

Asthma Education

Lucile Packard Children's Hospital

Created by

Rachel Lawler RN, MSN, cPNP, AE-C, NPAT

Pulmonary Pediatric Nurse Practitioner

Lucile Packard Children's Hospital

at Stanford University

Division of Pediatric Pulmonary Medicine

Fall 2012

The Keys to Asthma Prevention and Control



And ...

what to do when one's asthma is flared!

What happens...

Asthma Pathophysiology

inside your lungs?

Normal Airways



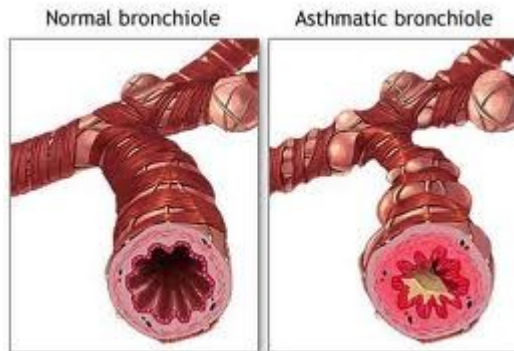
Asthmatic Airways



- ◆ Increased inflammation and redness
- ◆ Increased mucous and phlegm production

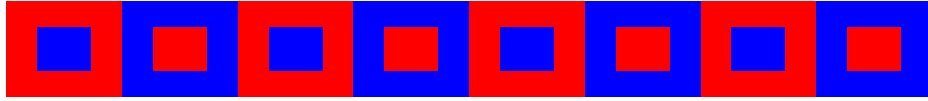
Asthma Attack

- ◆ Increased inflammation
- ◆ Increased mucous production
- ◆ Smooth muscle constriction



Partners for Asthma Co-Management Space for Bar Code

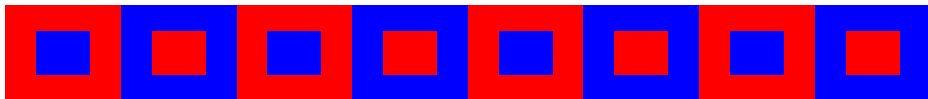
Provider Information	Asthma Action Plan		Patient Information																													
Packard Pulmonary MD: _____ Phone #: _____ Clinic MD/Nurse: _____ Phone #: _____			Patient Name: _____ DOB: _____ MRN: _____																													
Updated on (Date): _____ By (Provider): _____ At (Location): _____ Triggers are (smoke, dust, colds, pollen, weather changes, exercise, cats, other): _____																																
PREVENTION: Take this prevention medicine every day to stay well																																
😊 Child is feeling well: • Breathing easy • No cough • Plays and exercises easily Other _____	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"><u>Medicine</u></th> <th style="width: 30%;"><u>How much to Take</u></th> <th style="width: 40%;"><u>Times to take</u></th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	<u>Medicine</u>	<u>How much to Take</u>	<u>Times to take</u>													<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"><u>Medicine</u></th> <th style="width: 30%;"><u>How much to Take</u></th> <th style="width: 40%;"><u>Times to take</u></th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	<u>Medicine</u>	<u>How much to Take</u>	<u>Times to take</u>												
<u>Medicine</u>	<u>How much to Take</u>	<u>Times to take</u>																														
<u>Medicine</u>	<u>How much to Take</u>	<u>Times to take</u>																														
20 minutes before exercise use: Albuterol/Xopenex (2 puffs)																																
MILD PROBLEMS: Continue prevention medicine and start medicines below																																
😐 Mild cough, day or night • First signs of a cold • Exposed to a trigger • Less active than normal Other _____	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"><u>Medicine</u></th> <th style="width: 30%;"><u>How much to Take</u></th> <th style="width: 40%;"><u>Times to Take</u></th> </tr> </thead> <tbody> <tr> <td>Albuterol</td> <td>2 puffs with spacer or nebulizer</td> <td>Every 4-6 hours</td> </tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	<u>Medicine</u>	<u>How much to Take</u>	<u>Times to Take</u>	Albuterol	2 puffs with spacer or nebulizer	Every 4-6 hours							<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"><u>Medicine</u></th> <th style="width: 30%;"><u>How much to Take</u></th> <th style="width: 40%;"><u>Times to Take</u></th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	<u>Medicine</u>	<u>How much to Take</u>	<u>Times to Take</u>															
<u>Medicine</u>	<u>How much to Take</u>	<u>Times to Take</u>																														
Albuterol	2 puffs with spacer or nebulizer	Every 4-6 hours																														
<u>Medicine</u>	<u>How much to Take</u>	<u>Times to Take</u>																														
Call clinic in 3-4 days if still sick. Call sooner if there are signs of difficult breathing.																																
WORSE PROBLEMS: Continue prevention medicine and start medicines below																																
☹️ Worse cough • Wheezing • Not active Other _____	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"><u>Medicine</u></th> <th style="width: 30%;"><u>How much to Take</u></th> <th style="width: 40%;"><u>Times to Take</u></th> </tr> </thead> <tbody> <tr> <td>Albuterol</td> <td>4 puffs with spacer or nebulizer</td> <td>Every 4 hours</td> </tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	<u>Medicine</u>	<u>How much to Take</u>	<u>Times to Take</u>	Albuterol	4 puffs with spacer or nebulizer	Every 4 hours							<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"><u>Medicine</u></th> <th style="width: 30%;"><u>How much to Take</u></th> <th style="width: 40%;"><u>Times to Take</u></th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	<u>Medicine</u>	<u>How much to Take</u>	<u>Times to Take</u>															
<u>Medicine</u>	<u>How much to Take</u>	<u>Times to Take</u>																														
Albuterol	4 puffs with spacer or nebulizer	Every 4 hours																														
<u>Medicine</u>	<u>How much to Take</u>	<u>Times to Take</u>																														
Call clinic now to speak with nurse or provider.																																
SEVERE PROBLEMS: GET MEDICAL CARE NOW																																
☹️ Breathing is hard and fast • Constant cough • Trouble walking or talking • Medicine is not helping Other _____	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"><u>Medicine</u></th> <th style="width: 30%;"><u>How much to Take</u></th> <th style="width: 40%;"><u>Times to Take</u></th> </tr> </thead> <tbody> <tr> <td>Albuterol</td> <td>6 puffs with spacer or nebulizer</td> <td>May repeat 2 times every 20 min</td> </tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	<u>Medicine</u>	<u>How much to Take</u>	<u>Times to Take</u>	Albuterol	6 puffs with spacer or nebulizer	May repeat 2 times every 20 min							<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"><u>Medicine</u></th> <th style="width: 30%;"><u>How much to Take</u></th> <th style="width: 40%;"><u>Times to Take</u></th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	<u>Medicine</u>	<u>How much to Take</u>	<u>Times to Take</u>															
<u>Medicine</u>	<u>How much to Take</u>	<u>Times to Take</u>																														
Albuterol	6 puffs with spacer or nebulizer	May repeat 2 times every 20 min																														
<u>Medicine</u>	<u>How much to Take</u>	<u>Times to Take</u>																														
CALL 911																																
• Can't breathe • Can't talk in full sentences Feel that life is in danger	• Does not respond to you																															



Use the *Asthma Action Plan* to
prevent asthma

and when there is an flare!

- Take prevention medicines as directed on a regular basis.
- Follow plan for increasing medications when symptomatic.
- Seek medical attention according to the asthma action plan in each zone.
- Share asthma action plan with all caregivers including school.
- Have a rescue inhaler with you at all times and at school!



Asthma Symptoms

- ◆ Cough
- ◆ Wheeze
- ◆ Shortness of Breath
- ◆ Difficulty playing and running or cough after activity



Severe Asthma Symptoms


- ◆ Fatigue
- ◆ Increased work of breathing
- ◆ Severe cough
- ◆ Difficulty talking
- ◆ Hunched shoulders
- ◆ Blue lips or nails



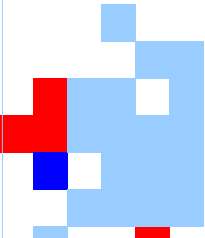
Asthma Triggers

Cats	Air pollution
Dogs	Pollen/Trees
Dust mites	Grasses/Weeds
Cockroaches	Exercise
Rodents	Cold Air
Smoke	Mold/Mildew
Emotions	Stress

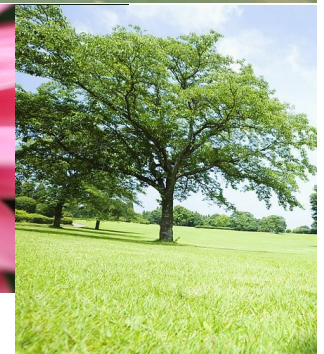
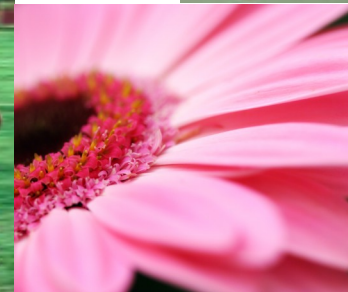
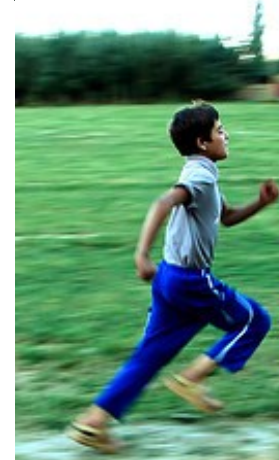
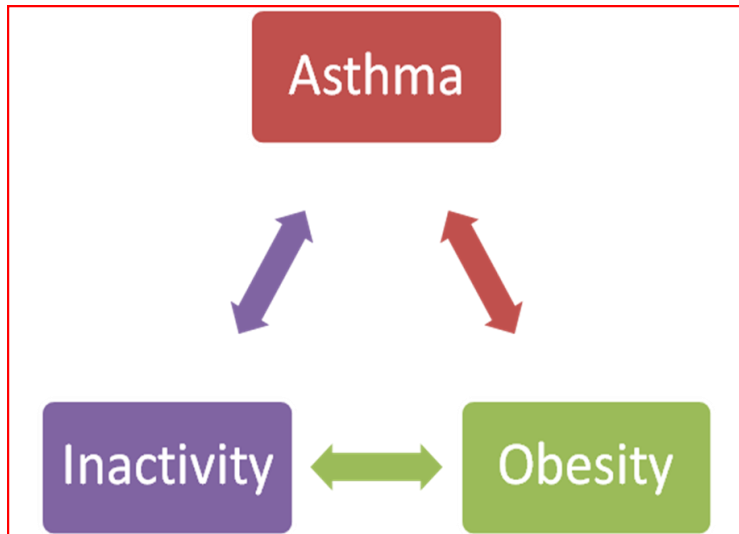
Warning signs of an asthma flare

- 
- ♦ Viral illness or cold or exposure to a known trigger
 - ♦ Frequent cough especially with playing or at night
 - ♦ Wheezing
 - ♦ Decreased energy

Signs of an Asthma Attack

- 
- ♦ Worsing or constant cough or wheeze
 - ♦ Vomiting after coughing
 - ♦ Grunting, flared nostrils, hunched shoulders
 - ♦ Retractions – visible lines between or under ribs when breathing
 - ♦ Fast breathing
 - ♦ Difficulty walking or talking
 - ♦ Blue lips or nails
 - ♦ Does not improve with albuterol

Asthma and Obesity



Maintaining a healthy weight is critical to controlling asthma!

- * Eat 5 fruits or vegetables a day.
- * Limit soda and juice; drink more water and nonfat milk.
- * Eat whole grain bread, cereals, crackers and brown rice.
- * Eat 3 lean protein servings a day.
- * Limit junk food to once a week!
- * Exercise 5 x week or play outside daily.

Asthma Trigger Elimination

Dust mites

- Use HEPA air filters.
- Cover mattress and pillows with allergen encasements.
- Wash all stuffed animals and bedding in hot water once a week.
- Remove carpet and drapes if possible and replace with linoleum, tile, wood.
- Replace drapes or curtains with blinds.

Mold and Mildew

- Prevent mold by not using a humidifier.
- Clean small spots of mold with chlorine solution 1:10 with water.
- Discard large items covered in mold.
- Use a professional cleaner for areas larger than 3ft x 3ft.
- Identify and eliminate water leaks.

Exercising with Asthma



Exercise is good for everyone including kids with asthma!

- ♦ Building up exercise ability can decrease asthma attacks.
- ♦ Exercise helps improve sleep, reduce stress, and increase energy.
- ♦ Avoid strenuous exercise if asthma is flared or if air quality is poor.

Take your rescue inhaler (albuterol) 20-30 minutes before you exercise!

Allergies, Asthma, and Eczema

... Oh my!



- Allergy control, prevention and elimination is critical in preventing and controlling asthma.
- Your medical team can help test for airborne and food allergies with a blood or skin test.
- Medications can relieve allergy symptoms like runny nose, sneezing, sniffing, watery and itchy eyes, throat clearing, itchy rash.



Asthma Trigger Elimination

Pets

- Remove furry animals from the home or at least from the bedroom.
- See dust mite recommendations

Smoking

- Do not smoke inside the home or car.
- If smoking outside, wash hands and change clothes before playing with child.
- Encourage smoking cessation.

1-800-NO-BUTTS

General Tips

- Clean and dust home when the person with asthma is not there.
- Use cleaning products without harsh chemical smells
- Use fragrance-free soaps and detergents
- Do not use wood-fire or other fuel-burning appliance.

Asthma Medications

Controller Medications

Flovent
(Fluticasone)



Qvar
(Beclamethasone)



Goal:
Reduce airway inflammation to prevent asthma symptoms and exacerbations

Pulmicort
(Budesonide)



Singulair
(Montelukast)



Advair
(Fluticasone/
Salmeterol)



Asmanex
(Mometasone)



Symbicort
(Budesonide/
Formoterol)



Small Volume Nebulizer

1. Remove top from the medication cup.
2. Put in the prescribed medication.
3. Replace the top of the medication cup.
4. Hook tubing to the cup and the machine.
5. Turn on the machine.
6. Breathe in mist with mouth piece or mask until medication is finished.
7. Rinse mouth.
8. Rinse tubing and let air dry weekly.



Dry Powder Inhaler

1. Twist Diskus open.
2. Hold level.
3. Click lever back.
4. Breathe out and close lips around mouth piece.
5. Breathe in as fast and as deep as possible.
6. Hold breath for 5-10 seconds.
7. Rinse mouth.



Asthma Medications

Rescue Medications

Proair
(Albuterol)



Proventil
(Albuterol)



Goal:
Open airways to reduce cough and wheeze symptoms or an asthma flare

Proair
(Albuterol)



Xopenex
(levalbuterol)



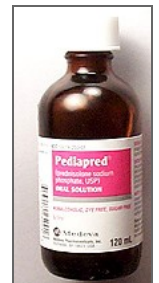
Duoneb
(Albuterol/
Ipratropium)



Albuterol
Nebulized



Pediapred
(Prednisolone)



Inhaler with spacer

1. Remove cap from inhaler and place in end of spacer.
2. Breathe out and close lips around mouth piece.
3. Give 1 puff of medicine and breathe in as slowly and deeply as possible.
4. Hold breath for 5-10 seconds.
5. Wait 1 minute; repeat if instructed.
6. Rinse mouth.



Rinse out spacer weekly with clean soapy

water and let air dry. Do not use towel or hand to clean or dry inside of spacer.

Inhaler with mask & spacer

1. Remove cap from inhaler and place in end of spacer.
2. Place mask on child's face.
3. Give 1 puff of medicine and have child breathe normally 5 times.
4. Wait 1 minute; repeat if instructed.
5. Rinse mouth.

