

# Asthma Basics



## **Tribal Environmental Professionals: *Taking Action on Asthma***

June 10, 2010

Indoor Air Quality (IAQ)



# Asthma Fact or Fiction?

- ☐ It is contagious.
- ☐ It is only an acute disease, and you can outgrow it.
- ☐ It always limits normal activities.
- ☐ It limits a child's ability to fully participate in sports.



# Presentation Overview

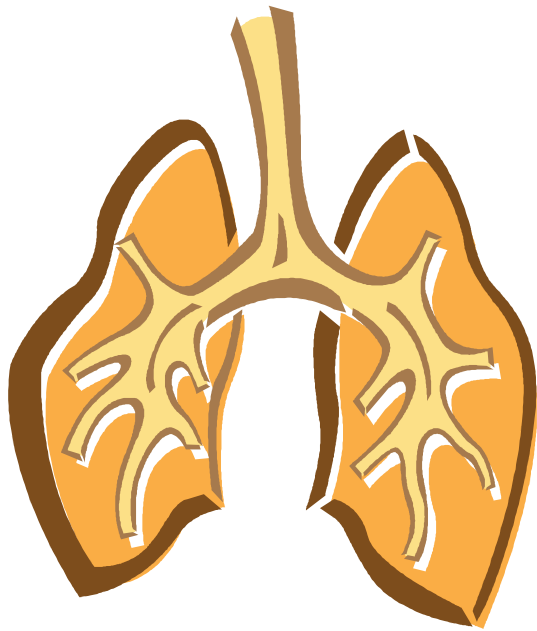
- What is asthma?
- How does asthma affect tribal communities?
- What triggers asthma?
- What can I do?



# What is Asthma?

Asthma is a condition that:

- Is chronic.
- Produces recurring episodes of breathing problems.
- Is potentially life-threatening.
- Can occur at any age.
- Is not contagious.
- Cannot be cured, but can be controlled.





# Asthma in Tribal Communities

*Protecting the health of the next generation.*

- 12% of people living in tribal communities – nearly double the current national average of 7%.<sup>1</sup>
- 13.0% of American Indian/Alaska Native children compared to 8.9% of children in the U.S.<sup>2</sup>



<sup>1</sup> CDC. Surveillance for asthma---United States, 1980--1999. In: CDC Surveillance Summaries (March 29). MMWR 2002;51(No. SS-1).

<sup>2</sup> Asthma Prevalence Among US Children in Underrepresented Minority Populations: American Indian/Alaska Native, Chinese, Filipino, and Asian Indian. Brim, Rudd, Funk, and Callahan. PEDIATRICS: 122(1). July 2008, pp. e217-e222.



# What are the Symptoms of Asthma?



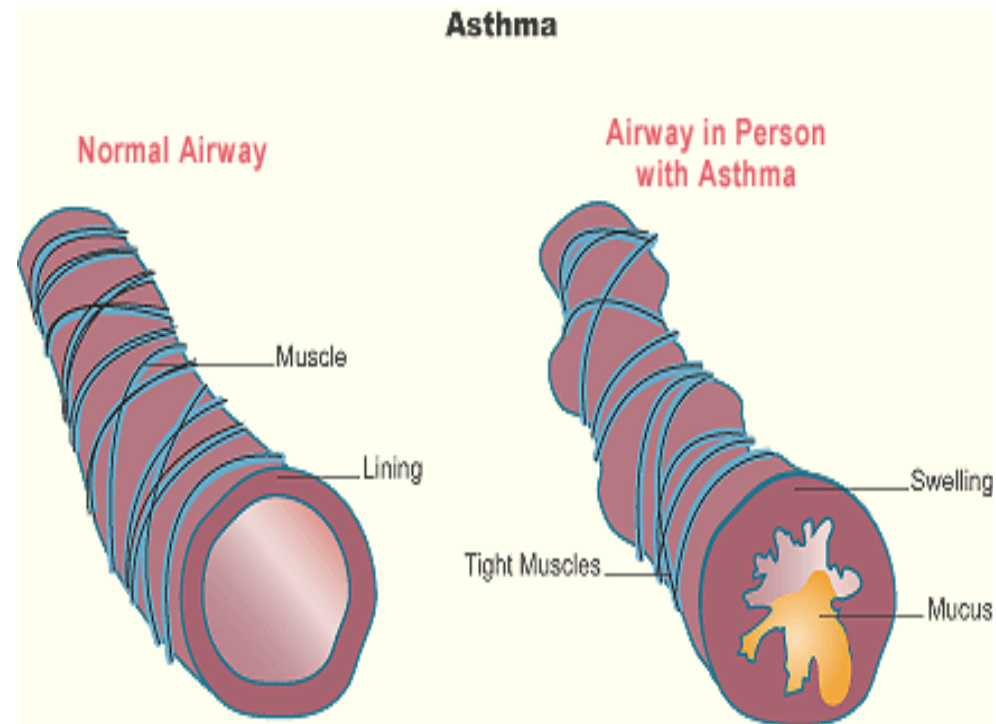
- Shortness of breath
- Wheezing
- Tightness in the chest
- Coughing
- Waking at night with any of the above symptoms\*

\* a key marker of uncontrolled asthma



# What Happens During an Episode of Asthma?

- The lining of the airways becomes narrow and easily irritated due to inflammation.
- The airways produce a thick mucus.
- The muscles around the airways tighten and make airways narrower.





# What Can Make Asthma Worse?

Not all factors affect all people. It's important to identify what affects a particular person's asthma.

- Exercise (*Exercise Induced Asthma*)
- Infections in the upper airways, such as colds
- Changes in weather and temperature
- Physical expressions of strong feelings (crying or laughing hard, yelling)







# What Can Make Asthma Worse?

## Allergens such as:

- Dust mites
- Cockroaches
- Furred and feathered animals
- Pollens (grass and trees)
- Molds (indoor and outdoors)
- Nitrogen dioxide

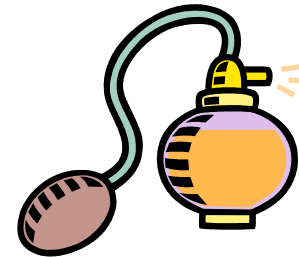




# What Can Make Asthma Worse?

## Irritants such as:

- Environmental tobacco smoke
- Air pollution
- Scented products
- Strong fumes or odors





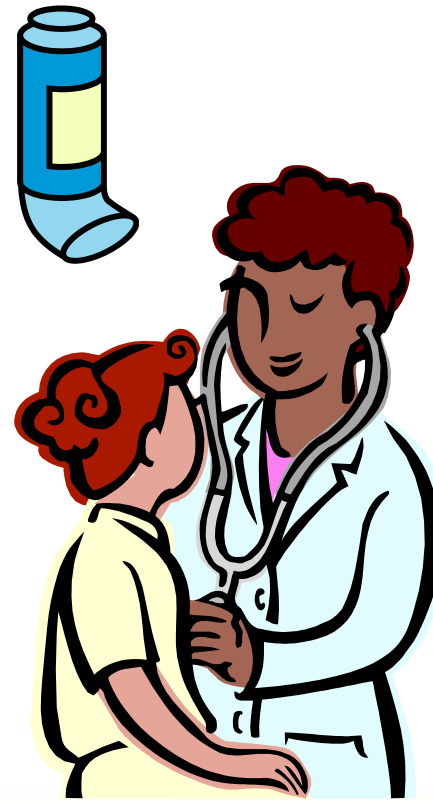
# Is There A Cure For Asthma?

- Asthma cannot be cured, but it can be controlled.
- Most people with asthma should be able to live healthy, active lives with minimal symptoms.
- There are many actions you can take to reduce the burden of asthma in your community.



# How Is Asthma Controlled?

- Follow an individualized, written asthma action plan.
- Reduce or eliminate exposure to factors (such as those in the indoor and outdoor environments) that can cause asthma symptoms. Fill out an environmental history.
- Encourage and support use of medication as prescribed.





## Asthma Action Plan

For: \_\_\_\_\_ Doctor: \_\_\_\_\_ Date: \_\_\_\_\_  
 Doctor's Phone Number: \_\_\_\_\_ Hospital/Emergency Department Phone Number: \_\_\_\_\_

### GREEN ZONE

#### Doing Well

- No cough, wheezes, chest tightness, or shortness of breath during the day or night
- Can do usual activities

And, if a peak flow meter is used,

**Peak flow:** more than \_\_\_\_\_  
 (80 percent or more of my best peak flow)

My best peak flow is: \_\_\_\_\_

Take these long-term control medicines each day (include an anti-inflammatory).

Medicine	How much to take	When to take it
_____	_____	_____
_____	_____	_____
_____	_____	_____
Before exercise	<input type="checkbox"/> _____ <input type="checkbox"/> 2 or <input type="checkbox"/> 4 puffs _____	5 to 60 minutes before exercise

### YELLOW ZONE

#### Asthma Is Getting Worse

- Cough, wheeze, chest tightness, or shortness of breath, or
- Waking at night due to asthma, or
- Can do some, but not all, usual activities

-Or-

**Peak flow:** \_\_\_\_\_ to \_\_\_\_\_  
 (50 to 79 percent of my best peak flow)



**First** Add: quick-relief medicine—and keep taking your GREEN ZONE medicine.

\_\_\_\_\_ ☐ 2 or ☐ 4 puffs, every 20 minutes for up to 1 hour  
 (short-acting beta<sub>2</sub>-agonist) ☐ Nebulizer, once



**Second** If your symptoms (and peak flow, if used) return to GREEN ZONE after 1 hour of above treatment:

☐ Continue monitoring to be sure you stay in the green zone.

-Or-

If your symptoms (and peak flow, if used) do not return to GREEN ZONE after 1 hour of above treatment:

☐ Take: \_\_\_\_\_ ☐ 2 or ☐ 4 puffs or ☐ Nebulizer

(short-acting beta<sub>2</sub>-agonist)

☐ Add: \_\_\_\_\_ mg per day For \_\_\_\_\_ (3–10) days

(oral steroid)

☐ Call the doctor ☐ before/ ☐ within \_\_\_\_\_ hours after taking the oral steroid.

### RED ZONE

#### Medical Alert!

- Very short of breath, or
- Quick-relief medicines have not helped, or
- Cannot do usual activities, or
- Symptoms are same or get worse after 24 hours in Yellow Zone

-Or-

**Peak flow:** less than \_\_\_\_\_  
 (50 percent of my best peak flow)

Take this medicine:

☐ \_\_\_\_\_ ☐ 4 or ☐ 6 puffs or ☐ Nebulizer  
 (short-acting beta<sub>2</sub>-agonist)

☐ \_\_\_\_\_ mg  
 (oral steroid)

Then call your doctor NOW. Go to the hospital or call an ambulance if:

- You are still in the red zone after 15 minutes AND
- You have not reached your doctor.

**DANGER SIGNS** ■ Trouble walking and talking due to shortness of breath

■ Lips or fingernails are blue

■ Take ☐ 4 or ☐ 6 puffs of your quick-relief medicine AND

■ Go to the hospital or call for an ambulance \_\_\_\_\_ NOW!  
 (phone)



# What Actions Can I Take?

- Reduce triggers in the home.
  - Use the EPA Home Environment Checklist.
  - Example Actions:
    - ✓ Reduce exposure to dust mites by regularly washing bedding in hot water and drying completely.
    - ✓ Dry damp or wet items within 24-48 hours to avoid mold growth.
- Encourage the use of asthma management plans.

[http://www.epa.gov/asthma/pdfs/home\\_environment\\_checklist.pdf](http://www.epa.gov/asthma/pdfs/home_environment_checklist.pdf)



# ASTHMA HOME ENVIRONMENT

## ☒ CHECKLIST

Home visits provide an opportunity to educate and equip asthma patients with the tools to effectively manage their disease in concert with a physician's care. This checklist—designed for home care visitors—provides a list of questions and action steps to assist in the identification and mitigation of environmental asthma triggers commonly found in and around the home. The checklist is organized into three sections—building information, home interior and room interior. The room interior is further subdivided by categories (such as bedding and sleeping arrangements, flooring, window treatments, and moisture control). This will allow the home care visitor to focus on the specific activities or things in a room—in particular the asthma patient's sleeping area—that might produce or harbor environmental triggers. The activities recommended in this checklist are generally simple and low cost. Information on outdoor air pollution follows the checklist. The last page includes information on U.S. Environmental Protection Agency (EPA) resources and an area for the home care visitor to record a home visit summary.

If the patient's sensitivities to allergens (such as dust mites, pests, warm-blooded pets and mold) and irritants (such as secondhand smoke and nitrogen dioxide) are known, the home care visitor should begin by focusing on relevant areas. This checklist covers the following allergens and irritants, which are commonly found in homes. Information is also provided on chemical irritants—found in some scented and unscented consumer products—which may worsen asthma symptoms.

### Dust Mites

**Triggers:** Body parts and droppings.  
**Where Found:** Highest levels found in mattresses and bedding. Also found in carpeting, curtains and draperies, upholstered furniture, and stuffed toys. Dust mites are too small to be seen with the naked eye and are found in almost every home.

### Pests (such as cockroaches and rodents)

**Triggers:** Cockroaches – Body parts, secretions, and droppings.  
Rodents – Hair, skin flakes, urine, and saliva.  
**Where Found:** Often found in areas with food and water such as kitchens, bathrooms, and basements.

### Warm-Blooded Pets (such as cats and dogs)

**Triggers:** Skin flakes, urine, and saliva.  
**Where Found:** Throughout entire house, if allowed inside.

### Mold

**Triggers:** Mold and mold spores which may begin growing indoors when they land on damp or wet surfaces.  
**Where Found:** Often found in areas with excess moisture such as kitchens, bathrooms, and basements. There are many types of mold and they can be found in any climate.

### Secondhand Smoke

**Triggers:** Secondhand smoke – Mixture of smoke from the burning end of a cigarette, pipe or cigar and the smoke exhaled by a smoker.  
**Where Found:** Home or car where smoking is allowed.

### Nitrogen Dioxide (combustion by-product)

**Triggers:** Nitrogen dioxide – An odorless gas that can irritate your eyes, nose, and throat and may cause shortness of breath.  
**Where Found:** Associated with gas cooking appliances, fireplaces, woodstoves, and unvented kerosene and gas space heaters.

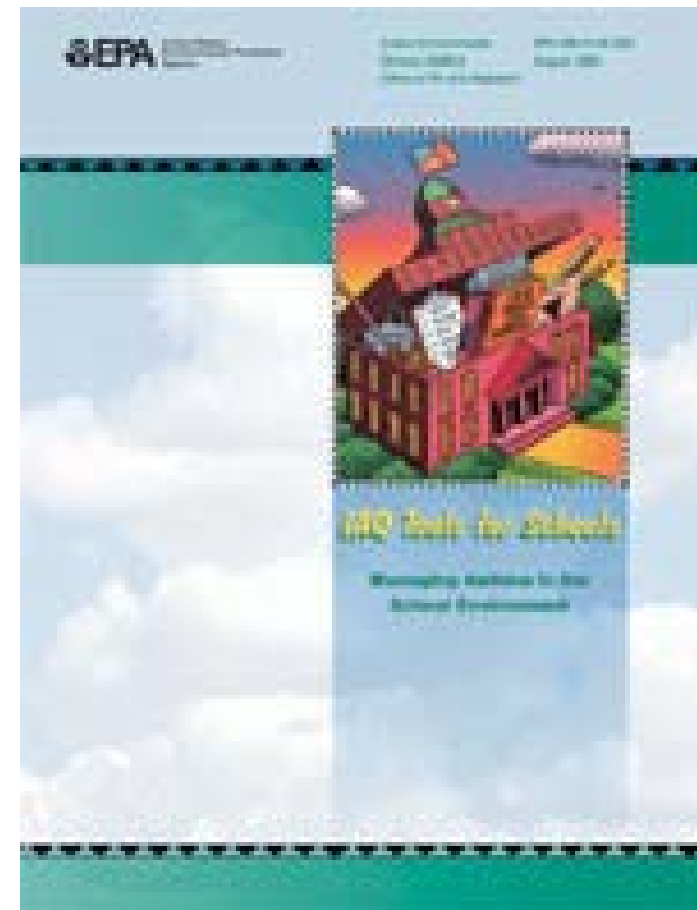


# What Actions Can I Take?

- Reduce triggers in school.
  - Use the EPA *Indoor Air Quality Tools for Schools* Program and Action Kit.
  - Example Actions:
    - ✓ Minimize dust by reducing clutter.
    - ✓ Do not block ventilation ducts.
    - ✓ Avoid mold growth by reporting moisture problems or water leaks to the appropriate staff member immediately.

<http://www.epa.gov/iaq/schools/managingasthma.html>







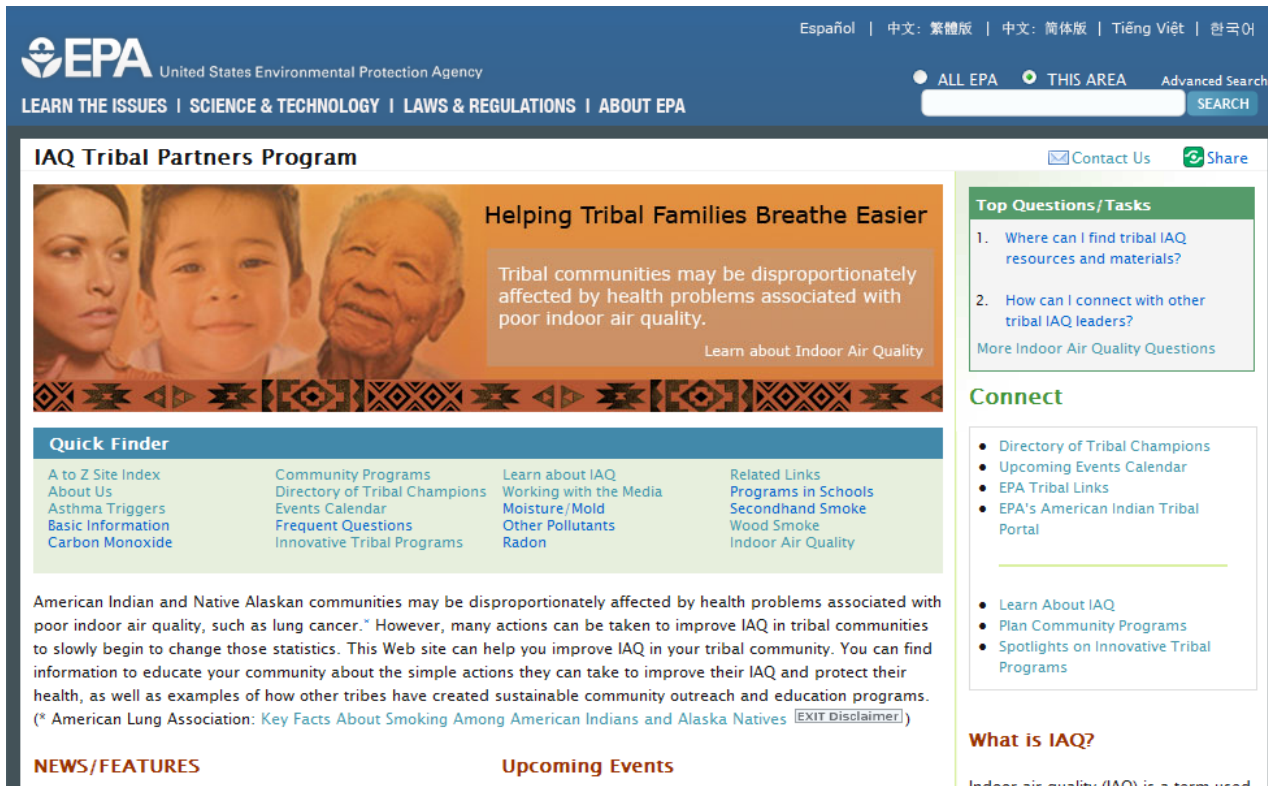
# What Actions Can I Take?

- Limit the amount of perfumed products you wear.
- Be conscious of exposure to certain cleaning products and use less toxic alternatives when possible.
- Choose not to smoke around others, especially children.



# Resources for More Information

- EPA's Tribal Indoor Air Quality Web site – [www.epa.gov/iaqtribal](http://www.epa.gov/iaqtribal)



The screenshot shows the EPA Tribal Indoor Air Quality (IAQ) website. The header includes the EPA logo, the text "United States Environmental Protection Agency", and navigation links: "LEARN THE ISSUES | SCIENCE & TECHNOLOGY | LAWS & REGULATIONS | ABOUT EPA". There are also language options (Español, 中文, 繁體版, 中文, 简体版, Tiếng Việt, 한국어) and a search bar with "ALL EPA" and "THIS AREA" radio buttons, and an "Advanced Search" button.

The main content area is titled "IAQ Tribal Partners Program". It features a large image of three people (a woman, a child, and an older man) with the text "Helping Tribal Families Breathe Easier". Below this, it states: "Tribal communities may be disproportionately affected by health problems associated with poor indoor air quality." and includes a link "Learn about Indoor Air Quality".

Below the main image is a "Quick Finder" section with four columns of links:

Quick Finder			
A to Z Site Index	Community Programs	Learn about IAQ	Related Links
About Us	Directory of Tribal Champions	Working with the Media	Programs in Schools
Asthma Triggers	Events Calendar	Moisture/Mold	Secondhand Smoke
Basic Information	Frequent Questions	Other Pollutants	Wood Smoke
Carbon Monoxide	Innovative Tribal Programs	Radon	Indoor Air Quality

Below the Quick Finder is a paragraph of text: "American Indian and Native Alaskan communities may be disproportionately affected by health problems associated with poor indoor air quality, such as lung cancer.\* However, many actions can be taken to improve IAQ in tribal communities to slowly begin to change those statistics. This Web site can help you improve IAQ in your tribal community. You can find information to educate your community about the simple actions they can take to improve their IAQ and protect their health, as well as examples of how other tribes have created sustainable community outreach and education programs. (\* American Lung Association: Key Facts About Smoking Among American Indians and Alaska Natives [\[EXIT Disclaimer\]](#))"

At the bottom of the main content area are two sections: "NEWS/FEATURES" and "Upcoming Events".

On the right side of the page, there is a "Top Questions/Tasks" section with two numbered questions:

1. Where can I find tribal IAQ resources and materials?
2. How can I connect with other tribal IAQ leaders?

Below this is a link "More Indoor Air Quality Questions".

Below that is a "Connect" section with a list of links:

- Directory of Tribal Champions
- Upcoming Events Calendar
- EPA Tribal Links
- EPA's American Indian Tribal Portal

Below this is another list of links:

- Learn About IAQ
- Plan Community Programs
- Spotlights on Innovative Tribal Programs

At the bottom right is a section titled "What is IAQ?" with the text "Indoor air quality (IAQ) is a term used".



## Resources for More Information

- EPA's Asthma Program – <http://www.epa.gov/asthma>
- EPA's *IAQ Tools for Schools* Program – <http://www.epa.gov/iaq/schools/>
- NoAttacks.org – <http://www.noattacks.org/>
- AsthmaCommunityNetwork.org – <http://www.asthmacommunitynetwork.org/>
- Aberdeen Area Tribal Chairmen's Health Board Asthma Prevention Campaign – <http://aatchb.org/asthma/>
- Native AIR program – <http://www.nativeasthma.org>



# References

- NAEEP Asthma Basics for Schools PowerPoint Presentation – [http://www.nhlbi.nih.gov/health/prof/lung/asthma/basics\\_schools/part2.ppt](http://www.nhlbi.nih.gov/health/prof/lung/asthma/basics_schools/part2.ppt)



## Conclusion

- Simple actions can greatly reduce the burden of asthma in your tribal community.

THANK YOU!

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