

# ASTHMA & ENVIRONMENTAL CONTROL

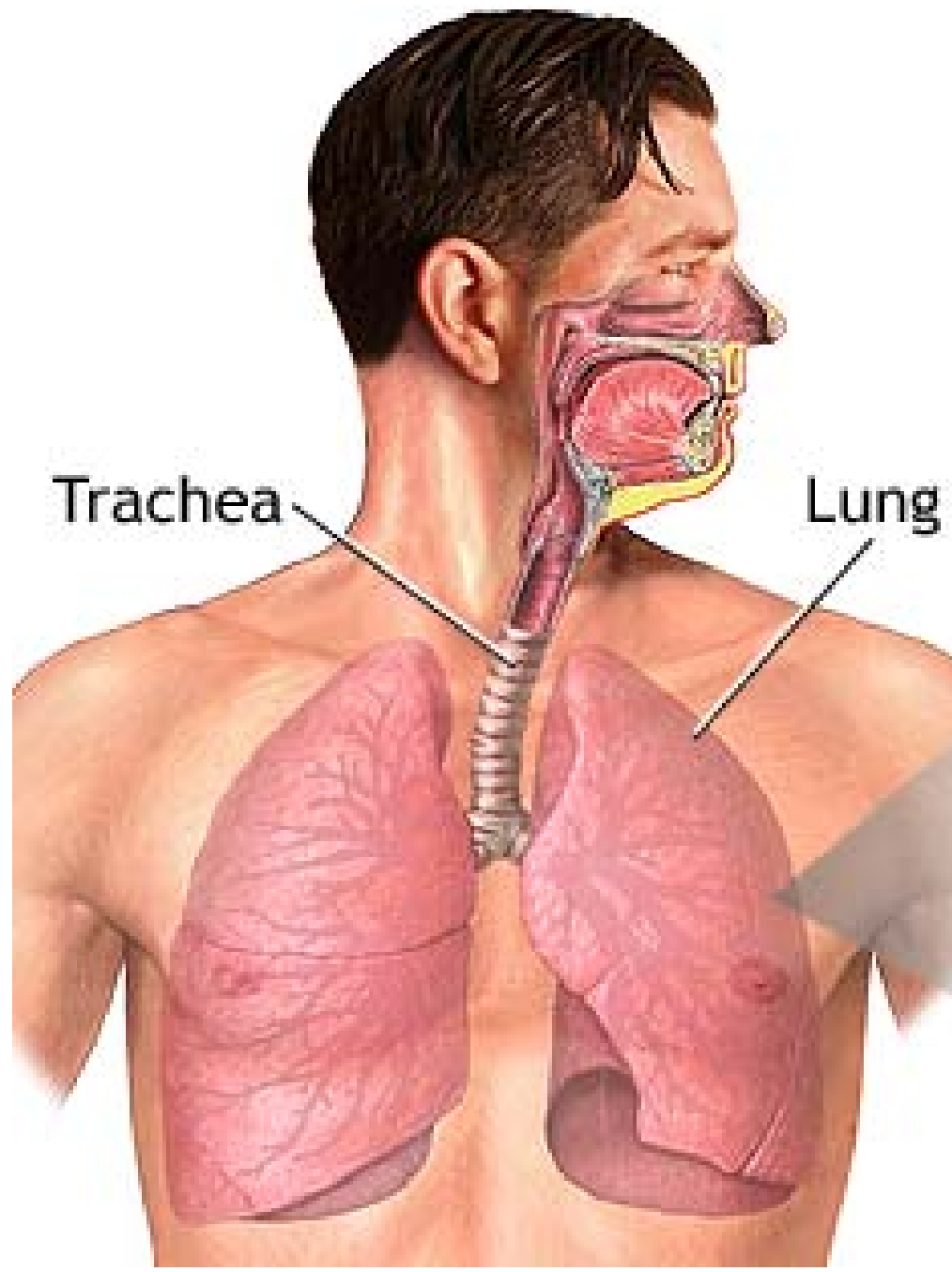
*Robin Costley, CRT, AE-C*

Certified Asthma Educator

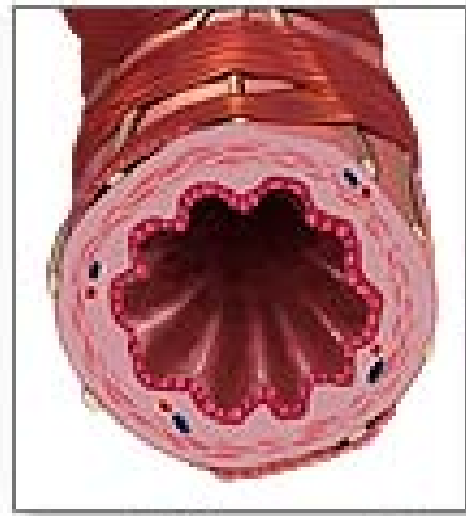
Coalition Manager

Marion County Public Health Department

Asthma Alliance of Indianapolis



Asthmatic bronchiole



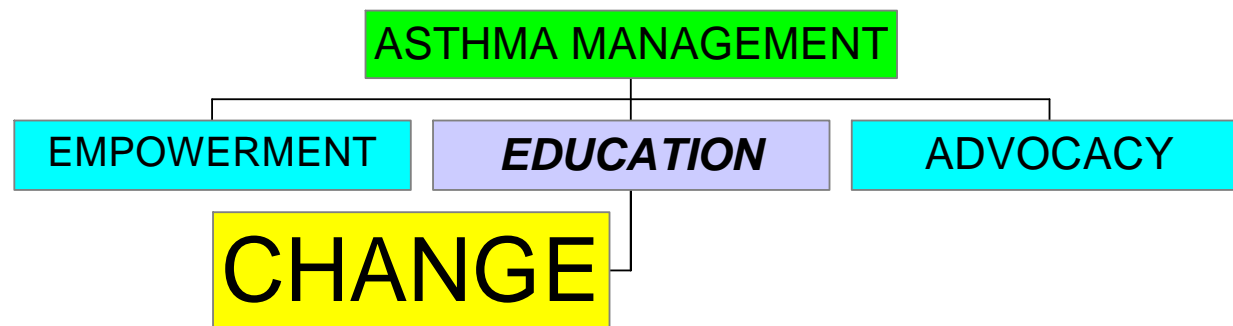
Normal bronchiole

# Components of Asthma Management

<p><b><u>Education</u></b></p> <ul style="list-style-type: none"> <li>•Family</li> <li>•Adult</li> <li>•Schools</li> <li>•Professionals</li> <li>•Public</li> </ul>	<p><b><u>Psychosocial</u></b></p> <ul style="list-style-type: none"> <li>•Barriers</li> <li>•Social Support</li> <li>•Finances</li> </ul>	<p><b><u>Quality of Care</u></b></p> <ul style="list-style-type: none"> <li>•Guidelines</li> <li>•Partnership</li> <li>•Outcomes</li> <li>•Referral Care</li> <li>•Public</li> </ul>	<p><b><u>Environment</u></b></p> <ul style="list-style-type: none"> <li>•Air Pollution</li> <li>•Smoke Exposure</li> <li>•Viral illness</li> <li>•Allergens</li> </ul>
<p><b><u>Triggers</u></b></p> <ul style="list-style-type: none"> <li>•Irritants</li> <li>•Allergy</li> <li>•Weather Changes</li> <li>•URI's</li> <li>•Exercise</li> </ul>	<p><b><u>Managed Care</u></b></p> <ul style="list-style-type: none"> <li>•Access</li> <li>•Referrals</li> <li>•Cost</li> </ul>	<p><b><u>Host Intrinsic Factors</u></b></p> <ul style="list-style-type: none"> <li>•Genetic</li> <li>•Prematurity</li> <li>•Smoke exposure</li> </ul>	<p><b><u>Beliefs</u></b></p> <ul style="list-style-type: none"> <li>•Cultural</li> <li>•Personal</li> <li>•Health</li> <li>•Public Awareness</li> </ul>



## A PATTERN OF CHANGE



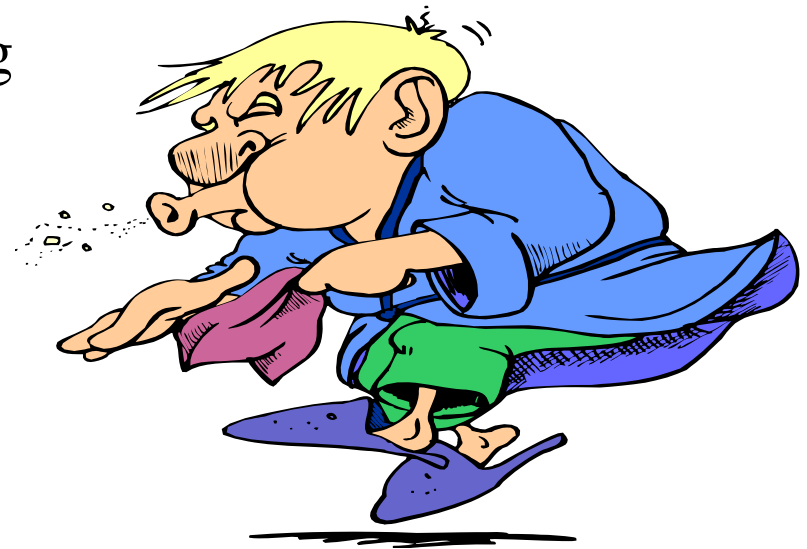
It is extremely important to recognize and respond quickly to early warning signs.

The faster you respond the easier it will be to prevent severe attacks.



# Common Symptoms / Warning Signs

- Cough
- Be Short Of Breath or fast breathing
- Chest tightness
- Wheeze
- Dry cough
- Feeling tired
- Itchy throat
- Trouble sleeping
- Headache
- Stomachache
- Stuffy nose, watery eyes/ dark circles

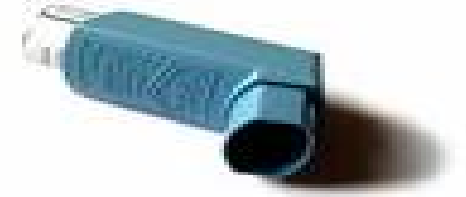


# Emergency Signs

- Trouble walking or talking
- Hunched over
- Struggling to breathe
- Lips or fingernails are gray or blue



# Medications to Manage Asthma



## Quick relief- Rescue

### Albuterol, Ventolin, Proventil

- Relaxes muscles that tighten around airways
- Help stop flare-ups once they have started.
- Help prevent asthma symptoms caused by exercise.

## Long term controller

### Flovent, QVAR, Pulmicort, Advair

- Prevent or reduce airway inflammation
- Protect the airways from irritants and allergens.
- Will NOT stop a flare- up once it has begun.
- These medications use **corticosteroids**. These are not the same as anabolic steroids that bodybuilders use. They do not have the same side effects.

# Medication Devices

## Metered dose inhaler

- 80% more medication delivered with a spacer
- Children can take with a spacer with mask
- Important to take correctly to be sure you are getting the medicine



# Nebulizer Treatments

- Takes ~ 5-8 minutes to complete
- Mouthpiece or mask
- Not as portable
- Same dosages with either device.





ADVAIR DISKUS is  
convenient to use.



## Dry Powder Inhalers (DPI's)

### Advair, Pulmocort Turbohaler, Serevent

- Use tiny grains of powder to dispense medication.
- Don't require spacers
- Often have counters that track # of doses used.
- Don't all work in the same way. Be sure you know how to use yours correctly.

# Environmental Control

- *Environmental interventions can reduce or eliminate triggers for those that are already diagnosed with asthma. These are also helpful practices to promote good health for all.*
- *Consider environmental factors that may affect someone's asthma. In some cases triggers may be more readily apparent than others.*
- *The list of triggers is not meant to be all inclusive. Rather we will talk about triggers that appear to be most prevalent and for which there is the most evidence of impact.*

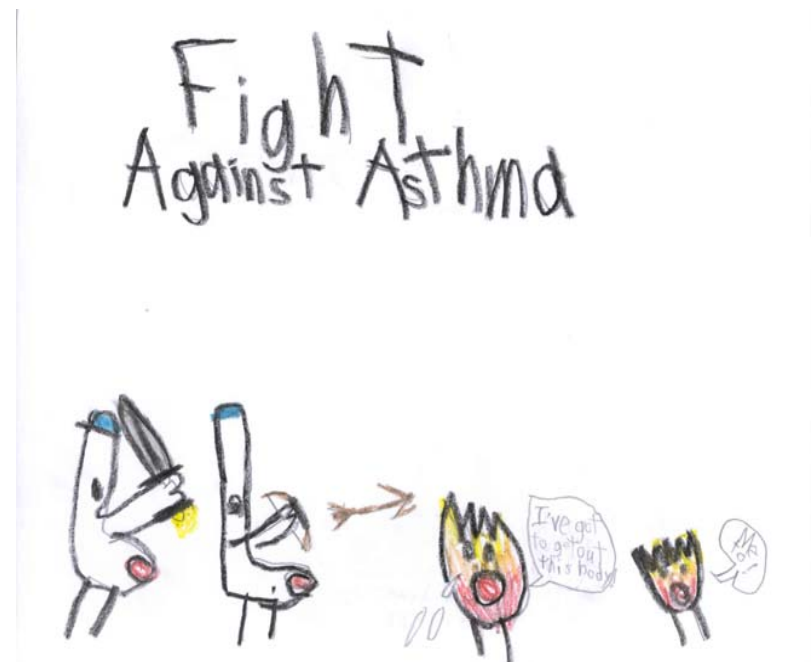


*These things make it  
hard for me to breathe!*



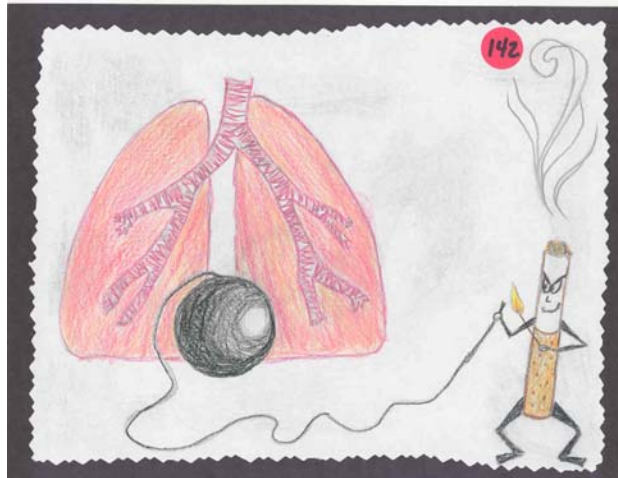
# Avoiding Triggers

- It is very important to know what your triggers are and attempt to avoid them.
- If they can't be avoided then a dose of prescribed medicine can prevent symptoms.



## Indoor Environmental Triggers of Asthma

- Eliminate tobacco smoke
- Use good housekeeping practices to control particles
- Install an exhaust fan close to the source of contaminants and vent to the outside
- Properly ventilate the room where a fuel-burning appliance is being used
- Ensure that wood stove doors are tight-fitting
- Ensure that fireplaces are properly vented
- Never use a gas heating appliance as a source of heat



- ⑩ Open windows especially when indoor pollutant sources are increased. (This must be balanced against concern of mold or other plant allergens and outdoor air pollution.)
- ⑩ Parents should change clothes prior to returning from work if they work around strong smelling chemicals, paint or other toxic substances.
- ⑩ Avoid strong odors and maximize use of products and materials that emit irritants such as smoke, strong perfumes, talcum powder, hair sprays, cleaning products, paint fumes, sawdust, chalk dust, air fresheners and insect sprays.



# Tobacco Smoke



## **Cigarette smoke contains many toxic chemicals and irritants.**

- Children exposed to smoke have increased asthma exacerbations and other problems, including lower respiratory tract infections and middle ear infections.
- One can develop asthma if exposed to second hand smoke
- Infants have an increased risk of Infant Death Syndrome
- Simply smoking outside is not enough to limit the harm to children from tobacco smoke. Smoke settles in clothes, hair, car upholstery and furniture.

# Control of Smoke

- Seek support to quit smoking
- Smoking cessation 1-800-QUIT
- Keep your home and car smoke free
- Choose smoke-free childcare and social settings
- Seek smoke-free environments in restaurants, theaters, and hotel rooms
- If you choose to smoke, do not smoke around someone with asthma



# Cockroach



Eradication can be very difficult , especially in apartment buildings, and it is often temporary.

Roaches follow food and water sources in your house.



# Cockroach Control

- Clean up all food items/ crumbs/ spills ASAP
- Store food and trash in closed containers
- Limit spread of food around the house / bedroom
- Fix water leaks under sinks
- Mop kitchen floor at least once weekly
- Clean counter tops daily
- Take garbage out daily
- Check for and plug up crevices outside your house that roaches may enter
- USE IPM: least toxic methods first
- Use boric acid powder under stoves and other appliances
- Use bait stations and gels. Be sure to read instructions carefully
- Avoid using sprays inside the house, especially near places children crawl, play or sleep
- NEVER attempt to use industrial strength pesticide sprays that require dilution





# DUST MITES

- Tiny microscopic relatives of the spider that live on mattresses, bedding, upholstered furniture, carpets, curtains.
- These tiny creatures feed on the flakes of skin that people shed daily, and they thrive in warm humid environments.
- No matter how clean a house is, dust mites cannot be totally eliminated.
  - Focus on where you sleep



# Dust Mite Control

- Wash bedding weekly to remove allergen
- Replace wool or feathered bedding with synthetic materials that can withstand repeated hot water washing
- Either remove or wash & thoroughly dry stuffed toys weekly
- Move stuffed toys away from pillow
- Vacuum twice weekly/ HEPA filter or dbl. Layered micro-filter bag (when child is not around)
- Use damp mop or rag to remove dust, dry cloth just stirs up dust mite allergens
- Avoid use of humidifiers
- AVOID USE OF ozone generators and certain ionic air cleaners which can actually generate harmful ozone

# Mold



- Mold spores both indoors and outdoors
- Indoor they are in dark, warm humid environments such as basements, attics, bathrooms, laundry rooms
- Also found in air conditioners, humidifiers, refrigerator drip trays and garbage pails



# Mold Control

- Check faucets, pipes and ductwork for leaks and repair ASAP
- Control indoor humidity
  1. Use a dehumidifier or air conditioner to maintain indoor relative humidity below 50%. **KEEP CLEAN**
  2. Do not use a humidifier
  3. Vent bathrooms and clothes dryers to the outside
  4. Install and use exhaust fans in the kitchen, bath and damp areas
  5. Avoid carpet and wallpaper in rooms prone to dampness
  6. When 1<sup>st</sup> turning on home or car air conditioners, have person with asthma leave the room or drive with the windows open to allow mold spores to disperse
  7. Remove decaying debris from yard, roof and gutters
  8. People with asthma should avoid raking leaves, mowing lawns, or working with peat, mulch, hay or dead wood if allergic to mold spores
  9. Clean with detergent and scrub brush. **Keep CLEAN & DRY**
  10. For extensive mold ( area 3ft. X 3 ft.) professional removal is recommended
  11. Clean up mold and dry surfaces before painting or caulking

# Molds & Moisture



- Find source of water leak .  
Repair and dry ASAP
- Clean with detergent and water
- Outdoor molds- keep windows closed. Stay inside especially during midday and afternoon.
- Ask doctor about increasing long term control meds during allergy season

# Animal Allergens

## Only if allergic to the animal.

- Finding a new home for indoor cats, dogs, and pet rodents
- Keep pets outside
- Out of bedroom
- Remove carpets
- Keep pets off furniture and out of cars
- Bathing pet has been shown to decrease allergens. **IT MUST BE DONE** twice a week to be effective.
- If rats or mice- use the least toxic extermination method such as traps and baits



# Combustion By-Products



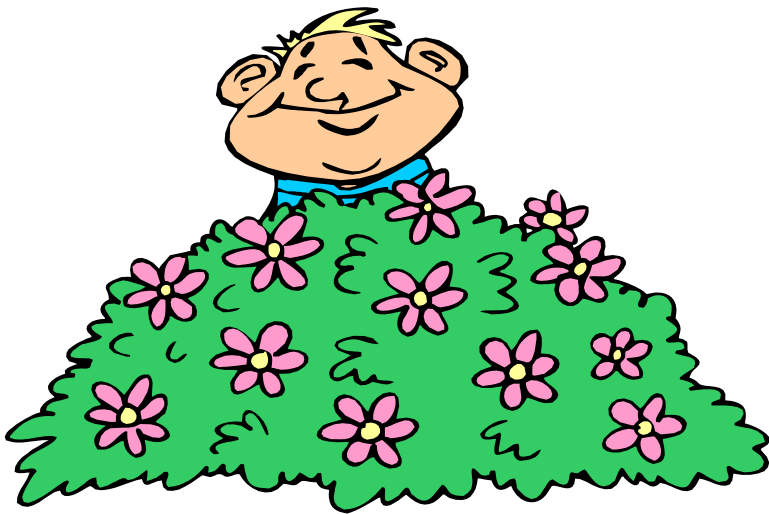
- Nitrogen Dioxide- an odorless gas that can irritate your eyes, nose and throat and may cause shortness of breath.
- Gas cooking appliances
- Fireplaces and wood stoves
- Un-vented kerosene and gas space heaters

# Solvents and other Chemical Irritants

- Cleaning products
- Building materials that can volatize during the 1-2 year period after new construction



# OUTDOOR Environmental Triggers



A wide range of toxic chemicals from industrial or vehicle pollution outdoors

- **Ozone-** found in smog
- **Particle pollution-** found in haze, smoke, and dust

# Components of Outdoor Air Pollution



- Pollen, weeds, grasses & trees
- Monitor AQI levels and reduce your outdoor activities when the AQI is in unhealthy range
- AQI index

If your symptoms are worse or if he/ she requires more rescue medication the day after AQI levels are in the unhealthy range, contact your HCP

- Use HEPA filters in household vents
- Reduce use of candles, wood burning stoves, and fireplaces
- If particle pollution levels are higher outdoors, do not vacuum the floor since this increases particle levels indoors
- Stay away from exhaust pipe of idling school buses, trucks and cars
- DO YOU live within 300 yards of a major roadway or highway? An area where trucks or other vehicles idle? A major industry with smokestacks?



# WHAT IF...?



- You make changes that improve **your** health?
- You make changes that improve **your families** health?
- You make changes to improve the health of **your community**?

## **How can we help you?**

- Free asthma workshops to schools and other community organizations
- Free home visits to help remove triggers from your home
- Assistance in getting free asthma management tools
- Resources

# Asthma Referral Services

- Unique asthma referral service for Public Health Nurses, Indoor Air Specialist, Asthma Educator, Social Worker, Insurance coverage specialist, and smoking cessation services
- Coaches Clipboard
- **ALL FREE OF CHARGE**

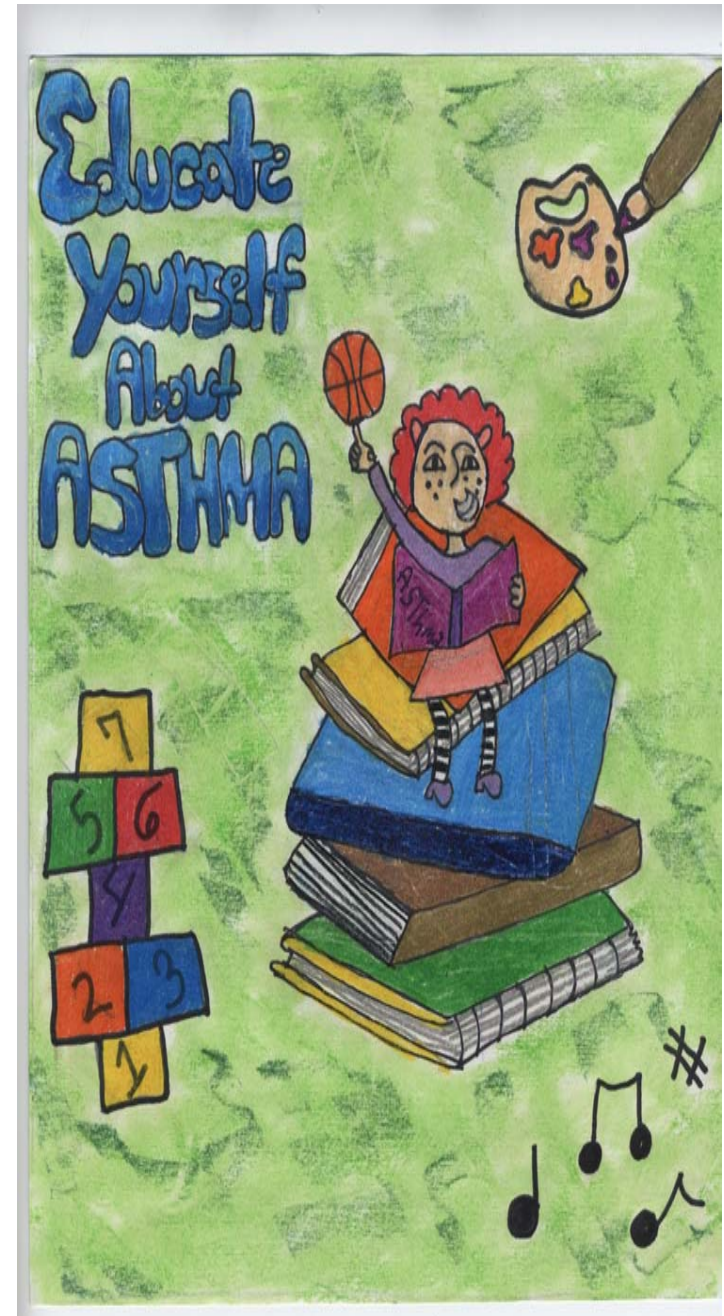
To contact us...

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**Website: [www.asthmaindy.org](http://www.asthmaindy.org)**





**Asthma Alliance** of Indianapolis  
a coalition serving the needs of the Indianapolis community

Thank you for your time.  
Please don't hesitate to call us if you  
have any questions or concerns.



**MARION COUNTY**  
**PUBLIC**  
**HEALTH**  
**DEPARTMENT**

**Prevent. Promote. Protect.**