

Metered Dose Inhalers Education Plan

Getting ready to learn about metered dose inhalers

Learning something new can be hard. It is even harder if you are not feeling well. The purpose of this education plan is for you and the staff to review this information together. Here are some good things to tell the staff.

- Who you want to learn with you. We would like to have someone who will be helping you at home learn with you.
- The best way for you to learn. Do you learn best by reading a book or pamphlet, or by doing things yourself?
- If you are not feeling well, if you are in pain or you cannot focus right now.

This information is important to your health. We may explain something more than once. We will be giving you information in small bits over several days. If there is something you don't understand it is OK to ask us to explain.

What I need to learn about metered dose inhalers

By the time I leave the hospital I will be able to show or tell staff:

1. What kinds of inhaled medicine I will be using.
2. How often I should use my inhaler or medicine (s).
3. How I will use my inhaler.

The staff will use three questions to teach me about metered dose inhalers:

1. What is my main problem?
2. What do I need to do?
3. Why is this important to me?

The staff will ask me to repeat back important points in my own words, or ask me to show what I have learned. They want to make sure that I know about my breathing and how to use my inhaler correctly.

What is my main problem?

I am having trouble breathing. Sometimes I will need to use medicine that I inhale. It is important that I know how to use my inhaler the right way.

What do I need to do?

- I will be able to tell the staff about the inhaled medicine I will be using.
- I will be able to tell staff what kinds of medicine I will be using and how often I should use them.
- I will be able to tell staff how I will take these medicines

I will be using a:

Metered dose inhaler (MDI) with or without holding chamber/spacer

The medicine(s) I take with a metered dose inhaler is/are:

Name: _____ # of Puffs: _____ When: _____

Name: _____ # of Puffs: _____ When: _____

Dry Powder Inhaler (DPI)

The medicine(s) I take with a dry power inhaler is/are:

Name: _____ # of Puffs: _____ When: _____

Name: _____ # of Puffs: _____ When: _____

Soft Mist Inhaler (SMI)

The medicine (s) I take with a soft mist inhaler is/are:

Name: _____ # of Puffs: _____ When: _____

Name: _____ # of Puffs: _____ When: _____

I will be able to tell the staff how I will use my MDI inhaler.

Priming your MDI:

If you are using an inhaler for the first time or have not used the medication within the last two weeks, you will need to prime the inhaler by following these steps:

1. Remove the cap from the inhaler
2. Shake the inhaler four to five times
3. Spray the inhaler into the air until you see a full puff of medication come out of the inhaler. You may need to do this a few times.
4. Your inhaler is now primed and ready to use.

Steps for using a MDI:

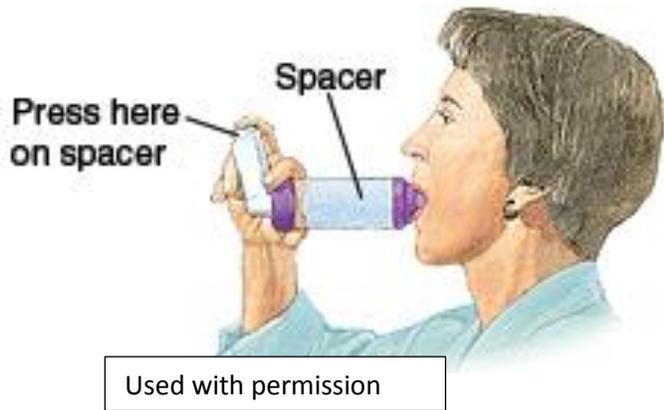
1. If this is the first time, you are using this inhaler, or if it has been more than two weeks, since you last used your inhaler, you must first prime your inhaler. (See instructions above.)
2. Remove the cap from your inhaler.
3. Shake your inhaler 4 to 5 times.
4. Breathe out completely.
5. Place the first two fingers of one hand on the top of the inhaler and the thumb of the same hand on the bottom of the inhaler.
6. Place the mouthpiece of the inhaler into your mouth and close your lips around the mouthpiece.
7. Begin a long, slow, deep breath in, compress the inhaler canister between your fingers, and thumb one time. Continue to breathe in slowly and deeply.
8. Hold your breath for 5 to 10 seconds.
9. Exhale.
10. Wait at least one full minute before repeating steps 4-9.

If you are unable to hold your breath for ten seconds, you should hold as long as you can. Waiting one minute between puffs of medication is important to allow the first puff of medicine to start working. The second puff of medicine can then get deeper into your lungs.

Using a holding chamber or spacer with a MDI

Steps for using a holding chamber or spacer with your MDI:

1. Remove the caps from your inhaler and the chamber.
2. Insert the mouthpiece of the inhaler securely into the back of the chamber.
3. If a mask is needed, place the mask onto the mouthpiece end and gently twist until it fits securely.
4. Shake the chamber and inhaler 4-5 times.
5. Place your lips around the mouthpiece to form a tight seal. Exhale. Spray one puff of medicine into the chamber and immediately begin to inhale slowly, taking a full deep breathe.
6. If the flow alert “whistle” sounds, breathe in more slowly.
7. Hold your breath for up to 8 seconds and then breathe out.
8. Or, if using a mask, press and hold the mask over the mouth and nose. Spray one puff of medicine into the chamber and breathe in and out for 6 breaths.
9. If your doctor has instructed you to take more than one puff of medicine, wait for one minute and then repeat steps 5-8.



I will be able to tell the staff how I will use my DPI inhaler.

1. Prepare & open the inhaler
2. Load the dose (see specific inhaler instructions)
3. Exhale normally
4. Place the mouthpiece between your lips and close your lips around it
5. Take a long steady, deep breath in through your mouth
6. Remove the inhaler from your mouth
7. Hold your breath for at least 5 to 10 seconds
8. Breathe out normally

I will be able to tell the staff how I will use my SMI inhaler.

1. Prepare & open the inhaler
2. Load the dose (see specific inhaler instructions)
3. Exhale normally
4. Place the mouthpiece between your lips and close your lips around it
5. Take a long steady, deep breath in through your mouth
6. Remove the inhaler from your mouth
7. Hold your breath for at least 5 to 10 seconds
8. Breath out normally

Why is this important to me?

I need to be able to take my medicine the right way to treat or prevent episodes of breathing problems. I want to be sure the right amount of medicine is used each time. I do not want to waste my medicine.

Metered Dose Inhaler

Resources for staff:

- Bronson Policy RC 36.90 ([Bronson Methodist Hospital Manuals](#), type in RC 36.90 in the search box)

Teaching Tools:

- Metered dose inhaler and placebo inhaler if available.
- Respiratory care staff to use specific medication instruction sheets located on the respiratory care webpage of the Bronson Intranet as needed.
- Patient & family education plans - COPD and asthma with action plans (Green, Yellow & Red Zones)

References:

- *Global Strategy for the Diagnosis, Management and Prevention of COPD*, Global Initiative for Chronic Obstructive Lung Disease (GOLD) 2016. Available from: <http://goldcopd.org/>.
- AARC Clinical Practice Guideline: Aerosol Delivery Device Selection for Spontaneously Breathing Patients: 2012. *Respiratory care* 2012, 57 (4): 613-26. Access full text [here](#).
- Device Selection and Outcomes of Aerosol Therapy: Evidence-Based Guidelines. *Chest* 2005, 127:335-371 Access full text [here](#)

Approved by:

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Are there any contraindications to this teaching? Age and ability of the patient help to determine type of delivery device to use. Cognitive ability to follow directions is essential for teach back.

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Drug: Brand	Generic	Inhaler (mcg)	Number of puffs Or Vials	Solution for nebulizer (mg)	Duration of action (hours)
Beta 2 Agonists- Short Acting- Rescue					
Albuterol		90 HFA-MDI	1-2 Q 4-6 PRN	0.63mg/3ml 1.25mg/3ml 2.5 mg/3 ml	4-6
Proair, Proventil, Ventolin	Albuterol	90 HFA-MDI	1-2 Q 4-6 PRN		4-6
Xopenex	Levalbuterol	45 HFA-MDI	1-2 Q 4-6 PRN 1 vial TID	0.63mg/3ml 1.25mg/3ml	6-8 6-8
Beta 2 Agonists- Long Acting- (LABA)					
Foradil	Fomoterol	12 DPI	1 BID		12 +
Serevent	Salmeterol	50 DPI	2 BID		12 +
Brovana	Arfomoterol		1 vial BID	15 mcg/2 ml	12 +
Perforomist	Fomoterol Fumarate		1 Vial BID	20 mcg/2 ml	12 +
Arcapta Maleate	Indacaterol Maleate	75 DPI	1 Daily		24
Striverdi Respimat	Olodaterol	5 SMI	2 Daily		24
Anticholinergic- Short Acting (IB)					
Atrovent	Ipratropium Bromide	17 HFA-MDI	2 QID		4-6
Ipratropium Bromide			1 Vial QID	0.5mg/2ml	4-6
Anticholinergic- Long Acting- (LAMA)					
Spiriva Handihaler	Tiotropium	18 DPI	1 Q day		24
Spiriva Respimat	Tiotropium	5 SMI	2 Q day		24
Tudorza Pressair	Aclidinum Bromide	400 DPI	1 BID		12
Incruse Ellipta	Umeclidinum	62.5 DPI	1 Q Day		24
Long-Acting Anticholinergic plus Long-Acting B2 Agonist (LAMA/LABA)					
Anoro/Ellipta	Umeclidinum-Vilanterol	62.5/25 DPI	1 Q Day		24
Stiolto Respimat	Tiotropium- Olodaterol	5/5 SMI	2 Q Day		24
Short-Acting Anticholinergic plus B2 Agonist (IB/SABA)					
Duoneb	Ipratropium Bromide- Albuterol		1 vial Q QID	0.5mg/2.5mg /3 ml	4-6
Combivent Respimat	Ipratropium Bromide- Albuterol	20/100 SMI	1 QID		4-6
Mucolytic					
NAC, Mucomyst	N-acetylcysteine		1 vial TID-QID	600 mg	12
Inhaled Glucocorticosteroids (ICS)					
Qvar	Beclomethasone	40, 80 HFA- MDI	1-2 BID		12
Pulmicort	Budesonide	90, 180 DPI	1-2 BID 0.5 Vial BID or 1 vial Q Day	0.25mg/2 ml 0.5mg/2 ml	12 12
Flovent	Fluticasone Propionate	44-220 HFA 100-250 DPI	1 BID		12 12
Arnuity Ellipta	Fluticasone Furoate	100, 200 DPI	1 Q Day		24
Asmanex	Mometasone	220 DPI	1 Q Day-Evening		24
Alvesco	Ciclesonide	80, 160 HFA	1 BID		12
Inhaled Glucocorticosteroids plus Long-Acting B2 Agonist (ICS/LABA)					
Symbicort	Budesonide- Fomoterol	50/4.5	1 BID		12
Advair Diskus	Fluticasone- Salmeterol	100/50 250/50 500/50	1 BID		12 12 12
Advair	Fluticasone- Salmeterol	45/21 115/21 230/21 HFA	2 BID		12 12 12
Dulera	Mometasone Furoate- Fomoterol Furoate	100/5 200/5 HFA	2 BID		12 12
Breo Ellipta	Fluticasone Furoate- Vilanterol	100/25 DPI	1 Q Day		24

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Scripting for Staff to use with Patients & Families

A prescription from your doctor will tell you how much medication to take and how often. Follow your doctor's instructions. Your medications may include:

- An inhaled corticosteroid -- a medicine to control swelling inside your airways. Inhaled corticosteroids treat inflammation in the airway, and only very small amounts of the medicine are absorbed into the body. So these medicines don't tend to cause the serious side effects, such as weakening of the bones, that corticosteroids can cause when they are taken in liquid, pill, or injection form (systemic corticosteroids).
- A long acting bronchodilator -- These medications are long-acting and their effects last for a long time. Therefore, these medications should not be used for acute shortness of breath in an emergency. Long-acting bronchodilators are used regularly to open the airways and keep them open
- A fast acting bronchodilator -- These medications work quickly (within 15-20 minutes) to help decrease shortness of breath. They are sometimes described as "rescue" or "quick-reliever" medications. Your doctor may prescribe a short-acting beta-agonist to use as-needed to decrease shortness of breath or to use every day. They may also be prescribed before exercise

Breathing medications can be delivered with a nebulizer or an inhaler. A nebulizer or an inhaler is a way to get the medication to your lungs. Some medications are only available in inhaler form. Other medications such as Albuterol (ProAir/Proventil/Ventolin) are available in both nebulizer solution and inhaler. This is important to understand. If you take a nebulizer treatment with albuterol, you should not use your Albuterol/ProAir/Proventil/Ventolin inhaler for 4-6 hours.

Some inhalers and nebulizer solutions contain more than one medication. For example, several breathing medications combine both a long-acting bronchodilator and an inhaled corticosteroid (Advair, Symbicort, Dulera are examples of combined medications.) It is important that you not take more of these medications than prescribed as they can cause serious health issues when over used.

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