

ASTHMA MEDICINE DEVICES & DEMONSTRATION

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Commercial Interest Disclosure

Carol Martin, BS, RPFT, AE-C, CHES

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Session Learning Objectives

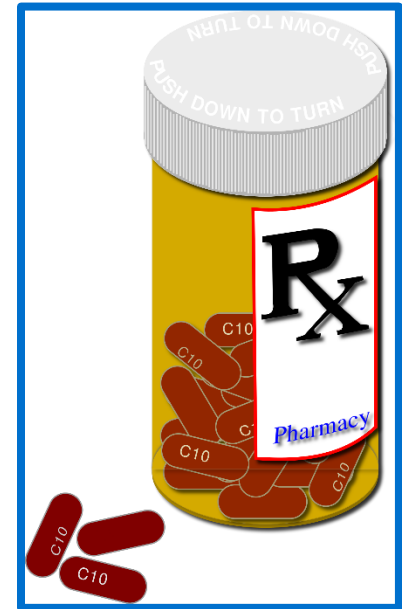
- Discuss asthma education and demonstrate common asthma equipment and devices

This lesson will cover:

- The use of medication delivery devices
- Use of spacing devices
- Use of peak flow meters

One Pill, Two Pill, Red Pill, Blue Pill

- Correctly taking your prescription medications can be a challenge
 - Busy schedules
 - Complicated instructions
 - Side effects
 - Not sure of what they do
 - Take a multitude of different medications
 - Too expensive
- 80% of older adults have at least one chronic health condition
- 50% have at least two chronic health conditions



Respiratory Medications

Maintenance (Controller) Medications

- prevents or controls symptoms before they are present
- taken every day
- starts to work gradually, may last 4 to 24 hours
- may help reduce the need for rescue medication
- (long acting, controller)

Rescue (Quick Relief) Medications

- treats symptoms once they are present
- can quickly help you breathe easier
- works fast and lasts about 4-6 hours
- (short acting, quick relief, reliever)

Many different delivery devices:

- Pressurized Meter Dose Inhalers (pMDIs)
- Spacers vs. Valved Holding Chambers
- Passive Dry Powder Inhalers (DPI-Diskus, Twisthaler, Ellipta, etc.)
- Soft Mist inhalers (SMI)
- Nebulizers

Types of Delivery

MDI	DPI	Slow Mist Inhaler	Nebulizer
Breathe in slowly	Breathe in quickly	Breathe in slowly and deeply	Normal breathing pattern
Portable, compact	Portable, compact	Portable, compact	Easy to use, less coordination required
Works fast	Easy to use	Easy to use	Good for those extremely SOB
Coordination required	Built-in dose counter	Built-in dose indicator	Can deliver more than one med
Multiple steps –priming, actuation, cleaning	Propellant-free	Propellant-free	Can be cheaper for some patients
May not have dose counter	Breath-actuated (less coordination required)	Does not need spacer/ valved holding chamber	Not as portable
Best technique may only deposit 15% of medication in lungs	Must be held level to not lose medication	Needs to be assembled prior to use	Longer treatment times
Using a chamber can increase that to 20-25%	Dependent on patient's inspiratory flow	Multiple steps – priming, actuation, cleaning	Need to keep parts clean
	Do not shake or blow into inhaler		

In Check Dial®

- Checks inspiratory flowrate
 - MDI – 25-60 lpm
 - Auto – 30-60
 - Twist – 60-90
 - Disk – 30-90



Cleaning/Storage of MDI's and DPI's

Cleaning:

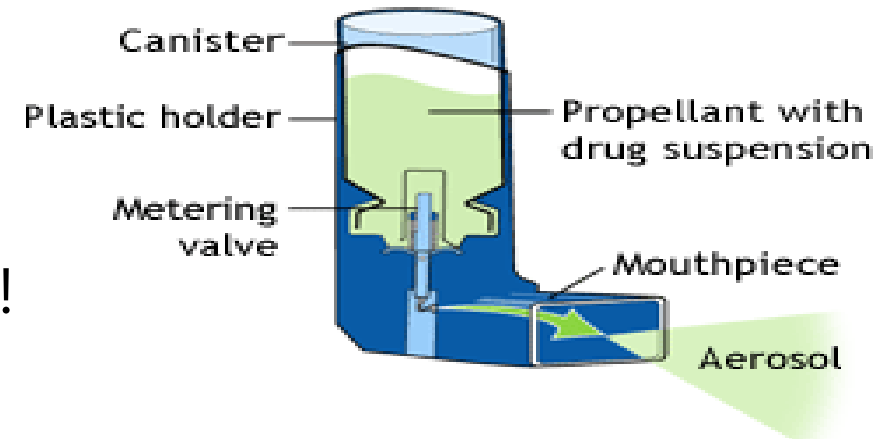
- Most should be cleaned weekly, but a few recommend daily cleanings.
- Each device has it's own recommendation for cleaning.
 - Never use water on a dry powder inhaler

Storage:

- Room temperature (not in hot/cold car)
- Never store dry powder inhaler in humid environment

MDI's

- Priming your inhaler (test sprays)
 - Mixes the ingredients so that each dose contains the right blend of medication and propellant
 - Releasing a spray (some require up to 4 test sprays)
 - Check the package insert for proper priming
- When is it empty
 - Know how many puffs per canister and keep track!
 - Floating/shaking it is not accurate
 - Some newer MDI's have counters



Spacers vs. Valved Holding Chambers

- **Spacers** create "space" between your mouth and the medicine. This space helps the medicine slow down and break into smaller droplets.
 - **Ex. A semi-truck (medicine) needs to slow down when going around a curve in the road (upper airway)**
- **Valved Holding Chambers** include a one-way valve at the mouthpiece. They create space and trap and hold medicine, which gives time to take a slow, deep breath.
 - One-way valve stops you from accidentally exhaling into the tube.
 - Many are lined on the inside with an anti-static coating which prevents medicine from sticking to the sides of the chamber.



MDI with a Holding Chamber/Spacer

1. Remove the caps from the inhaler and the Aerochamber.
2. Insert the inhaler mouthpiece into the rubber end of the Aerochamber.
3. Shake and then place Aerochamber mouthpiece into mouth and close lips.
4. Spray one puff and breathe in through mouth, slowly and deeply for 5 seconds.
5. Hold your breath for 5-10 seconds.
6. Remove device from mouth and breathe out slowly and gently.
7. If instructed to take more than 1 puff, wait a minute, then repeat.
8. Rinse and spit if ICS

Pressurized MDIs



Dry Powder Inhalers



Diskus



Twisthaler



Breo Ellipta



Respiclick

Diskus

1. Hold the device level.
2. Rotate thumb grip while holding case.
3. Push lever until you hear it click.
4. Turn away and breathe out.
5. Put mouthpiece in mouth and breathe in steadily and deeply.
6. Remove from mouth. Hold for 10 sec.
7. Turn away breathe out slowly and gently.
8. Close the Diskus.
9. Rinse and spit.

Ellipta

1. Open the cover of the inhaler. Slide the cover down to expose the mouthpiece. You should hear a “click”.

Do not shake this kind of inhaler.

2. Breathe out
3. Place mouthpiece in between lips and take one long, steady, deep breath. **Do not block the air vents**
4. Remove the inhaler from your mouth and hold your breath for 3-4 seconds
5. Breathe out slowly and gently
6. Close the inhaler

Twisthaler

1. Open the Inhaler. As the cap is lifted off, the dose counter counts down by one
2. Inhale Dose
 - a. Take a fast, deep breath while holding the mouthpiece in a horizontal position
 - b. Hold your breath for 10 seconds (or as long as you comfortably can)
 - c. Breathe out slowly and gently.
3. Replace the cap and twist it clockwise until it clicks. Repeat steps 1 and 2 every time you take a dose. Rinse your mouth after using.

Important — Discard the inhaler 45 days after opening the pouch or when the dose counter reads "00," whichever comes first.

RespiClick

1. Hold the inhaler upright as you open the cap fully.
2. Turn your head and breathe out completely.
3. Place mouthpiece in your mouth and breath in deeply.
4. Hold your breath for 10 sec or as long as you can comfortably.
5. Remove device from mouth and breathe out slowly and gently.
6. Close the cap firmly on the mouthpiece.
7. If you are instructed to take more than one puff, wait a minute, and then repeat.

Soft Mist Inhaler

- Slow mist inhaler (Respimat®)
- Mimics MDI and Nebulizer
- No need for a spacer/chamber
- FDA Approved 9-16-15 for Asthma
 - Over 12 yrs & uncontrolled on ICS/LABA
- Also used for COPD

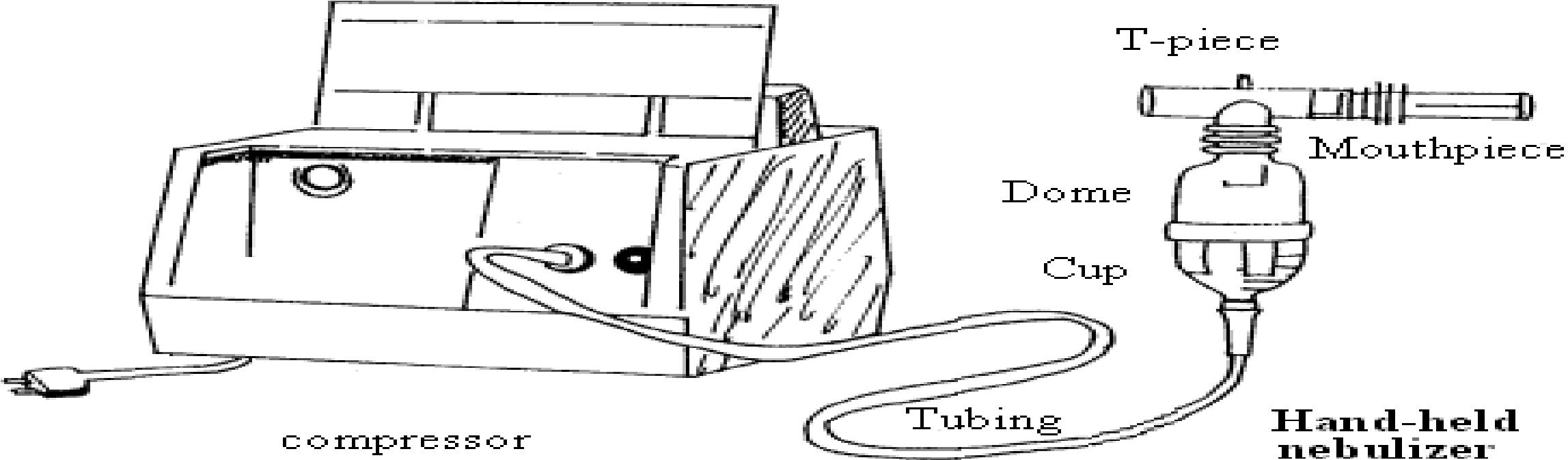
[Video](#)



Nebulizers



Nebulizers



Nebulizers

1. Check medication: expired? Damaged? Discolored?
2. Add prescribed amount of medicine to medication cup.
3. Attach one end of the tubing to the outlet nozzle on the machine and the other end to the nebulizer cup.
4. Attach mouthpiece or mask to the top of the nebulizer cup.
5. Turn the nebulizer unit ON.
6. Place the mouthpiece between your teeth and close your lips, or, if using the mask, place it on your face.
7. Breathe in and out slowly through device.
8. Continue until the medicine in the cup is used up. (5-20 min)
9. Open and shake out nebulizer cup
10. Store in a plastic bag

Cleaning nebulizers

1. Remove the mask/mouthpiece and T-shaped part of the cup.
(Set tubing aside.)
 2. Once/day wash with mild soap and warm water.
 3. Rinse in warm water for 30 sec.
 4. Shake off excess water and air dry.
(NEVER put compressor in water.)
- 1-2/week soak in 1 part distilled white vinegar:2 parts distilled water for 30 min.
Rinse and air dry.
 - Store nebulizer in a resealable plastic bag.
 - Replace nebulizer as instructed.



Peak Flow Meters

- Measures (Peak Expiratory Flow Rate) PEFR
- Normal values based on age, height, and gender
- Effort dependent
- Record every AM and PM (can create a compliance issue)
- Do 3 maneuvers, record the best value
- Keeping daily measurements helps track trends and even signal a potential asthma exacerbation
- Consider for Moderate-Severe Persistent Asthma or patients who are poor perceivers of their symptoms



Resources

- American Lung Association YouTube Channel for instruction videos
 - <http://bit.ly/2jdpL0w> last accessed 9/10/2018

Patient Education Materials

- www.lung.org



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