

## USING AN MDI & SPACER /DPI

### Statement of the Problem

One of the goals of asthma management is to effectively deliver medication. The use of a spacer helps to deliver the medication from certain metered dose inhalers (MDI) more effectively into the lungs. Proper technique is important when using either an MDI or a dry powder inhaler (DPI).

### Background

The spacer exists in order to deliver the old type of MDI that used CFC propellant appropriately. It required more space between the device and the mouth so that the medication would be inhaled into the lungs. Without the spacer the medication was delivered to the back of the throat. There it was absorbed losing 20% of medication that was needed directly to the lungs. The spacer for the CFC propelled MDIs made medication delivery effective.

Most MDIs currently use HFA propellant. You don't need a spacer for these inhalers because they are delivered in a mist that is heavier so its spray is not as forceful and is not delivered to the back of the throat. The mist falls evenly into the lungs with your child's inhale.

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Most people are prescribed inhaler medications that use a new propellant that is ozone-safe. The new propellant is called Hydrofluoroalkanes (HFAs) you will see it written on the inhaler itself. The inhaler has a chemical propellant in it to push the medication out of the inhaler in a mist aerosol. The old one was called Chlorofluorocarbon (CFC) and it depleted the ozone layer. The change to CFC free MDIs is part of a larger transition in 1996 that prohibited the production and import of CFCs in order to protect the earth from harmful ultraviolet radiation that can lead to serious health effects.

(<http://www.epa.gov/ozone/title6/exemptions/inhalers.html>).

MDIs are handheld devices that deliver a specific amount of medication in aerosol form and if you use an HFA inhaler it is delivered in a mist. DPIs are also handheld devices that deliver a specific amount of medication in a dry powder form as you inhale through it. It doesn't contain propellants or chemicals, just your medication.

## ASSESSMENT

Check to see if child is using a spacer or holding chamber when using MDIs.

- Assess prior education received by client and client's knowledge.
- Have child demonstrate MDI (using spacer/holding chamber) and/or DPI technique.

## Educational Messages

- Breathing asthma medicines into the lungs is one of the safest and most effective ways of taking asthma medicines. MDIs (metered dose inhalers) or DPIs (dry powder inhalers) are the most common ways of getting asthma medicines to the lungs.

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### MDI'S

- A spacer, or holding chamber, is a device that attaches to a MDI. It makes using a MDI easier. You don't need one for a DPI.
- You can find what type of MDI inhaler you use (whether it is a CFC or HFA) because it is written right on the inhaler. Most rescue medicine inhalers are HFAs now, and most preventive medicines are still CFCs requiring the use of the spacer. (Please check this with Jim, this may now have changed).
- Use a spacer or holding chamber with each of your MDIs, **every time** you use one.
- The use of a spacer or holding chamber with the MDI helps more of the inhaled medicine get to the lungs where it is needed to help asthma. Less of the medicine ends up on the tongue or back of the throat.
- The spacer or holding chamber holds the medicine long enough for you to take a big breath and inhale the medicine deeply.
- The spacer or holding chamber helps you not cough when using your MDI.

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### PROPER MDI TECHNIQUE INCLUDES:

1. Stand up.
2. Shake the MDI a few times to mix medicine.
3. Attach the MDI to the spacer.

4. Breathe out completely.
5. Place spacer in your mouth, close mouth tightly around it.
6. Press MDI to release one puff of medicine into the spacer.
7. Breathe in slowly and deeply.
8. Hold your breath for the count of 10.
9. If you are supposed to take a second dose, wait one minute, and then repeat.

To keep the spacer clean, wash with soap and water, rinse well, and let dry on a clean towel.

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#### TAKE CARE OF YOUR INHALERS:

1. Don't store them in the car or other hot places.
2. Discard them when they expire and get new ones.
3. Keep them in a box in the same place so you can always find them.
4. Keep the canisters in the original plastic cases so they don't get mixed up.
5. Keep your inhalers with a copy of your Asthma Action Plan. This will help you or others know how to administer your medications properly given they symptoms you are experiencing.

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#### DPI'S

Proper DPI technique includes:

1. Stand up.
2. Click the disk or wheel as instructed to prepare for the next dose of medicine.
3. Breathe out.
4. Place mouthpiece in mouth with lips sealed around it.
5. Breathe in deeply and forcefully.
6. Hold breath for the count of 10.
7. If you are supposed to take a second dose, wait one minute, and then repeat.

A spacer or holding chamber is not necessary with a DPI. Medicine is automatically inhaled when a breath is taken.

## Actions

CHW ACTIONS	CAREGIVER/CHILD ACTIONS
<ul style="list-style-type: none"><li>• Demonstrate correct use of MDI with spacer/holding chamber</li><li>• Demonstrate correct use of DPI (if prescribed for patient).</li></ul>	<ul style="list-style-type: none"><li>• Demonstrate correct use of MDI with Spacer/Holding Chamber.</li><li>• Demonstrate correct use of DPI (if using).</li><li>• Consistently use Spacer/Holding Chamber with MDI.</li><li>• Keep Spacer/Holding Chamber clean.</li></ul>

## Supplies

- Spacer or Holding Chamber to use with MDI

## Education Handouts

- “How to Use Your Inhaler”
- “How to Use Your DPI”



## Referrals