

Asthma



A Presentation on Asthma Management and Prevention

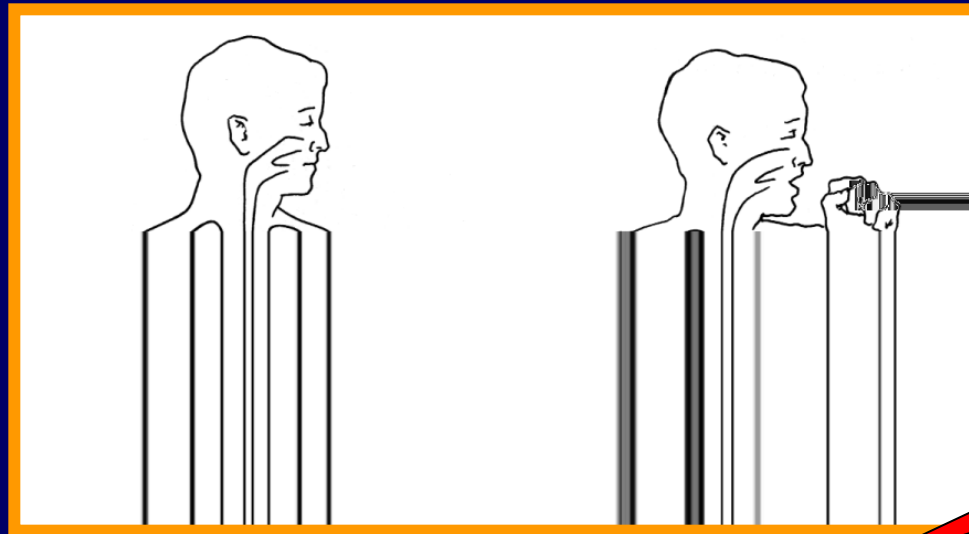


What is Asthma?

- ❖ Chronic disease of the airways that may cause
 - ❖ Wheezing
 - ❖ Breathlessness
 - ❖ Chest tightness
 - ❖ Nighttime or early morning coughing

- ❖ Episodes are usually associated with widespread, but variable, airflow obstruction within the lung that is often reversible either spontaneously or with treatment.

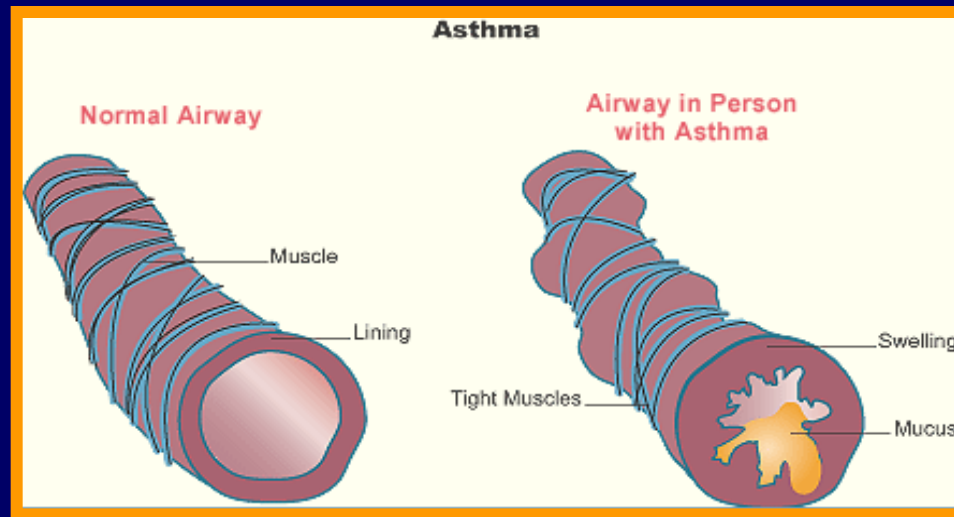
Pathology of Asthma



Normal

Asthma

Asthma involves inflammation of the airways



Asthma

Normal Airway

Airway in Person with Asthma

Muscle

Lining

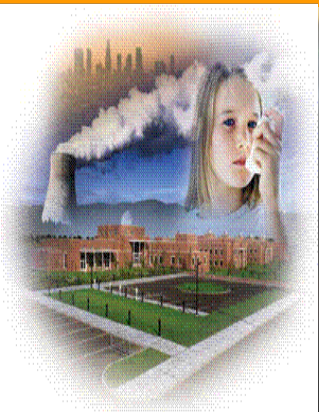
Swelling

Mucus

Tight Muscles



Risk Factors for Developing Asthma



- ❖ Genetic characteristics
- ❖ Occupational exposures
- ❖ Environmental exposures



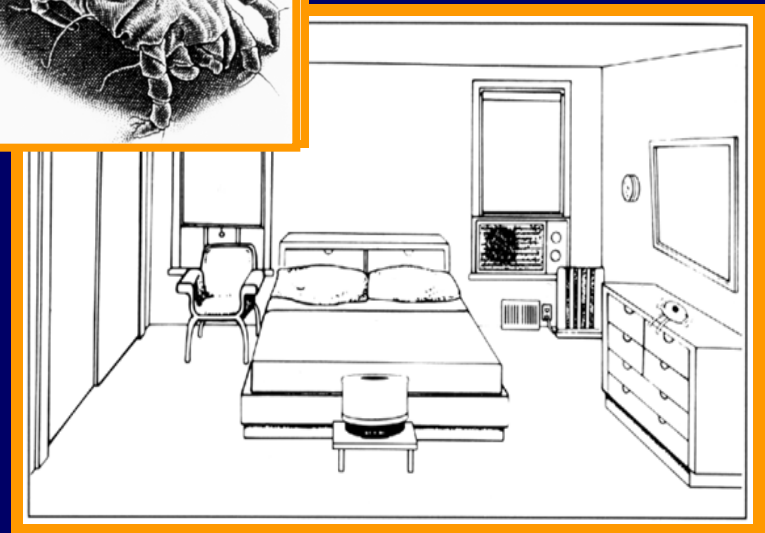
Risk Factors for Developing Asthma: Genetic Characteristics

Atopy

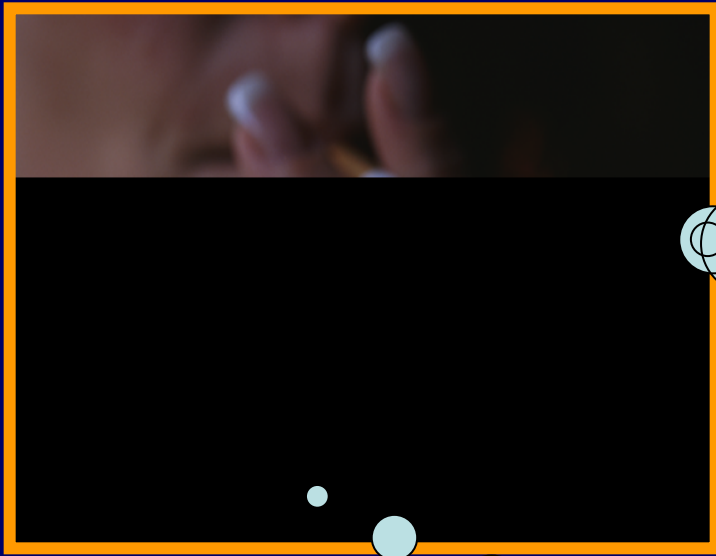
- ❖ The body's predisposition to develop an antibody called immunoglobulin E (IgE) in response to exposure to environmental allergens
- ❖ Can be measured in the blood
- ❖ Includes allergic rhinitis, asthma, hay fever, and eczema

Reducing Exposure to House Dust Mites

- ❖ Use bedding encasements
- ❖ Wash bed linens weekly
- ❖ Avoid down fillings
- ❖ Limit stuffed animals to those that can be washed



Reducing Exposure to Tobacco Smoke



Evidence suggests an association between environmental tobacco smoke exposure and exacerbations of asthma among school-aged, older children, and adults.

Evidence shows an association between environmental tobacco smoke exposure and asthma development among pre-school aged children.

Reducing Exposure to Cockroaches



Remove as many water and food sources as possible to avoid cockroaches.

Reducing Exposure to Pets

- ❖ People who are allergic to pets should *not* have them in the house.
- ❖ Reduce exposure to pets outdoors as well



Reducing Exposure to Mold



Eliminating mold and the moist conditions that permit mold growth may help prevent asthma exacerbations.

Other Asthma Triggers

- ❖ Air pollution
- ❖ Trees, grass, and weed pollen



Diagnosing Asthma: Medical History

- ❖ Symptoms
 - ❖ Coughing
 - ❖ Wheezing
 - ❖ Shortness of breath
 - ❖ Chest tightness
- ❖ Symptom Patterns
- ❖ Severity
- ❖ Family History



Diagnosing Asthma

- ❖ Troublesome cough, particularly at night
- ❖ Awakened by coughing
- ❖ Coughing or wheezing after physical activity
- ❖ Breathing problems during particular seasons
- ❖ Coughing, wheezing, or chest tightness after allergen exposure
- ❖ Colds that last more than 10 days
- ❖ Relief when medication is used



Diagnosing Asthma

- ❖ Wheezing sounds during normal breathing
- ❖ Hyperexpansion of the thorax
- ❖ Increased nasal secretions or nasal polyps
- ❖ Atopic dermatitis, eczema, or other allergic skin conditions



Diagnosing Asthma: Spirometry

Test lung function when diagnosing asthma



Medications to Treat Asthma

- ❖ Medications come in several forms.
- ❖ Two major categories of medications are:
 - ❖ Long-term control
 - ❖ Quick relief



Medications to Treat Asthma: Long-Term Control

- ❖ Taken daily over a long period of time
- ❖ Used to reduce inflammation, relax airway muscles, and improve symptoms and lung function
 - ❖ Inhaled corticosteroids
 - ❖ Long-acting beta₂-agonists
 - ❖ Leukotriene modifiers



Medications to Treat Asthma: Quick-Relief



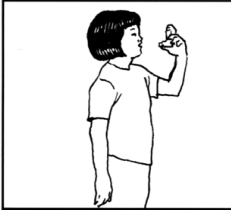
- ❖ **Used in acute episodes**
- ❖ **Generally short-acting beta₂agonists**

Medications to Treat Asthma: How to Use a Spray Inhaler

Remember to breathe in slowly.



1. Take off the cap.
Shake the inhaler.



2. Stand up.
Breathe out.



3. Put the inhaler in your mouth
or put it just in front of your
mouth. As you start to
breathe in, push down on
the top of the inhaler and
keep breathing in slowly.



4. Hold your breath for
10 seconds.
Breathe out.

The health-care
provider should
evaluate inhaler
technique at each
visit.

Medications to Treat Asthma: Inhalers and Spacers



Spacers can help patients who have difficulty with inhaler use and can reduce potential for adverse effects from medication.

Medications to Treat Asthma: Nebulizer

- ❖ Machine produces a mist of the medication
- ❖ Used for small children or for severe asthma episodes
- ❖ No evidence that it is more effective than an inhaler used with a spacer



Managing Asthma: Asthma Management Goals

- ❖ Achieve and maintain control of symptoms
- ❖ Maintain normal activity levels, including exercise
- ❖ Maintain pulmonary function as close to normal levels as possible
- ❖ Prevent asthma exacerbations
- ❖ Avoid adverse effects from asthma medications
- ❖ Prevent asthma mortality



Managing Asthma: Asthma Action Plan

- ❖ Develop with a physician
- ❖ Tailor to meet individual needs
- ❖ Educate patients and families about all aspects of plan
 - ❖ Recognizing symptoms
 - ❖ Medication benefits and side effects
 - ❖ Proper use of inhalers and Peak Expiratory Flow (PEF) meters



Managing Asthma: Sample Asthma Action Plan

My Asthma Action Plan
Age ≥ 5 years

Patient Name: _____
Medical Record #: _____

Physician's Name: _____ DOB: _____
Physician's Phone #: _____ Completed by: _____ Date: _____

Long-Term-Control Medicines	How Much To Take	How Often	Other Instructions
		_____ times per day EVERY DAY!	
		_____ times per day EVERY DAY!	
		_____ times per day EVERY DAY!	
		_____ times per day EVERY DAY!	
Quick-Relief Medicines	How Much To Take	How Often	Other Instructions
			NOTE: If this medicine is needed frequently, call physician to consider increasing long-term-control medications.

Take ONLY as needed.

Special instructions when I feel ● good, ● not good, and ● awful.

I feel good.
(My peak flow is in the GREEN zone.)

I do not feel good.
(My peak flow is in the YELLOW zone.)
My symptoms may include one or more of the following:

- Wheeze
- Tight chest
- Cough
- Shortness of breath
- Waking up at night with asthma symptoms
- Decreased ability to do usual activities

I feel awful.
(My peak flow is in the RED zone.)
Warning signs may include one or more of the following:

- It's getting harder and harder to breathe
- Unable to sleep or do usual activities because of trouble breathing

Danger! Get help immediately!

PREVENT asthma symptoms everyday:

- Take my long-term-control medicines (above) every day.
- Before exercise, take _____ puffs of _____.
- Avoid things that make my asthma worse like _____.

CAUTION: I should continue taking my long-term-control asthma medicines every day AND:

- Take _____

If I still do not feel good, or my peak flow is not back in the **Green Zone** within 1 hour, then I should:

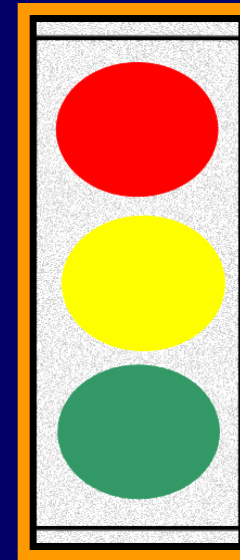
- Increase _____
- Add _____
- Call _____

MEDICAL ALERT! Get help!

- Take _____ until I get help immediately.
- Take _____
- Call _____

Call 9-1-1 if you have trouble walking or talking due to shortness of breath or lips or fingernails are gray or blue.

Describes medicines to use and actions to take



Managing Asthma: Peak Expiratory Flow (PEF) Meters



- ❖ Allows patient to assess status of his/her asthma
- ❖ Persons who use peak flow meters should do so frequently
- ❖ Many physicians require for all severe patients

Managing Asthma: Peak Flow Chart

People with moderate or severe asthma should take readings:

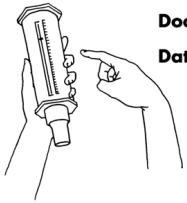
- ❖ Every morning
- ❖ Every evening
- ❖ After an exacerbation
- ❖ Before inhaling certain medications

Peak Flow Chart


Name: _____

Doctor: _____

Date: _____



How to use a peak flow chart at home.



1. Find your peak flow number in the morning and evening.
2. Each morning and each evening blow 3 times.
3. After each blow, mark the spot where the marker stopped.
4. Put the meter next to the peak flow chart to help you find the spot to mark.
5. Circle the highest of the 3 numbers. That is your peak flow number.

Sample Day	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7	
	morning	evening	morning	evening	morning	evening	morning	evening	morning	evening	morning	evening	morning	evening
	800	800	800	800	800	800	800	800	800	800	800	800	800	800
	750	750	750	750	750	750	750	750	750	750	750	750	750	750
	700	700	700	700	700	700	700	700	700	700	700	700	700	700
	650	650	650	650	650	650	650	650	650	650	650	650	650	650
	600	600	600	600	600	600	600	600	600	600	600	600	600	600
	550	550	550	550	550	550	550	550	550	550	550	550	550	550
	500	500	500	500	500	500	500	500	500	500	500	500	500	500
	450	450	450	450	450	450	450	450	450	450	450	450	450	450
	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	350	350	350	350	350	350	350	350	350	350	350	350	350	350
	300	300	300	300	300	300	300	300	300	300	300	300	300	300
	250	250	250	250	250	250	250	250	250	250	250	250	250	250
	200	200	200	200	200	200	200	200	200	200	200	200	200	200
	150	150	150	150	150	150	150	150	150	150	150	150	150	150
	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	60	60	60	60	60	60	60	60	60	60	60	60	60	60

Managing Asthma: Indications of a Severe Attack

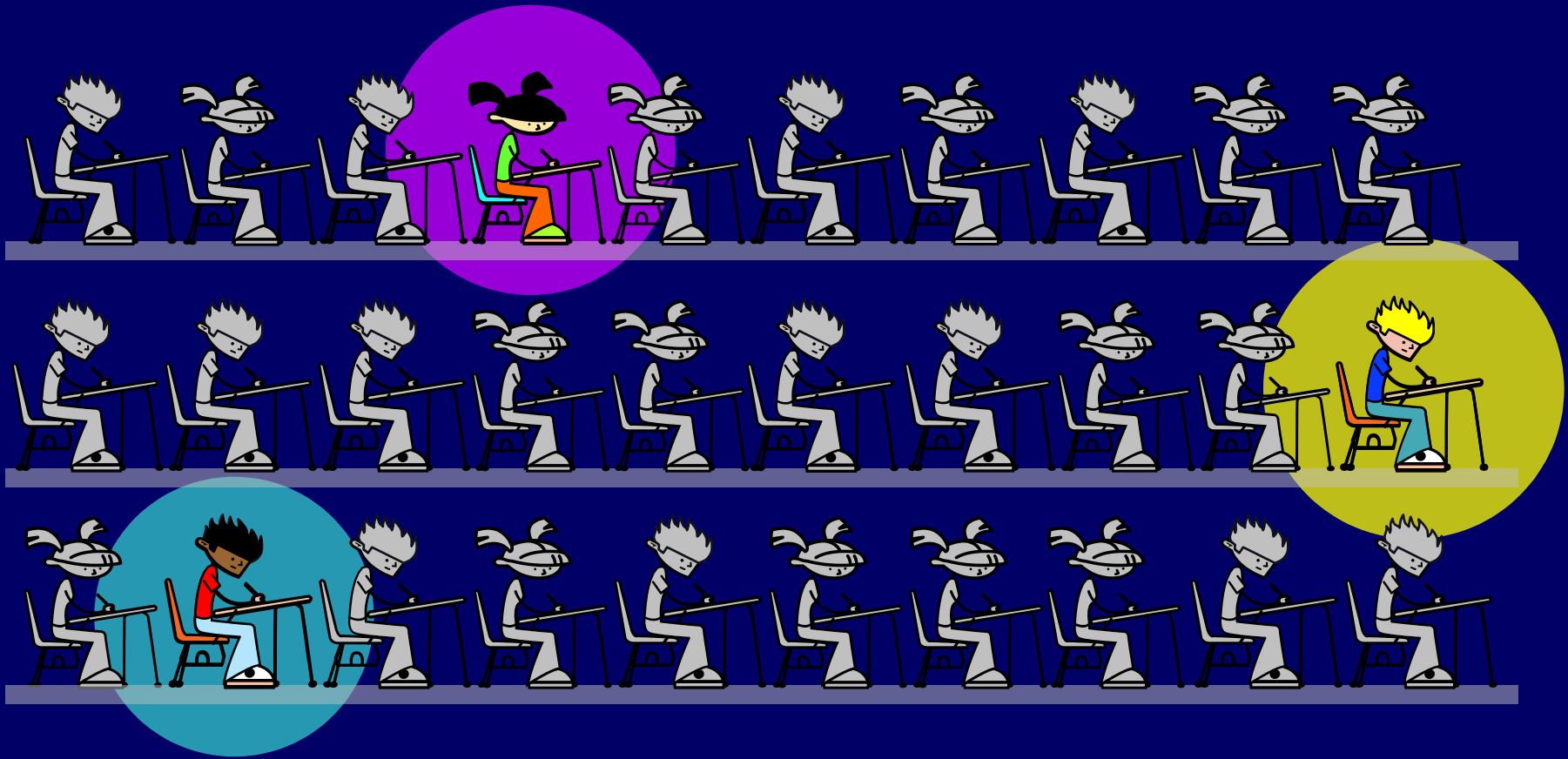
- ❖ Breathless at rest
- ❖ Hunched forward
- ❖ Speaks in words rather than complete sentences
- ❖ Agitated
- ❖ Peak flow rate less than 60% of normal

Managing Asthma: Things People with Asthma Can Do

- ❖ Have an individual management plan containing
 - ❖ Your medications (controller and quick-relief)
 - ❖ Your asthma triggers
 - ❖ What to do when you are having an asthma attack
- ❖ Educate yourself and others about
 - ❖ Asthma Action Plans
 - ❖ Environmental interventions
- ❖ Seek help from asthma resources
- ❖ Join an asthma support group



On average, 3 children in a classroom of 30



are likely to have asthma.*

A Public Health Response to Asthma:

What can make asthma worse in the school?

- ❖ Mold and mildew
- ❖ Animals in classroom
- ❖ Carpeted classrooms
- ❖ Cockroaches
- ❖ Poor air quality



Resources

- ❖ National Asthma Education and Prevention Program
 - ❖ <http://www.nhlbi.nih.gov/about/naepp/>
- ❖ Asthma and Allergy Foundation of America
 - ❖ <http://www.aafa.org>
- ❖ American Lung Association
 - ❖ <http://www.lungusa.org>
- ❖ American Academy of Allergy, Asthma, and Immunology
 - ❖ <http://www.aaaai.org>
- ❖ Allergy and Asthma Network/Mothers of Asthmatics, Inc.
 - ❖ <http://www.aanma.org>



Resources

- ❖ American College of Allergy, Asthma, and Immunology
 - ❖ <http://www.acaai.org>
- ❖ American College of Chest Physicians
 - ❖ <http://www.chestnet.org>
- ❖ American Thoracic Society
 - ❖ <http://www.thoracic.org>
- ❖ The Centers for Disease Control and Prevention
 - ❖ <http://www.cdc.gov/asthma>

