inner-City Asthma Study, Friedlander et al, May 2013)



The Student with Uncontrolled Asthma

- Frequent use of albuterol
- Use of albuterol for pretreatment, as well as after exercise
- Frequent colds
- Frequent absences due to asthma
- Persistent cough
- Self-limitation of physical activities
- Fatigue due to nighttime symptoms



Consequences of Uncontrolled Asthma

- Missed school days
- Poor academic performance
- Poor behavior
- Decrease lung function and airway remodeling
- Increased risk for obesity due to inactivity
- Risk for severe exacerbations, hospitalizations and death

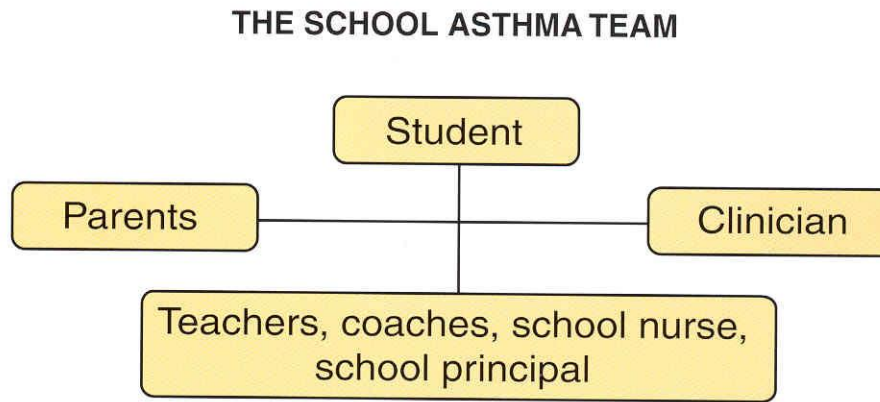
Impact of Missed School Days

- Increased parental stress due to missed work and financial impact
- Because students reared in poverty benefit the most from being in school, one of the most effective strategies for providing pathways out of poverty is to do what it takes to get these students in school every day.
- For 8th graders who were absent 15 or more days, their 4-year graduation rate dropped from 78.73% to 30.89%

School Asthma Management

Key components:

- Identify students with asthma
- Obtain asthma management/emergency plans
- Educate staff and students on asthma
- Implement policies to promote asthma control
- Teamwork is essential to create a healthy school environment



Supportive School Policies

- Ensure accurate student health records
- Establish emergency plans for asthma episode in school
- Encourage policies to allow students to carry and self-administer medications (have back up supplies in clinic)
- Ensure immediate access to medications during all school activities
- Ensure communication between school and parent/caregiver



Senate Bill 472 (SB 472)

Self-administration of Asthma Medication by Minor Children at School

- Effective on July 1, 2002
- Also known as the “Kellen Bolden Act”

Any student who is authorized for self-administration of asthma medication:

1. while in school
2. at a school sponsored activity
3. while under supervision of school personnel
4. while in before-school or after-school care on school property

House Bill 227 (HB 227)

Effective July 1, 2011

School may stock epinephrine for use for identified anaphylaxis

School personnel may administer epinephrine to a student or staff member with anaphylactic adverse reaction regardless of prescription

Any school personnel who does this in good faith is immune from civil liability

www.epipen4schools.com

House Bill 362 (HB 362)

Amendment to HB 227

- Effective July 1, 2015

School may stock albuterol for use for identified respiratory distress

School personnel may administer albuterol to a student or staff member with respiratory distress regardless of prescription

Any school personnel who does this in good faith is immune from civil liability

Teaching Points for Parents

3 Reasons to Use Quick Relief Medicine

- For pretreatment before exercise or another known trigger
- For quick relief when hit with a trigger, then for 24 hours following
- For treatment every 4 hours until 24 hours after symptoms have stopped when early signs occur (i.e., runny nose, coughing at night)

Teaching Points for Parents

Symptom Monitoring

- To recognize early signs of deterioration
- To take appropriate action
(fatal attacks occur out of hospital)
- Adjust meds early in exacerbation
- When to seek medical care

(NIH, NHLBI, NAEPP: *Guidelines for the Diagnosis and Management of Asthma*, 2007)



Teaching Points for Parents

When to seek medical help:

- Severe exacerbation
- Rx does not give rapid, sustained improvement
- Further deterioration
- Giving albuterol every 4 hours for 2 days with no improvement

*Seek medical care rather than rely on bronchodilator therapy in excessive doses or for prolonged periods

e.g., > 12 puffs/day for more than 24 hours

(NIH, NHLBI, NAEPP: *Guidelines for the Diagnosis and Management of Asthma, 2007*)



Teaching Points for Parents

The doctor needs to be notified if:

- There are signs of uncontrolled asthma
- There are difficulties obtaining or using any of the asthma medications that are ordered
- There are any difficult to tolerate side effects to the medications

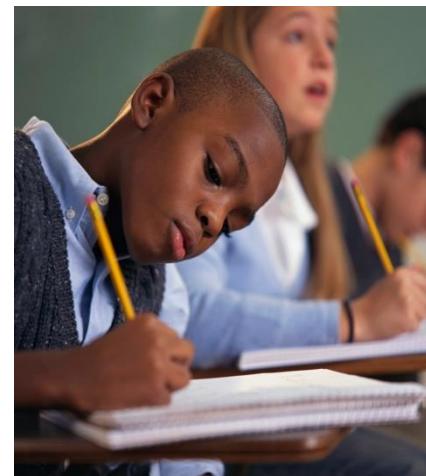
See a specialist if asthma is persistent and uncontrolled

The goal is controlled asthma

Goal: Controlled Asthma

A child with asthma should be able to:

- Sleep through the night without having symptoms
- Prevent asthma episodes
- Have the best possible lung function
- Be active without limitations or having symptoms during exercise, sports, and attendance at school



Resources

- www.choa.org/asthma
- www.epipen4schools.com

Websites that offer free or discounted prescriptions:

www.needymeds.org

www.auvi-q.com

www.pparx.org

www.epipen.com

www.gskforyou.com

Children's Medical Services:

www.dph.georgia.gov/cms-parents-caregivers



Please scan the QR Code to get credit for viewing the video, complete the evaluation and claim the Certificate for CNE contact hours.

(In order to scan the QR code a QR reader has to be downloaded on your device.)



Another option is to click the link below to take the evaluation:

[Evaluation](#)

References

- **The American Academy of Allergy, Asthma & Immunology (2007). Pediatric Asthma: Promoting Best Practice, Guide for Managing Asthma in Children.**
- **The National Institutes of Health, National Heart, Lung and Blood Institute, National Asthma Education and Prevention Program (2007). Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma.**
- **The National Asthma Education and Prevention Program (2014). Managing Asthma: A Guide for Schools.**
- **Centers for Disease Control (CDC), 2013.**
- **Georgia Asthma Surveillance Report 2014.**