

# Asthma Medication and Devices Update

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**VIDANT HEALTH™**

# Objectives

- Discuss delivery devices for inhaled medications
- Demonstrate use of delivery devices
- Discuss recommendations for cleaning devices
- Discuss use of peak flow meters
- Recommendations for use of management plans



# Devices

- Device Demonstration
- Advantages versus Disadvantages
- Cleaning Recommendations
- Age Recommendations



# Metered Dose Inhalers



# What is a Spacer?

- A spacer or holding chamber is a tool used with a metered dose inhaler (MDI).
- When used correctly, spacers help more medicine get to the lungs.



# Spacers with Mouthpiece



# Spacers with Mask



# Reservoir Bag





# Autohaler



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# Common MDI Mistakes

- Failure to remove cap from MDI
- Failure to shake MDI before using
- Using empty canister
- Failure to completely exhale prior to using
- Incorrect timing of actuation
- Incomplete inhalation
- Inhale through nose
- Fast instead of slow inhalation – whistle sound
- Failure to hold breath for 10 seconds
- Activate MDI several times instead of once



# Diskus



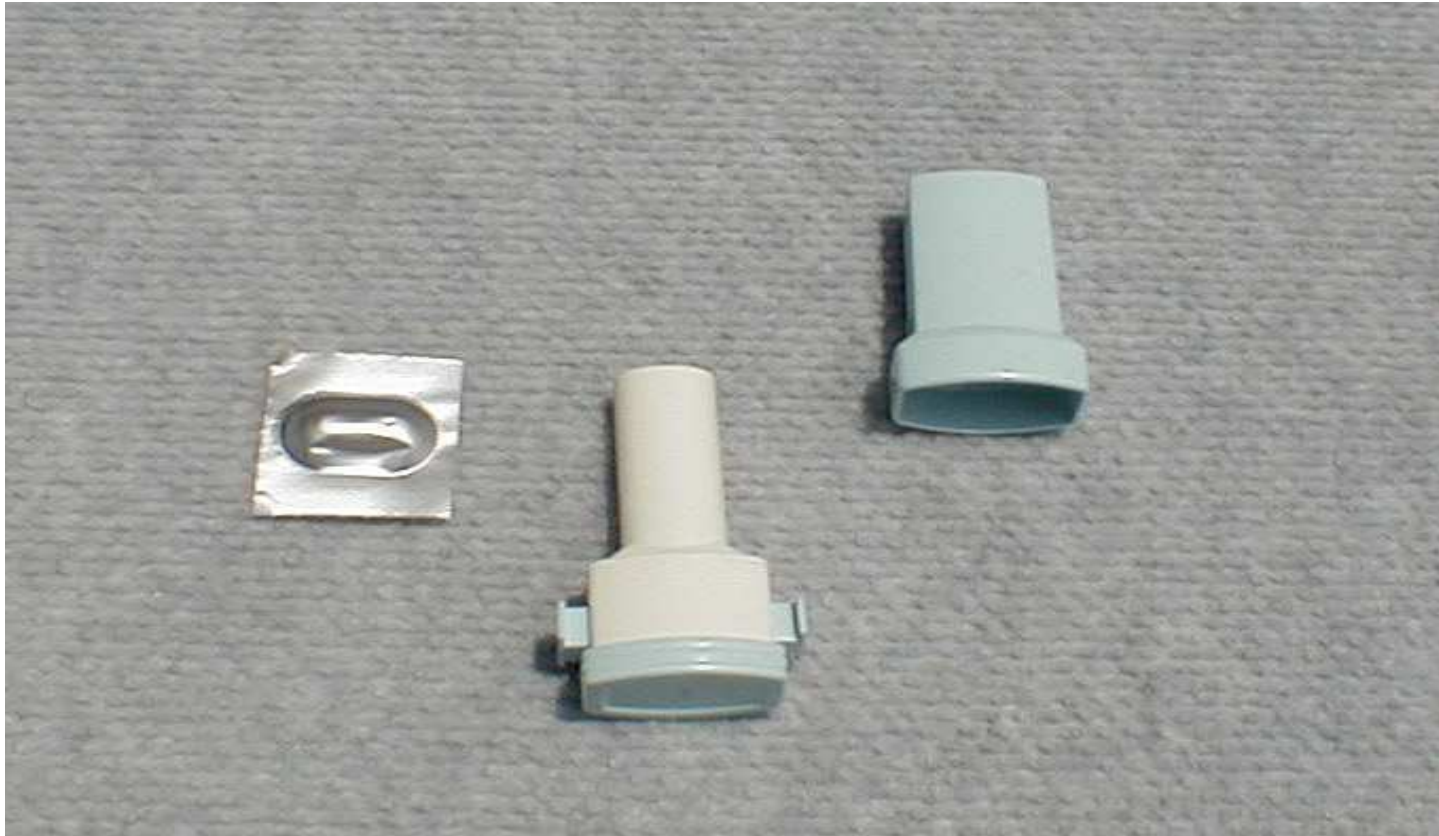
# Flexhaler



# Twisthaler



# Aerolizer

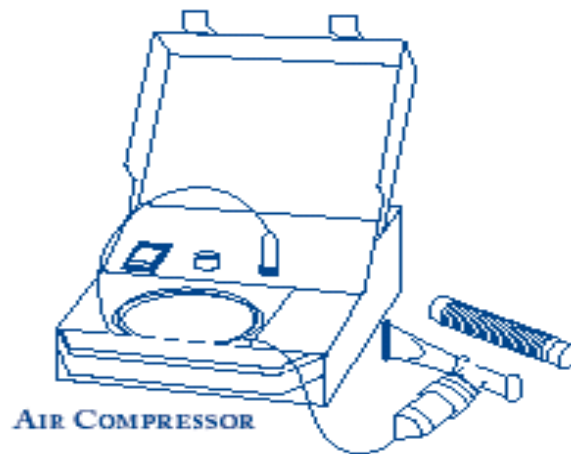


# Nebulizers

- A tool that lets you take medicine as a mist.
- Nebulizers may be used by children under 5 years of age and people who have problems using a metered dose inhaler
- Generally, not required at school or place of work



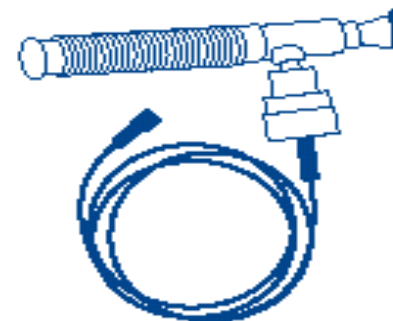
# Air Compressor And Nebulizer Set-ups



AIR COMPRESSOR



NEBULIZER WITH FACE MASK



NEBULIZER WITH MOUTHPIECE





# Nebulizer Concerns

- Expense
- Proper Maintenance of Air Compressor
- Bacterial Source
- Electricity
- Bulky
- Timely
- Medication Waste



# What Are Peak Flow Meters?

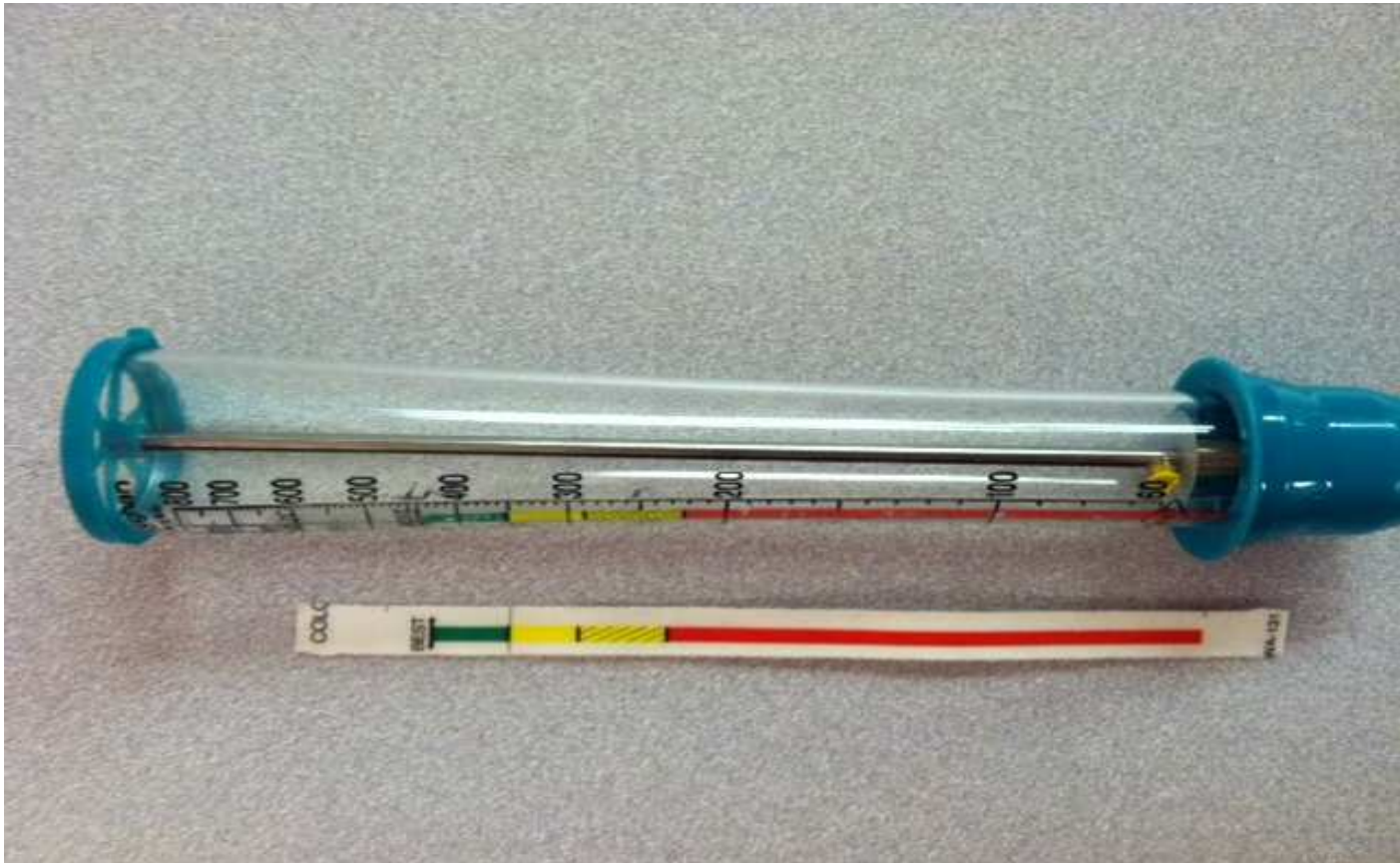
- Devices that measure the amount of air that can be blown out of the lungs
- Peak flow meters can detect changes in the lungs hours, even days, before symptoms appear
- Predicted peak flow numbers are based on a combination of your height, your gender, your age and your normal values when you are not having symptoms
- The colored zones on the peak flow can help determine how your overall management plan is working, when to take your medicine, and when to call the doctor



# Peak Flow Meters



# Stickers



# What Is An Action Plan?

- A color coded plan giving instructions for treatment based on symptoms and/or peak flow readings.
- Warning signs are not the same for everyone.

Common signs are listed in the plan using

green - yellow - red

the colors of a stoplight, to help you determine what type of treatment is needed.





# ASTHMA ACTION PLAN


Asthma Action Plan for \_\_\_\_\_ DOB: \_\_\_\_\_


Emergency Contact: \_\_\_\_\_ Phone number: \_\_\_\_\_ Date: \_\_\_\_\_

Doctor's Name: \_\_\_\_\_ Phone number: \_\_\_\_\_ Pharmacy: \_\_\_\_\_

	<b>Asthma Severity:</b> <input type="radio"/> Intermittent OR <input type="radio"/> Persistent <input type="radio"/> Mild <input type="radio"/> Moderate <input type="radio"/> Severe	<b>Asthma Triggers:</b> <input type="checkbox"/> Tobacco Smoke <input type="checkbox"/> Animals (furry or feathered) <input type="checkbox"/> Colds/Respiratory Infection <input type="checkbox"/> Strong odors or cologne <input type="checkbox"/> Change in temperature <input type="checkbox"/> Dust, mold, pollen, cockroaches <input type="checkbox"/> Exercise <input type="checkbox"/> Other _____	<b>Last Fln Shot:</b> _____
	Peak Flow: Height (inches): _____ Predicted Best _____ Personal Best _____		

<b>CONTROLLED - Green</b> <ul style="list-style-type: none"> <li>Breathing is good</li> <li>No cough or wheeze</li> <li>Can play and work</li> </ul>  <p>Peak Flow &gt; _____ (80-100% of best)</p>	<b>1. Use CONTROL medicines EVERY DAY.</b> (Don't stop taking without talking to your doctor) _____ puffs of _____ times a day, everyday. _____ _____ <b>2. <input type="checkbox"/> (check of applicable) _____ puffs of _____ 10-15 minutes before very active exercise.</b>
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<b>CAUTION - Yellow</b> <ul style="list-style-type: none"> <li>Coughing (may be worse at night or with exercise)</li> <li>Wheezing</li> <li>Chest tightness</li> </ul>  <p>Peak Flow _____ to _____ (50-80% of best)</p>	<b>1. Take your RESCUE medicines and continue your CONTROL medicines.</b> <table border="0"> <tr> <td><u>Rescue Medicine:</u></td> <td><u>How much to take:</u></td> <td><u>When to take it:</u></td> </tr> <tr> <td>Albuterol or _____</td> <td> <input type="checkbox"/> 2 puffs by inhaler  <input type="checkbox"/> 4 puffs by inhaler  <input type="checkbox"/> use spacer, if available  <input type="checkbox"/> by nebulizer         </td> <td> <input type="checkbox"/> Repeat every 4 hours until back in the green zone.  <input type="checkbox"/> Other _____         </td> </tr> </table> <b>2.</b> _____ <b>3. Call your doctor if you need rescue medicine for more than 24 hours or 2 times a week.</b> <b>4. Always check for improvement in symptoms and/or repeat peak flow meter 10-15 minutes after using rescue medicine. Continue to follow plan.</b>	<u>Rescue Medicine:</u>	<u>How much to take:</u>	<u>When to take it:</u>	Albuterol or _____	<input type="checkbox"/> 2 puffs by inhaler <input type="checkbox"/> 4 puffs by inhaler <input type="checkbox"/> use spacer, if available <input type="checkbox"/> by nebulizer	<input type="checkbox"/> Repeat every 4 hours until back in the green zone. <input type="checkbox"/> Other _____
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<b>EMERGENCY - Red</b> <ul style="list-style-type: none"> <li>Breathing hard and fast (<i>shortness of breath</i>)</li> <li>Nose flares out</li> <li>Sinking in of skin between ribs and neck (<i>retracting</i>)</li> <li>Grunting</li> <li>Gray or blue lips or fingernails</li> </ul>  <p>Peak Flow &lt; _____ (&lt;50% of best)</p>	<b>1. Take your RESCUE medicine immediately and get help!</b> <table border="0"> <tr> <td><u>Rescue Medicine:</u></td> <td><u>How much to take:</u></td> <td><u>When to take it:</u></td> </tr> <tr> <td>Albuterol or _____</td> <td> <input type="checkbox"/> 2 puffs by inhaler  <input type="checkbox"/> 4 puffs by inhaler  <input type="checkbox"/> use spacer  <input type="checkbox"/> by nebulizer         </td> <td> <input type="checkbox"/> Repeat every 20 minutes for a total of 3 treatments if not back in the Yellow or Green Zone.         </td> </tr> </table> <b>2. Call your doctor at _____ while giving rescue medicine.</b> <b>3. If you cannot contact your doctor or parent/guardian: Call 911 or go directly to the Emergency Department</b>	<u>Rescue Medicine:</u>	<u>How much to take:</u>	<u>When to take it:</u>	Albuterol or _____	<input type="checkbox"/> 2 puffs by inhaler <input type="checkbox"/> 4 puffs by inhaler <input type="checkbox"/> use spacer <input type="checkbox"/> by nebulizer	<input type="checkbox"/> Repeat every 20 minutes for a total of 3 treatments if not back in the Yellow or Green Zone.
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Helpful Hints:  
 \*Always use a spacer device when using metered dose inhalers.  
 \*Always rinse your mouth after using controller medicine.



WHITE - PATIENT      YELLOW - CHART      PINK - SCHOOL - School Medication Form on back

# ASTHMA ACTION PLAN

## Asthma Action Plan

Target Peak Flow: \_\_\_\_\_ lpm based on  personal best or  predicted best      Height (inches): \_\_\_\_\_  
 Category of Severity:  Mild Intermittent    Mild Persistent    Moderate Persistent    Severe Persistent

Peak Flow > \_\_\_\_\_



### Green Zone Action Steps

1. Avoid triggers that cause your asthma to be worse (smoke, cold weather, allergens, infections, etc.).
2. Monitor peak flow and check for warning signs at least two times a day and always before and after using rescue medicine. Record these numbers as instructed.
3. Take the daily controller medicines listed below:  
 \_\_\_\_\_ puffs of \_\_\_\_\_ times a day, everyday.  
 \_\_\_\_\_ puffs of \_\_\_\_\_ times a day, everyday.

**These medicines are used to control and prevent asthma symptoms. Do not stop taking these without talking to your doctor.**

4.  (check if applicable) \_\_\_\_\_ puffs of \_\_\_\_\_ 10-15 minutes before exercise.

Peak Flow \_\_\_\_\_ to \_\_\_\_\_



### Yellow Zone Action Steps

1. Take \_\_\_\_\_ puffs of \_\_\_\_\_ every \_\_\_\_\_ hours until back to Green Zone. **This is your rescue medicine.** Continue this for 24-48 hours. If you continue to require rescue medicine after 24-48 hours or if you experience asthma symptoms over 2 times a week, call your doctor. Your controller medicine may need to be changed.
2. Always repeat your peak flow and/or check for improvement in warning signs 10-15 minutes after using rescue medicine.
3. Continue taking your daily controller medicine as follows:  
 \_\_\_\_\_ puffs of \_\_\_\_\_ times a day for \_\_\_\_\_ days; then continue as written in the above Green Zone Plan.
4. \_\_\_\_\_

**Always use a spacer when taking metered dose inhalers.**

Peak Flow < \_\_\_\_\_



### Red Zone Action Steps

**This is an emergency and could be life threatening.**

1. Take \_\_\_\_\_ puffs (or  nebulizer via) of \_\_\_\_\_ now and repeat your peak flow and/or check for improvement in warning signs in 10 minutes.
2. If you are not back in the Yellow or Green Zone, repeat above step every \_\_\_\_\_ for a total of \_\_\_\_\_ treatments.
3. **Always** call your doctor at \_\_\_\_\_ to notify him or her of your Red Zone event.  
**Seek medical care immediately if you remain in the Red Zone, if you continue to have difficulty breathing, if you have trouble walking or talking due to shortness of breath or if your lips or fingernails are blue.**

Patient's name \_\_\_\_\_ DOB \_\_\_\_\_  
 School \_\_\_\_\_ Date \_\_\_\_\_  
 Doctor's name \_\_\_\_\_ Pharmacy \_\_\_\_\_

white - patient      yellow - doctor      pink - school      gold - pharmacy or asthma program



**PEDIATRIC ASTHMA PROGRAM**  
 A program of the University Health Systems of Eastern Carolina, which includes PE Courts, Hospital Inpatient, Outpatient Services, Asthma Centers, Home Health and other affiliated services. This program is affiliated with the Department of Pediatrics at East Carolina University.

# Contact Information

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