

Asthma Friendly School Environments





Our Mission

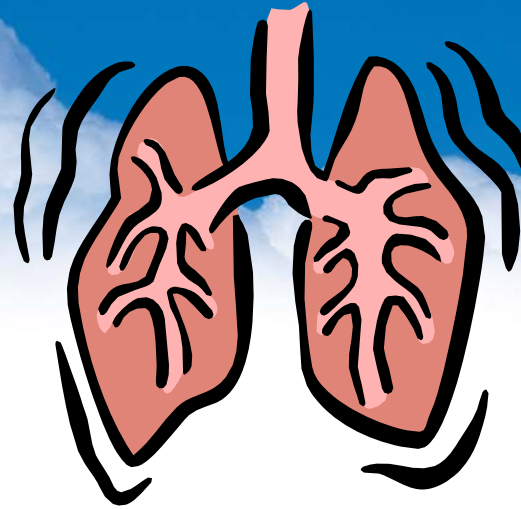
Prevent lung disease and promote lung health in
Mississippi through:

Education

Advocacy

Research

What is Asthma?



Asthma:

Is a life-long disease found in the airways of the lungs, causes swelling and muscle tightening.

Produces frequent symptoms such as shortness of breath, tightness in the chest, wheezing and coughing.

Asthma cannot be cured, but it can be controlled.

Asthma Remains a Serious Health Risk in the US



Every day in America, approximately...

63,000 people miss school or work due to asthma

34,000 people have an asthma attack

5,000 people visit an emergency room due to asthma

1,300 people are admitted to the hospital due to asthma

10 people die from asthma

American Lung Association. Epidemiology and Statistics Unit, Research & Program Services Division. Trends in Asthma Morbidity & Mortality. November 2007. www.lungusa.org. Accessed 2/25/08.

 **AMERICAN LUNG ASSOCIATION.**
Fighting for Air

- Childhood asthma accounts for 12.8 million days missed from school annually
 - The number-one chronic condition causing children to be absent from school and the third highest ranked cause of pediatric hospitalizations in the United States
 - On average, a child with asthma will miss one full week of school each year due to the disease





- Adult asthma accounts for 10.1 million missed workdays annually
- 4th leading cause of missed work days

\$19.7 billion annually

National Burden of Asthma

- **\$14.7 billion** in **direct** costs (prescription medications, hospital care, and physician services)
- **\$5 billion** in **indirect** costs (lost productivity due to missed work or school and premature mortality)

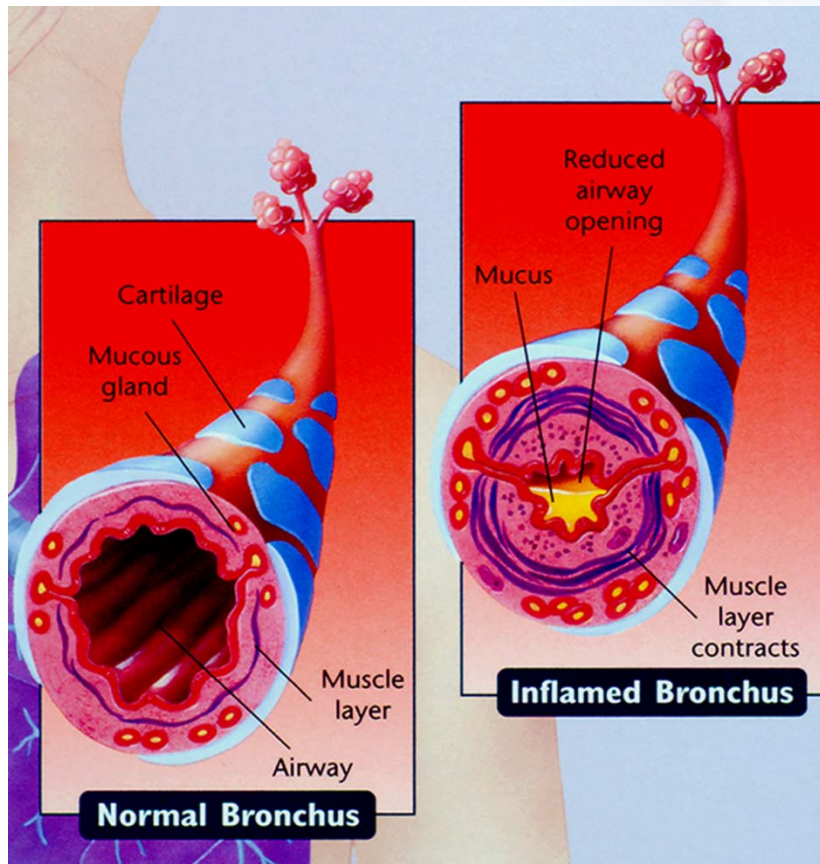




Burden of Asthma in MS

- **1 in every 14 adults have asthma**
 - More women than men (8% v. 5%).
- **1 in every 10 children have asthma**
 - About 2 per classroom.
 - More black children than white children (13% v. 8%).
 - More boys than girls (12% v. 8%).

Acute Reaction to Triggers



1. Irritated airways become more inflamed after exposure to stimuli
2. Muscle layers around airway constrict
3. Airway lining swells
4. Excess mucus builds up in lumen
5. Result: symptoms of cough, wheeze, shortness of breath, chest tightness

Early Signs of Asthma

Symptoms that indicate an asthma episode is occurring

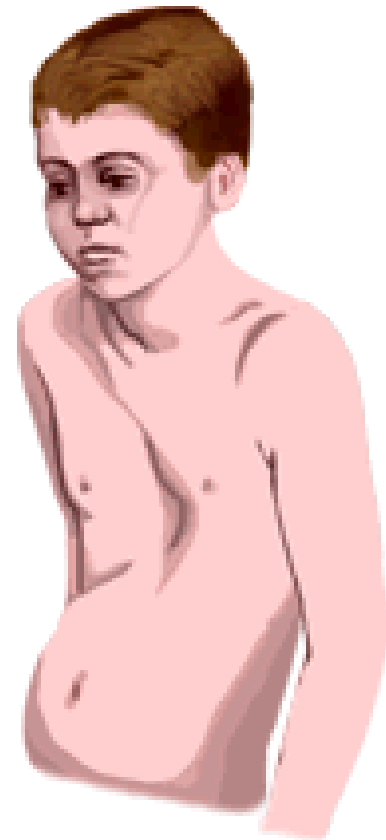
- Coughing
- Wheezing
- Shortness of breath
- Chest tightness and/or pain

Severe asthma symptoms are a life-threatening emergency. They indicate respiratory distress.

Examples of severe asthma symptoms include:

- **Severe coughing**
- **Wheezing**
- **Shortness of breath or tightness in the chest**
- **Difficulty talking or concentrating**
- **Mental deterioration may occur.**
- **Walking causes shortness of breath.**

- Breathing may be shallow and fast, or slower than usual.
- Shoulders may be hunched.
- Nasal flaring may be present.
- Accessory muscle use and retractions may be present.
 - Retractions: Neck area and between or below the ribs moves inward with breathing.



- Skin may be gray or bluish tint, beginning around the mouth or fingernail beds (cyanosis).
- Wheezing may be moderate, loud or absent.
 - The absence of wheezing implies severely compromised airflow.



Environmental Asthma Triggers

Allergens

- Substances that cause you to have an allergic reaction.
- Exposure in a patient who is sensitive increases airway inflammation and symptoms.

Irritants

- Substances that irritate the lungs and cause asthma symptoms.
- Exposure causes increased symptoms or limits airflow.

Common Asthma Triggers: Allergens



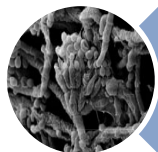
Animal allergens



Dust mites



Cockroach allergens



Indoor fungi



Tobacco smoke

Trigger: Animal Dander



Animal Allergens

All warm-blooded animals produce flakes of skin (dander), feces, urine and dried saliva that can cause allergic reactions.

- Best option - Keep animals out of house
- If you can't keep the pet outside, keep it out of the bedroom and keep the door shut
- Wash hands and clothes after contact with the pet
- Remove upholstered furniture and carpets from the home or isolate the pet in areas without these items



Trigger: Dust Mite



Dust Mites

- Require humidity and human dander to survive, thrive in most areas of the United States but usually not present in high altitudes or arid areas
- High levels are found in bedding, pillows, mattress, upholstered furniture, carpets, clothes and soft toys

IMPORTANT: The patient's bed is the most important source of dust mites that need to be controlled.

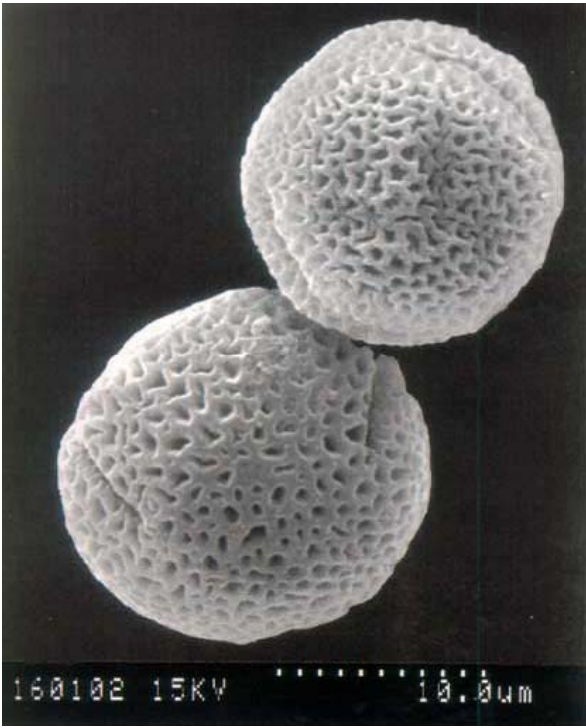
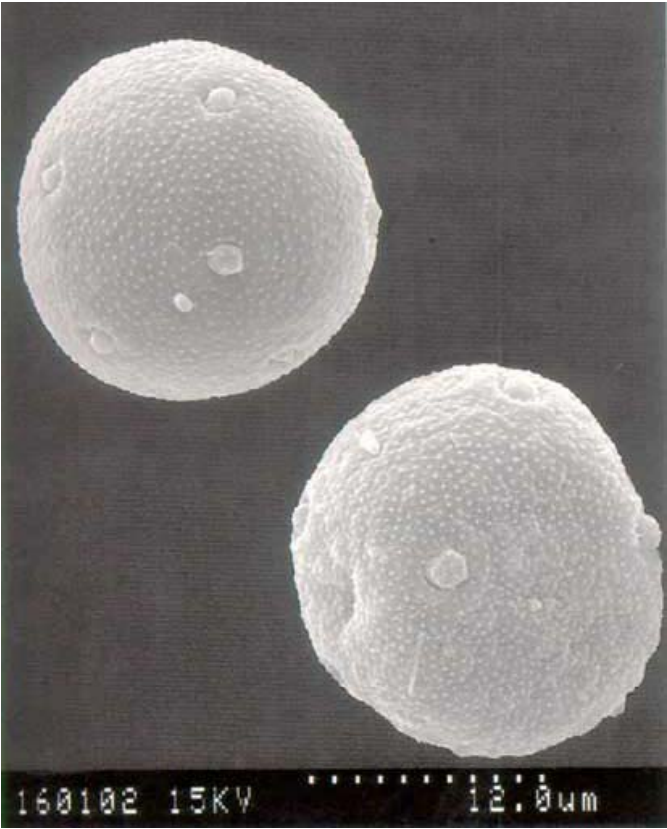


Trigger: Grass, Trees





Trigger: Pollen



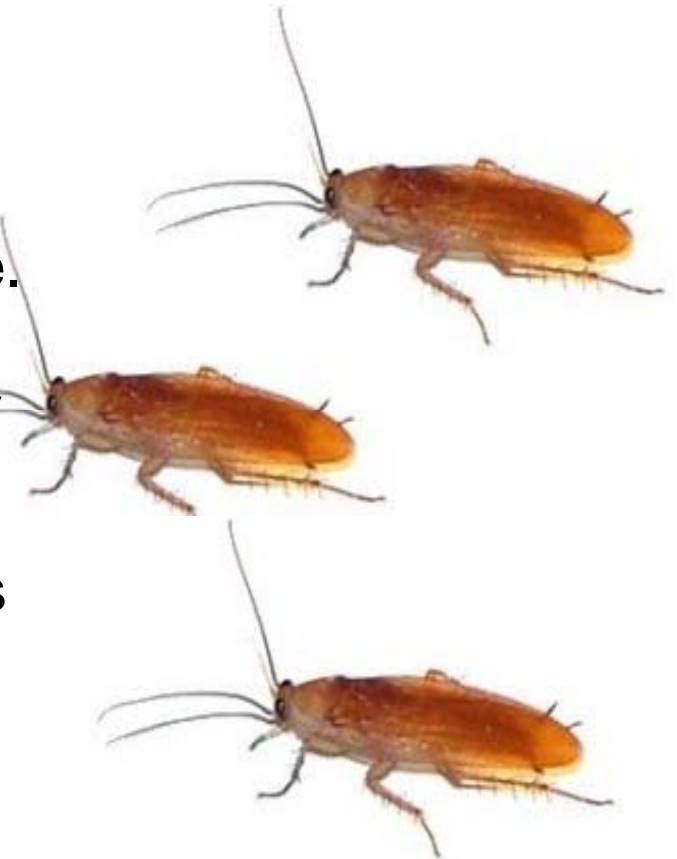
Trigger: Mold



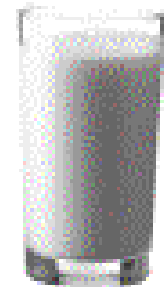
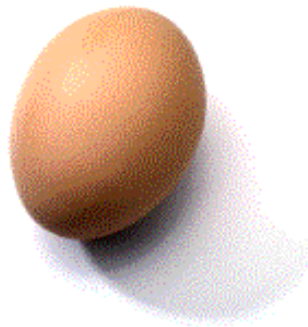
Trigger: Cockroach



- Keep counters, sinks, tables and floors clean and clear of clutter.
- Fix plumbing leaks and other moisture problems.
- Remove piles of boxes, newspapers and other items where cockroaches may hide.
- Seal all entry points.
- Make sure trash in your home is properly stored in containers with lids that close securely; remove trash daily
- Try using poison baits, boric acid or traps first before using pesticide sprays.



Triggers: Food Allergies



Trigger: Smoke



Trigger: Fumes



Trigger: Pollution



Other Asthma Triggers

- Colds, flu, sinus problems
- Exercise
- Bursts of emotion
- Some medicines in sensitive individuals
- Anxiety



Trigger: Colds/Infections





Exercise Induced Asthma (EIA)

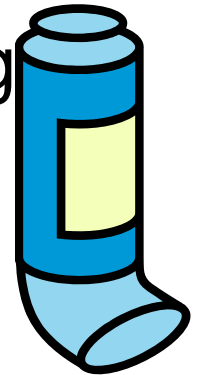
Exercise Induced Bronchospasm (EIB)

Transient narrowing of the airways associated with:

- Physical exertion
- Coughing, wheezing or shortness of breath occurring within 10-15 minutes of starting exercise
- These students require inhalers before exercise

Asthma Medications

- Inhaled corticosteroids (anti-inflammatories): **reduce/prevent airway inflammation** (swelling)
- Bronchodilators: **relax tight airways**
- Combination Medications
- Nebulizer/liquid forms of medicines (breathing treatment)
- Other oral medications



Inhaled Medication Delivery Devices



Metered-Dose Inhaler (MDI)



Dry Powder Inhaler (DPI)

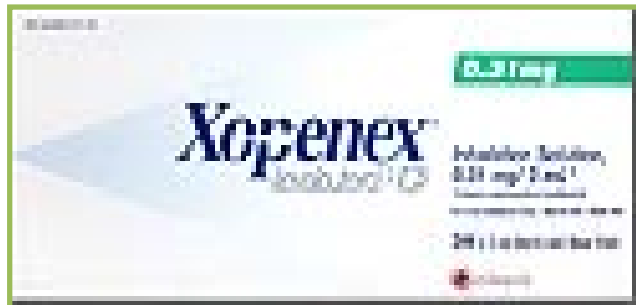


Spacer/
Holding Chamber



Spacer/
Holding Chamber and
Face Mask

Nebulizer Solutions



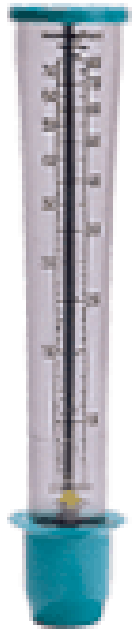
Peak Flow

A peak flow meter is a simple device that measures the air a person can blow during the first second.

A peak flow meter can help a person monitor their asthma symptoms.

It is useful for persons who do not wheeze or can't tell they're having asthma symptoms.

Peak flow meter



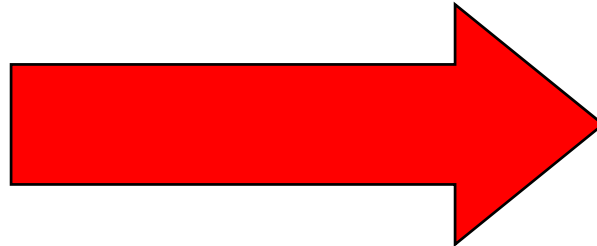
ADAM

Indoor Air Quality Problems:

Pollutant



Pathway

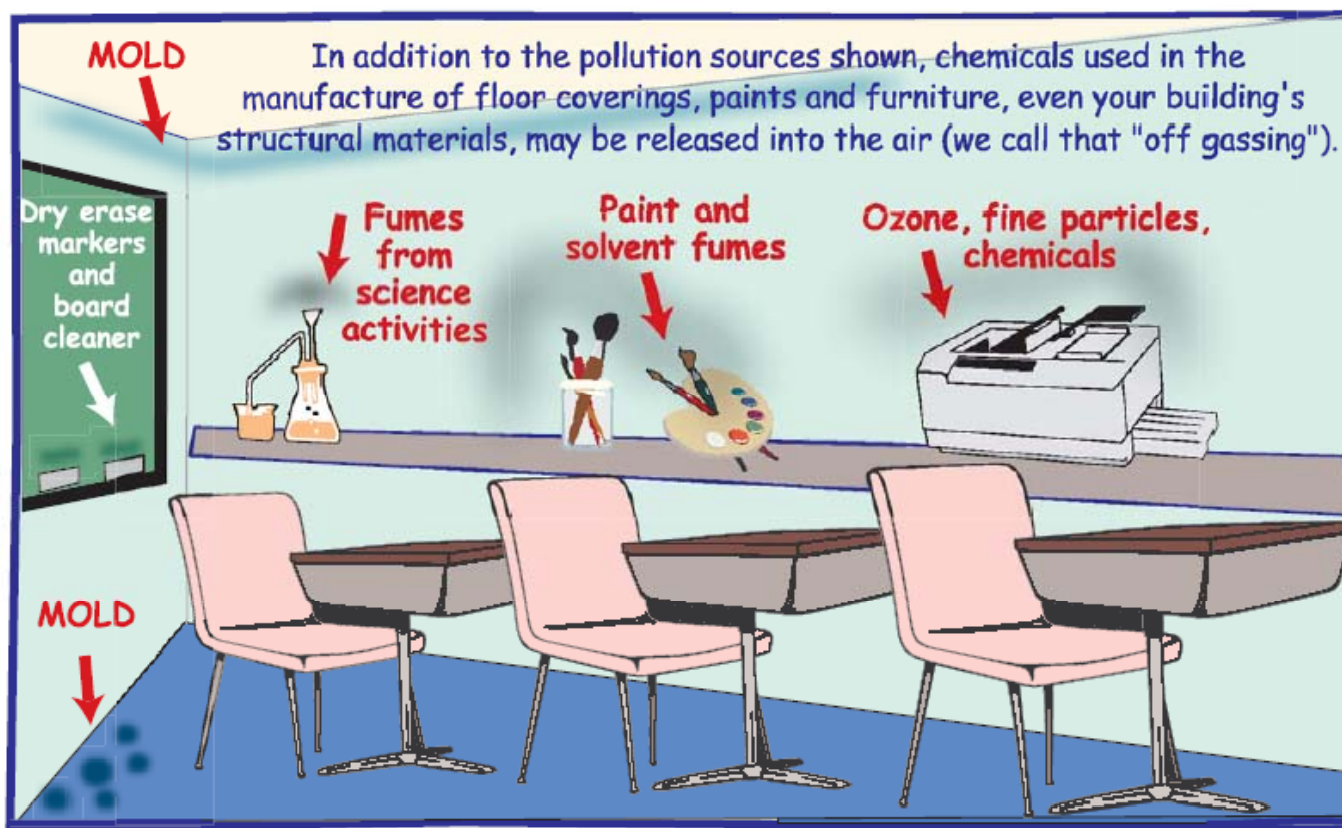


People



Source: Environmental Protection Agency (EPA) Indoor Air Quality Tools for Schools National Symposium, December 2007

What do we add to our air?





How do we improve IAQ?

Simple things first:

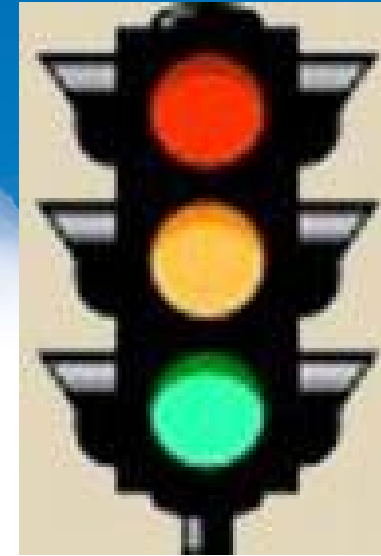
- Stop using scented products & deodorizers
- Dispose of sources
- Unblock vents
- Move sources away from intake vents
- Report problems



Tips for clean indoor air

- Keep dirt out
- Leave classrooms 'ready to clean'
- Clean from the top down
- Select durable easy to clean flooring; maintain/replace carpets
- Clean up spills right away
- Cleaning with all-purpose cleaners removes most germs. Disinfect only in target areas.
- Reduce dust with vacuuming instead of damp mopping
- Breathe easier – clean doesn't have an odor

Asthma Action Plan



Asthma Action Plan


General Information:

■ Name _____

■ Emergency contact _____ Phone numbers _____

■ Physician/Health Care Provider _____ Phone numbers _____

■ Physician Signature _____ Date _____



Severity Classification

Mild Intermittent Moderate Persistent

Mild Persistent Severe Persistent

Triggers

Colds Smoke Weather

Exercise Dust Air pollution

Animals Food

Other _____

Exercise

1. Pre-medication (how much and when) _____

2. Exercise modifications _____

Green Zone: Doing Well **Peak Flow Meter Personal Best =** _____

Symptoms

- Breathing is good
- No cough or wheeze
- Can work and play
- Sleeps all night

Peak Flow Meter
More than 80% of personal best or _____

Control Medications	How Much to Take	When To Take It
Medicine _____	_____	_____
_____	_____	_____
_____	_____	_____

Yellow Zone: Getting Worse **Contact Physician if using quick relief more than 2 times per week.**

Symptoms

- Some problems breathing
- Cough, wheeze or chest tight
- Problems working or playing
- Wake at night

Peak Flow Meter
Between 50 to 80% of personal best or _____ to _____

Continue control medicines and add:	How Much to Take	When To Take It
Medicine _____	_____	_____
_____	_____	_____
_____	_____	_____

IF your symptoms (and peak flow, if used) return to Green Zone after one hour of the quick relief treatment, THEN

Take quick-relief medication every 4 hours for 1 to 2 days

Change your long-term control medicines by _____

Contact your physician for follow-up care

IF your symptoms (and peak flow, if used) DO NOT return to the GREEN ZONE after 1 hour of the quick relief treatment, THEN

Take quick-relief treatment again

Change your long-term control medicines by _____

Call your physician/Health Care Provider within _____ hours of modifying your medication routine

Red Zone: Medical Alert **Ambulance/Emergency Phone Number:** _____

Symptoms

- Lots of problems breathing
- Cannot work or play
- Getting worse instead of better
- Medicine is not helping

Peak Flow Meter
Between 0 to 50% of personal best or _____ to _____

Continue control medicines and add:	How Much to Take	When To Take It
Medicine _____	_____	_____
_____	_____	_____
_____	_____	_____

Go to the hospital or call for an ambulance if

Still in the red zone after 15 minutes

If you have not been able to reach your physician/health care provider for help

Call an ambulance immediately if the following danger signs are present

Trouble walking/talking due to shortness of breath

Lips or fingernails are blue

Green zone - when symptoms are controlled

Yellow zone – when symptoms are present

Red zone – when symptoms do not go away or get worse

You Can Die From Asthma

Health Messages:

- Deaths from asthma do occur although they are rare
- Individuals who have died did not have asthma under control
- Working closely with your physician to develop a tailored plan and following it in a self-regulated manner will help you keep asthma under control.

Asthma Medicines are Safe

Health Messages:

- Medicines for asthma are safe when used as directed and with patient monitoring effects
- Corticosteroids are not the same as steroids that athletes take and do not hold the same dangers.

Asthma is NOT all in Your Head

Health Messages:

- Asthma is a physiological condition
- There is a genetic basis for asthma
- Stress can make asthma symptoms worse, but does not cause an individual to develop asthma
- An individual with asthma is not psychologically impaired.



Can You Outgrow Asthma?

Health Messages:

- Half of all children with asthma have no symptoms by the time they reach age fifteen
- Asthma symptoms can reappear at any age.

Treat Asthma Even When Symptoms Are Absent


Actions:

- Asthma is a chronic disease, symptoms are not always present
- Inflammation in the disease occurs with exposure to triggers
- Two types of medications- those that control flare-ups and those that are used on a continuing basis to prevent inflammation
- Student can expect to be symptom free when asthma is under control.



What to do if Asthma Episode Occurs

- Review the child or adult's asthma action plan.
- Notify school nurse or school administrator.
- Have student sit upright.
- Administer prescribed medication:
 - Quick-Relief Inhaler or Nebulizer (Albuterol)
- Reassure student to keep calm.
- Deep, controlled breathing



We will breathe easier when the air in every
American community is clean and healthy.

We will breathe easier when people are free from the addictive
grip of cigarettes and the debilitating effects of lung disease.

We will breathe easier when the air in our public spaces and
workplaces is clear of secondhand smoke.

We will breathe easier when children no longer
battle airborne poisons or fear an asthma attack.

Until then, we are fighting for air.



Other Resources

- Asthma lesson plans

www.healthyschoolsms.org

- Office of Healthy Schools

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