

## What You Need to Know about Metered Dose Inhalers and the HFA Propellant

There are a number of ways to deliver inhaled medication. They include:

- Metered-dose inhaler (MDI)
- Metered-dose inhaler with spacer/holding chamber
- Dry powder devices
- Soft-mist device
- Nebulizer

This information will focus on the metered-dose inhalers. The metered-dose inhalers contain an HFA (hydrofluoroalkane) propellant. The table below is a current list of metered-dose inhalers with the HFA propellant.



### How do I clean my HFA MDI?

The HFA propellant in the metered-dose inhaler may build up where the metal canister meets the plastic case of the MDI. Cleaning your MDI is different depending on the medicine in the MDI. The table below describes how to clean the plastic case for each medicine with an HFA propellant.

### How do I prime my HFA inhaler?

Priming is spraying the medicine into the air before you use the MDI. This allows for an accurate dose when you inhale the medicine. MDIs need to be primed before the first dose and when not used for a period of time. Priming your MDI is different depending on the medicine in the MDI. The table below describes how to prime the MDI with each medicine containing an HFA propellant.

## HFA Inhalers

Medicine Name Brand (Generic)	Number of puffs actuations of medicine in canister	Cleaning	Priming	Other
<b>Bronchodilator Medicine (short-acting)</b>				
Atrovent® HFA (ipatropium)	200	<ol style="list-style-type: none"> <li>1. Take the metal canister out of the plastic case.</li> <li>2. Wash the plastic case weekly, running water through the case.</li> <li>3. Shake off excess water.</li> <li>4. Air dry.</li> <li>5. Put the plastic case and metal canister together when completely dry.</li> </ol>	<p>Before first dose: 2 sprays</p> <p>After 3 days of non-use: 2 sprays</p>	
ProAir HFA (albuterol)	200 Dose counter on MDI.	<ol style="list-style-type: none"> <li>1. Take the metal canister out of the plastic case.</li> <li>2. Wash the plastic case weekly, running water through the case.</li> <li>3. Shake off</li> </ol>	<p>Before first dose: 3 sprays</p> <p>After 2 weeks of non-use: 3 sprays</p>	

		<p>excess water.</p> <ol style="list-style-type: none"> <li>Air dry.</li> <li>Put the plastic case and metal canister together when <b>completely dry</b>.</li> </ol>		
Proventil® HFA (albuterol)	200	<ol style="list-style-type: none"> <li>Take the metal canister out of the plastic case.</li> <li>Wash the plastic case weekly, running water through the case.</li> <li>Shake off excess water.</li> <li>Air dry.</li> <li>Put the plastic case and metal canister together when <b>completely dry</b>.</li> </ol>	<p>Before first dose: 4 sprays</p> <p>After 2 weeks of non-use: 4 sprays</p>	
Ventolin® HFA (albuterol)	200 Dose counter on MDI.	<ol style="list-style-type: none"> <li>Take the metal canister out of the plastic case.</li> </ol>	<p>Before first dose: 4 sprays</p> <p>After 2 weeks of</p>	

	Replace when counter gets to 000 or 6 months after opening package, whichever comes first	<ol style="list-style-type: none"> <li>2. Wash the plastic case weekly, running water through the case.</li> <li>3. Shake off excess water.</li> <li>4. Air dry.</li> <li>5. Put the plastic case and metal canister together when <b>completely dry.</b></li> </ol>	<p>non-use: 4 sprays</p> <p>When dropped: 4 sprays</p> <p>After washing: 1 spray</p>	
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Medicine Name Brand (Generic)	Number of puffs or actuations of medicine in canister	Cleaning	Priming	Other
Xopenex HFA (levalbuterol)	200	<ol style="list-style-type: none"> <li>1. Take the metal canister out of the plastic case.</li> <li>2. Wash the plastic case weekly, running water through the case.</li> <li>3. Shake off excess water.</li> <li>4. Air dry.</li> </ol>	<p>Before first dose: 4 sprays</p> <p>After 3 days of non-use: 4 sprays</p>	

		5. Put the plastic case and metal canister together when <b>completely dry</b>		
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**Bronchodilator Medicine (long-acting combination)**

Bevespi® Aerosphere (formoterol & glycopyrrate)	120 Dose indicator on MDI.  Replace when indicator gets to 000 or 6 months after opening package, whichever comes first	<ol style="list-style-type: none"> <li>1. Take the metal canister out of the plastic case.</li> <li>2. Wash the plastic case weekly, running water through the case.</li> <li>3. Shake off excess water.</li> <li>4. Air dry.</li> <li>5. Put the plastic case and metal canister together when <b>completely dry</b>.</li> </ol>	<p>Before first dose: 4 sprays</p> <p>After 7 days of non-use: 2 sprays</p>	
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Medicine Name	Number of puffs or	Cleaning	Priming	Other
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Brand (Generic)	actuationsof medicine in canister			
<b>Anti-Inflammatory Medicine</b>				
Alvesco® (ciclesonide)	60 Dose counter on MDI Replace when counter gets to 0. If MDI dropped dose counter may not be accurate.	1. Avoid placing the MDI in water.	Before first dose: 3 sprays After 10 days of non-use: 3 spray	Two doses available (80, 160) Rinse mouth with water, gargle and spit out the water after using the medicine.
Asmanex® (mometasone)	120 Dose counter on MDI Replace when counter gets to 000.	1. Clean the mouthpiece weekly by wiping with a dry tissue or cloth. Do not wash or put any part of the inhaler in water.	Before first dose: 4 sprays After 5 days of non-use: r sprays	Two doses available (100, 200) Rinse mouth with water, gargle and spit out the water after using the medicine.
Flovent® HFA (fluticasone)	120 Dose counter on MDI Replace when counter gets to 000.	1. Remove the cap. Keep the canister in the case. 2. Wet a cotton swab. Wipe the opening where the metal canister meets the plastic case.	Before first dose: 4 sprays After 1 week of non-use: 1 spray When dropped: 1 spray	Three doses available (44, 110, 220) Rinse mouth with water, gargle and spit out the water after using the medicine. Store the MDI with the mouthpiece

down.

<b>Medicine Name Brand (Generic)</b>	<b>Number of puffs or actuations of medicine in canister</b>	<b>Cleaning</b>	<b>Priming</b>	<b>Other</b>
<b>Combination Anti-Inflammatory &amp; Bronchodilator Medicine</b>				
Symbicort® (budesonide and formoterol)	120 Dose counter on MDI  Replace when counter gets to 0 (red zone) or 3 months after opening the package whichever comes first.	1. Wipe the mouthpiece of the plastic case with a dry cloth weekly. Do not wash or put any part of the inhaler in water.	Before first dose: 2 sprays After 7 days of non-use: 2 sprays When dropped: 2 sprays	Two doses available (80, 160) Rinse mouth with water, gargle and spit out the water after using the medicine. Do not take the unit apart. Store the MDI with the mouthpiece down.
Advair® (fluticasone and salmeterol)	120 Dose counter on MDI Replace when counter gets to 000.	1. Remove the cap. Keep the canister in the case.  2. Wet a cotton swab. Wipe the opening where the metal canister	Before first dose: 4 sprays After 4 weeks of non-use: 2 sprays When dropped: 2 sprays	Three doses available (45, 115, 230) Rinse mouth with water, gargle and spit out the water after using the medicine.

		meets the plastic case.		
Dulera® (mometasone and formoterol)	120 Dose counter on MDI Replace when counter gets to 000	1. Wipe the mouthpiece with a dry, lint-free cloth every 7 days of use.	Before first dose: 4 sprays After 5 days of non-use: 4 sprays	Two doses available (100, 200) Rinse mouth with water, gargle and spit out the water after using the medicine.

### How do I use an HFA inhaler?

Correct technique is important when inhaling your medicine with any device. Take your inhaled medicine with you when you visit the doctor. Your doctor or nurse can watch your technique to make sure you are getting the medicine.

#### Remember to follow these steps when you use your MDI:

1. Remove the cap from the inhaler.
2. Hold the inhaler with the mouthpiece at the bottom.
3. Shake the inhaler. This mixes the medication properly.
4. Gently breathe out.
5. Check the box with the technique your health care provider recommends and follow the step:
  - Use a spacer/holding chamber – Place the MDI in the spacer holding chamber. Seal your lips around the spacer/holding chamber mouthpiece.
  - Use open mouth technique - Hold the mouthpiece 1½ - 2 inches (2 - 3 finger widths) in front of your mouth.
  - Use closed mouth technique – Place the mouthpiece in your mouth with your lips sealed tightly around the mouthpiece.
6. Tilt your head back slightly and open your mouth wide.
7. Press the inhaler and at the same time begin a slow, deep breath.



8. Continue to breathe in slowly and deeply over 3 - 5 seconds. Breathing slowly delivers the medication deeply into the airways.

9. Hold your breath for up to ten seconds. This allows the medication time to deposit in the airways.

10. Resume normal breathing.

11. Repeat steps 3 - 10 when more than one puff is prescribed.

## Can I still use a spacer/holding chamber with my HFA MDI?

A spacer/holding chamber is a device that is placed between the MDI and your mouth.

A spacer/holding chamber can improve your MDI technique. The spacer/holding chamber helps you coordinate the timing of activating the MDI and breathing in. Children and older adults may find it difficult to coordinate the timing and may find a spacer/holding chamber helpful. Anybody may find it difficult to coordinate the timing when having trouble breathing and may find a spacer/holding chamber helpful.



A spacer/holding chamber can also trap larger particles in the spacer. These particles are more likely to stay in the mouth and cause more side effects.

When using a spacer/holding chamber with the HFA propellant the spacer/holding chamber should be anti-static. The spacer/holding chamber should also have a one-way valve to help you coordinate the timing of activating the MDI and breathing in. The space in the spacer/holding chamber should be large enough. The AeroChamber® is a common spacer/holding chamber.



## How can I tell if the MDI is empty?

The canister of your MDI is marked with the number of puffs (actuations) in the canister. There are more puffs of propellant in the MDI than medicine. The MDI may feel as if there a number of puffs left when you shake the inhaler, but the medicine is gone and only propellant is left. It is a good idea to figure out how long the medicine will last. Then plan ahead so that you get a new inhaler before the old one is used up.

Some inhalers have a built in counter to show how long the medicine will last. The numbers count down when a dose is sprayed. When you get to 000 stop using the inhaler and start using a new inhaler. If your inhaler does not have a counter, write the

date you start using each inhaler on the inhaler. Place a piece of tape on the plastic case and write the date on the tape.

### **Date & Estimate**

If you use your MDI every day you can keep track of how much medicine you use by Date & Estimate:

\_\_\_\_\_ The number of puffs in your inhaler  
÷ \_\_\_\_\_ Divided by the number of puffs you take each day  
= \_\_\_\_\_ Equals the number of days the inhaler will last

Example:

200 puffs in your inhaler

÷ 4 puffs a day

50 days your inhaler will last

Once you know the number of days your inhaler will last, add the number of days to the day you start using the medicine. Along with the date you start using the inhaler, write the date you need to stop using the inhaler on the plastic case.

### **Date & Tally**

If you use your MDI when you have trouble breathing you can keep track of how much medicine you use by Date & Tally:

Place a large piece of tape on the MDI. Remember to write the date you start using the MDI on the tape. Each time you use the MDI place a tally mark on the MDI (one tally mark can equal 2 puffs). You can count the tally marks to see when all the medicine has been used. You can also place tally marks on a calendar or paper near the inhaler.

**Whichever technique you use, remember to figure out how long the medicine will last. Then plan ahead so that you get a new inhaler before the old one is used up.**

**Whichever device you use, make sure you know:**

- How to use the device
- How to tell when the device is empty
- How to clean the device

Also check the package insert that comes with the medicine for more information.

Visit our website for more information about support groups, clinical trials and lifestyle information.

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