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# Correct use of metered dose inhalers (MDIs)

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## Tips for Correct Use of Metered Dose Inhalers (MDIs)

### Advantages

<ul style="list-style-type: none"> <li>• <i>Easy-to-use and can be taken with you.</i></li> <li>• <i>Sends your medicine directly into the large and small breathing tubes (bronchial tubes) of your lungs.</i></li> <li>• <i>Once inhaled it quickly helps you to breathe better.</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Because your medicine is delivered directly to your lungs it is more effective and causes fewer medicine-related side effects. This is different from a pill or a shot which sends medicine to your entire body.</i></li> </ul>
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To get the best results from you inhaler, have your healthcare professional teach you how to correctly use it. Also, follow the simple tips on this sheet; they'll serve as a reminder.

### Types of Inhalers

Wet Metered Dose Inhalers	Dry Powder Metered Dose Inhalers
<ul style="list-style-type: none"> <li>• Description: small canister attached to a mouthpiece, often "L" shaped, medicine and a pressurized propellant inside.</li> <li>• Propellant forces medicine into lungs as you breathe in.</li> <li>• Requires priming by using 2 to 3 sprays before first use or if not used for several days.</li> <li>• Shake well before each use.</li> <li>• Can be used with a spacer (a tube that attaches to the mouthpiece to help make the medicine go deeper into the lungs and increases effectiveness).</li> <li>• Clean the mouthpiece with water and dry.</li> </ul>	<ul style="list-style-type: none"> <li>• Description: a single "pill" or "tube" shaped device (<i>Diskus, Rotadisk, Turbuhaler</i>), dry medicine is inside.</li> <li>• Your breathing in forces medicine into your lungs. It does not have a propellant inside.</li> <li>• Does not require priming after activating and loading the first dose.</li> <li>• Does not require shaking.</li> <li>• No spacer is needed or should be used.</li> <li>• Clean the mouthpiece when needed with water and dry immediately. Do not get the unit wet or place in water.</li> </ul>

### Steps for Use

The exact steps will be taught to you by your healthcare professional and will depend on the type of inhaler you have. The steps below are common to all inhalers:

1. Take off the cap and shake the inhaler. If you're using a dry inhaler, just open it.
2. Breathe out all the way.
3. Hold the inhaler the way you were shown. If you are using a dry powder inhaler, activate it so that the powder is ready to be inhaled.
4. As you start breathing in slowly through your mouth, press down on the inhaler. If you have a spacer attached to the inhaler, press down on the inhaler, wait a few seconds, then breathe in. If you use a dry powder inhaler, put the mouthpiece to your lips and breath in quickly.
5. Hold your breath as you count to 10 slowly, if you can.
6. Breathe out slowly.
7. If your prescription calls for another puff, wait about a minute, shake if you're using a wet inhaler, and repeat.

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### ***What to Do If You Have More than One Inhaler Prescription***

- One inhaler medicine (a **bronchodilator**) relaxes and opens the breathing tubes.
- Another medicine (an **anti-inflammatory**) decreases swelling and irritation.
- **Always use the inhaler that opens the breathing tubes first (bronchodilator).**
- If your prescription calls for more than one puff, wait about a minute, and also shake between puffs if you're using a wet inhaler.
- If your doctor has prescribed another inhaler, wait for 5 minutes before using it.
- Your anti-inflammatory inhaler should be last.
- If you have used an anti-inflammatory inhaler, always rinse your mouth with water and spit it out. Doing this will prevent yeast infections in your mouth.

### ***Don't Run Out of Your Inhalers***

Your best breathing depends on using your inhalers as your doctor prescribed. Make sure that you always have enough medicine in your inhalers or you have a fresh refill on hand.

- For inhalers that you use daily:
  - Your pharmacist can tell you how many days' supply is in each inhaler. When you start using a new inhaler write down the date it will be used up. Don't use it after that date, since the correct dose may not be delivered. To know how many puffs you have left in your inhaler, count the puffs you used.
- For inhalers that you use when they're needed for symptoms:
  - Your pharmacist can tell you how many puffs are in each inhaler. Keep track of how many puffs you've used.
- Some of the newer inhalers have counters on them so you'll always know.
- Don't put the canister from your inhaler in water (the "float" test) to see if it's empty, that doesn't work.

### ***Storage***

Always store your inhalers at room temperature or on your person if you are going out. Don't leave them in a car.

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## Correct Use of Metered Dose Inhalers (MDIs)

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### **Background**

Do patients say that their asthma inhaler medicine is not working? If they say this, they may not be using it correctly.

Misuse is common. Patients may be using their inhaler longer than they should. This often results from relying on inaccurate methods to determine how full their pressurized MDI is.<sup>1</sup> Failure to shake their MDI before each use is also commonplace. In a small survey of asthma patients only 50% shook their pressurized inhaler before use.<sup>1</sup> Sometimes they don't re-shake between puffs.<sup>2</sup> This can reduce the total medication dose delivered by 25.5% and "respirable" dose by 35.7%.<sup>3</sup> Storing a pressurized MDI with stem-down was shown to reduce the total dose delivered on the first actuation by 25%.<sup>3</sup>

Inappropriate storage of MDIs can cause considerable problems. Many patients rely on mail order pharmacies for their convenience and because of prescription plan requirements. With mail order delivery, medications are exposed to environmental factors in transit such as extreme heat or cold that can affect potency.<sup>4</sup> Storage outside of controlled-room temperature, such as in cars, can cause problems.

### **Commentary**

Patient education on correct use, sequencing, storage, and dose counting is essential. Repeated reminders help to improve compliance and inhaler efficacy.

If patients are using wet or pressurized MDIs remind them to count the number of puffs that they use. Write down the number of doses that they have in their "as needed" wet inhalers when you give it to them. Teach them to keep a count

and subtract the number of doses they use from the number you give them. For their daily wet inhalers, calculate the number of days supply they have and give them that number. Before using the new inhaler ask them to look at their calendar and determine the day the inhaler's supply will end based on your calculated number. Counsel them to write this day on the actual inhaler as a reminder. Newer dry or powder-containing inhalers usually have dose counters. You might suggest a dry inhaler for patients with compliance problems, when a similar product is available in this form.

Instruct patients not to place their inhaler in water ("float test") to determine if it's still full.<sup>5</sup> This practice is potentially dangerous.<sup>2</sup> The National Asthma Education and Prevention Program recommends counting doses.<sup>6</sup>

Wet or pressurized inhalers also need priming before they are initially used or if not used for several days. Remind patients about priming. These inhalers must be shaken before each use for accurate medication delivery. Instruct patients to not only shake before use but also between puffs. Dry inhalers have the advantage of not requiring shaking. Dry inhalers do need to be loaded before their first use.

It is always helpful to review inhaler sequencing with patients. Sometimes they can become confused. Remind them that their bronchodilator always comes first.

Tell them to store their inhalers at room temperature or on their person if they are out.

Call patients to remind them about refills and ask them to call you well before they run out of their medication.

*More . . .*

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