

RESPIRATORY MEDICATIONS AND DEVICES

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CONFLICT OF INTEREST

- Brown and Hahlbohm speaker bureau Association of Asthma Educators

OBJECTIVES

- Review mechanism of action for asthma pharmacologic agents
- Describe key patient educational points for each
- Compare and contrast various aerosol delivery devices including proper technique and limitations of device
- Outline care and cleaning of devices

MECHANISMS OF ACTION

_____ Albuterol (ProAir Respiclick®)

_____ Fluticasone Furoate (Arnuity Ellipta®)

_____ Fluticasone Furoate/Vilanterol (Breo Ellipta®)

_____ Montelukast (Singulair®)

_____ Albuterol/ Ipratropium (DuoNeb®)

A. LABA

B. SABA

C. ICS

D. LTRA

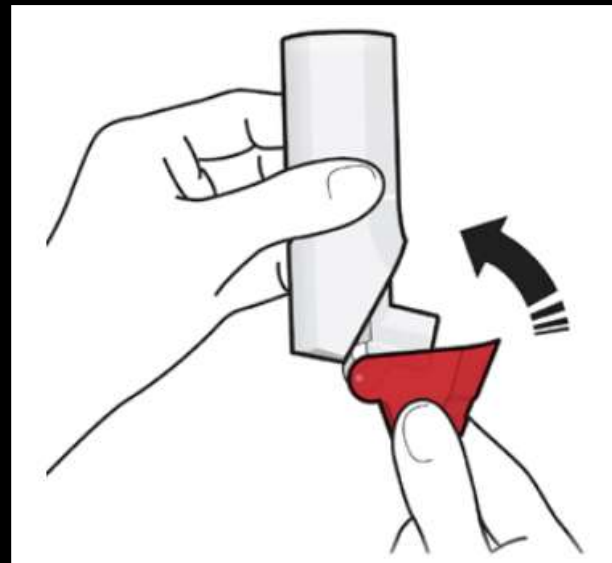
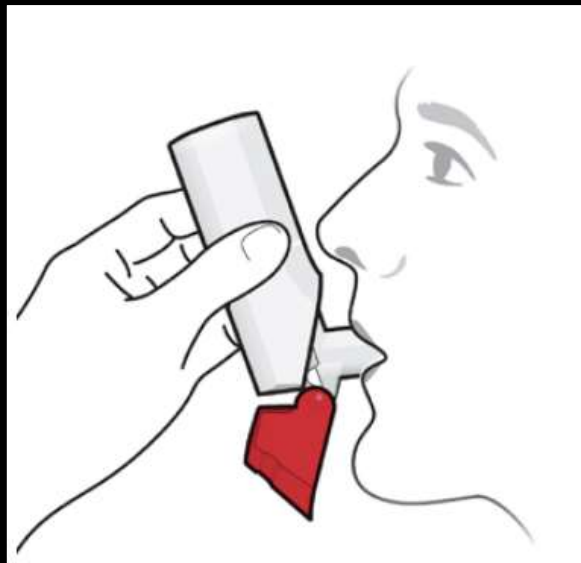
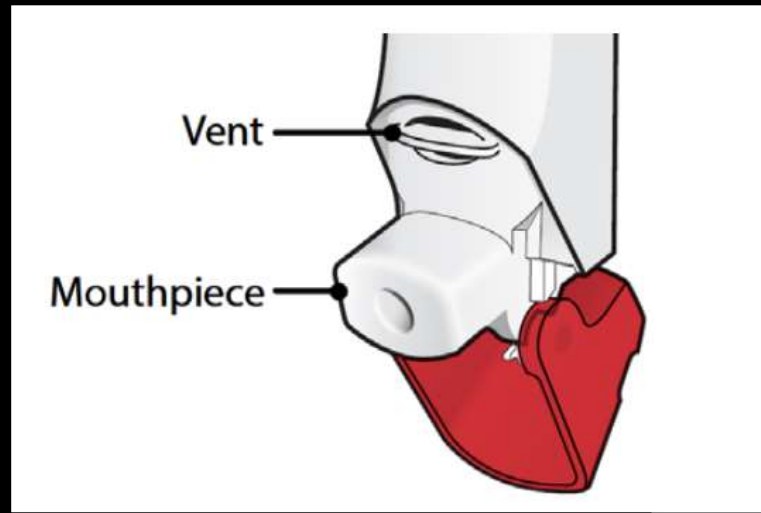
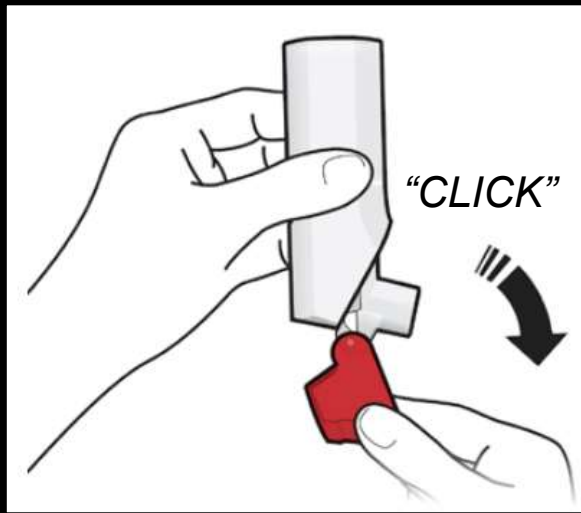
E. SAMA

ALBUTEROL (PROAIR RESPICLICK®)

- Breath actuated **dry powder** SABA
- Indicated: **≥ 12 years** for bronchospasm and prevention of exercise-induced bronchospasm
- In a study that investigated the **peak inspiratory flow rate (PIFR)** mean PIFR achieved by subjects was **>60 L/min** (range = 31 to 110 L/min.), indicating that patients would be able to achieve the required inspiratory flow to operate the MDPI device correctly.
- **Cleaning:** Wipe with dry cloth
- **Discard:** 13 months after removing from foil pouch



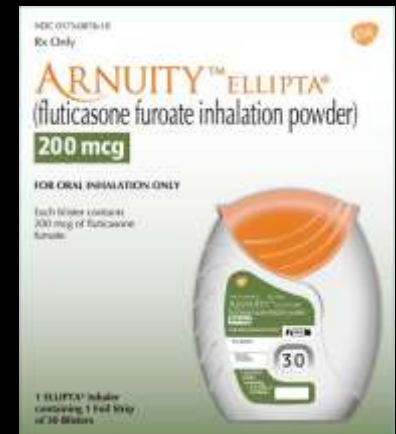
<http://www.clinicaladvisor.com/proair-respiclick/drug/34393/>



http://myproair.com/pdf/Full_Prescribing_And_Patient_Information.pdf

FLUTICASONE FUROATE (ARNUIITY ELLIPTA®)

- Indication: ≥ 12 years
- Dosing: 1 inhalation daily
- Delivery 90 and 182 mcg, respectively, of fluticasone furoate per blister when tested at a flow rate of 60 L/min for 4 seconds.
- Cleaning: Dry tissue if needed
- Discard: 6 weeks after removal from foil tray

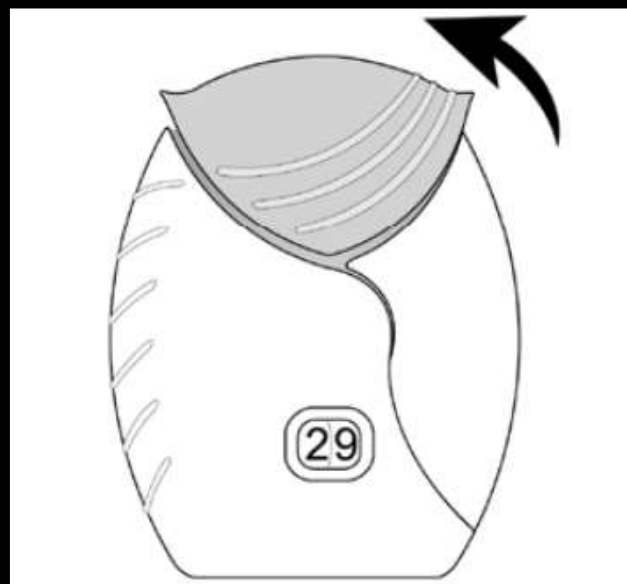
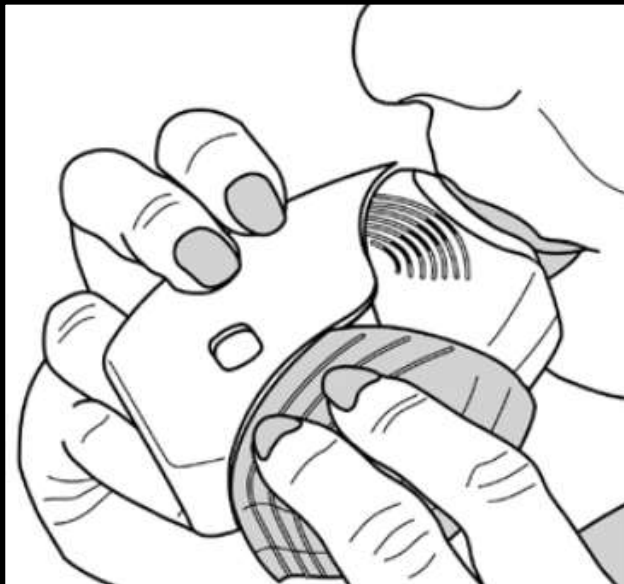
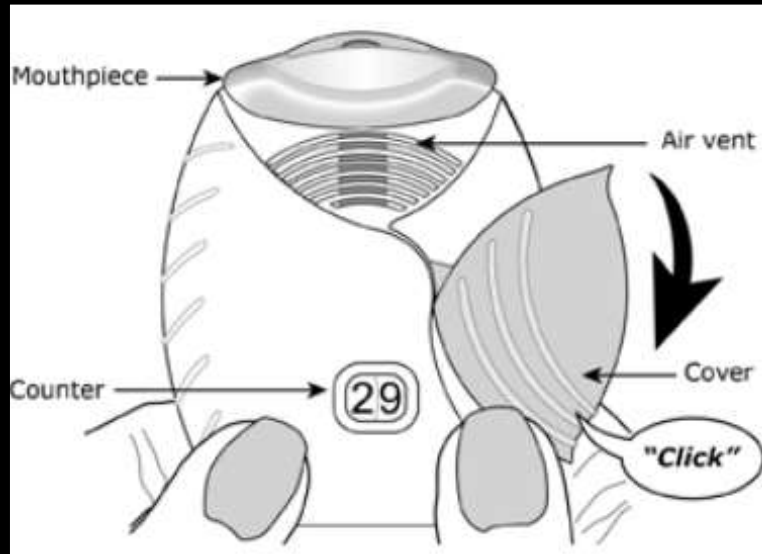
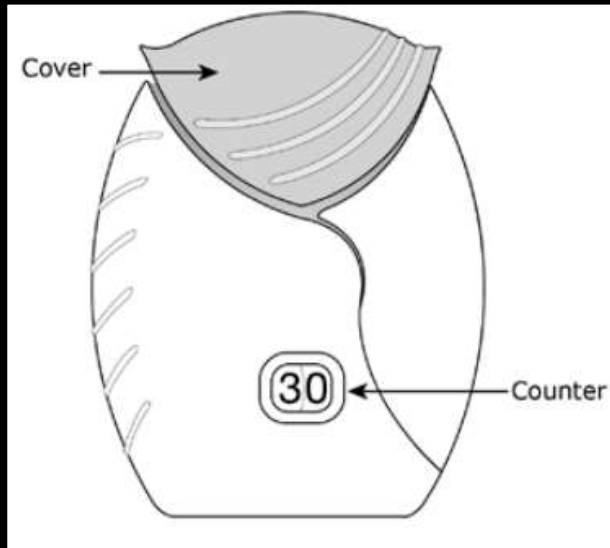


FLUTICASONE FUROATE/VILANTEROL (BREO ELLIPTA®)

- Indication: **≥ 18 years** and older
- Dosing: 1 inhalation daily
- Delivery: delivers 92 and 184 mcg of fluticasone furoate and 22 mcg of vilanterol per blister when tested at a flow rate of **60 L/min for 4 seconds**.
- **Cleaning:** Dry tissue if needed
- Discard: **6 weeks** after removal from foil tray

<http://medlibrary.org/lib/rx/meds/breo-ellipta>





WHAT ARE THE BEST TOOLS TO USE TO EDUCATE PATIENTS ABOUT MEDICATION USE?

Asthma Action Plan

For: _____ Doctor: _____ Date: _____
Hospital/Emergency Department Phone Number: _____

Doing Well

- No cough, wheeze, chest tightness, or shortness of breath during the day or night.
- Can do usual activities.

And, if a peak flow meter is used,

Peak flow: _____ (50 percent or more of my best peak flow)

My best peak flow is: _____

During exercise: _____

Take these long-term control medicines each day (include an anti-inflammatory):

Medicine	How much to take	When to take it
_____	_____	_____
_____	_____	_____
_____	_____	_____

Asthma is Getting Worse

- Cough, wheeze, chest tightness, or shortness of breath, or
- Waking at night due to asthma, or
- Can do usual, but not all, usual activities.

Or:

Peak flow: _____ (50 to 75 percent of my best peak flow)

Add quick-relief medicine—and keep taking your GREEN ZONE medicine.

_____ (_____ puffs, every 20 minutes for up to 1 hour)

If your symptoms (and peak flow, if used) return to GREEN ZONE after 1 hour of above treatment:

_____ (_____ puffs, every 20 minutes for up to 1 hour)

Or:

If your symptoms (and peak flow, if used) do not return to GREEN ZONE after 1 hour of above treatment:

Take _____ mg per day for _____ (3-10) days

Call the doctor (or hospital if you're _____ hours after taking the oral steroid)

Take the medicine:

_____ (_____ puffs or _____ mg)

Then call your doctor NOW. Go to the hospital or call an ambulance if:

- You are still in the red zone after 15 minutes (or 2).
- You have not reached your doctor.

DANGER SIGNS

- Trouble walking and talking due to shortness of breath
- Blue or tinged lips or blue
- Take 1-2 or 3-6 puffs of your quick-relief medicine AND
- Go to the hospital or call for an ambulance NOW



<http://www.monaghanmed.com/truzone-pfm-0>

https://www.nhlbi.nih.gov/files/docs/public/lung/asthma_actplan.pdf

DEVICE TRAINING

<http://use-inhalers.com>



The screenshot shows the homepage of the 'How To Use Inhalers' website. At the top left is the logo with the text 'How To Use Inhalers' and 'Interactive Guidance & Management'. To the right is a blue button that says 'For Patients Click Here'. Below the logo is a navigation menu with links for 'Home', 'Free Training', 'Kiosk', 'Free CEUs', 'Our Associates', and 'Publications'. The main banner features a doctor in a white coat sitting at a desk with a laptop. The laptop screen shows a woman using an inhaler. Text on the banner reads 'Inhaler technique training helps improve patient health!', 'Earn your CEUs...', and '...and train your Patients.' There are two green 'Learn More' buttons on either side of the doctor. Below the banner is a section titled 'Free Training (1 Minute)'. It has two steps: '1. Select Language:' with buttons for English, Español, Português, Français, Italiano, Polski, 简体中文, العربية, Việt, 繁體, русский, and kreòl ayisyenl; and '2. Select an Inhaler:' with icons and labels for MDI with Spacer, MDI, Diskus, Handihaler, Twisthaler, and Autohaler.

How To Use Inhalers
Interactive Guidance & Management

For Patients
Click Here

Home Free Training Kiosk Free CEUs Our Associates Publications

Inhaler technique training helps improve patient health!

Earn your CEUs... [Learn More](#)

...and train your Patients. [Learn More](#)

Free Training (1 Minute)

1. Select Language: [English](#) [Español](#) [Português](#) [Français](#) [Italiano](#) [Polski](#) [简体中文](#)
[العربية](#) [Việt](#) [繁體](#) [русский](#) [kreòl ayisyenl](#)

2. Select an Inhaler:

 MDI with Spacer  MDI  Diskus  Handihaler  Twisthaler  Autohaler

Handouts and Flyers

In this section you will find important resources like Patient Instructions and Flyers which you can download and print for Free.

For Flyers

[Click Here](#)

Patient Instruction Guides

- Printable handouts on inhaler technique
- Step-by-step instructions on correct usage
- Easy to read and understand correct technique

How to Use Twisthaler

Patient Education Guide



Learn with - An interactive training - Engaging animations - Your web cam
Good Inhaler Technique - Increases medicine effect - Saves of cost of medicine - Reduces ER visits

www.use-inhalers.com

- For cleaning refer to the patient instructions that accompanies your inhaler.
- Following these step by step instructions will help you to inhale medicine effectively.



Step1: Hold the Twisthaler straight up. Rotate the cap in counter-clockwise direction to open.



Step2: Lifting the cap will lock the dose. The dose counter on the base will reduce by 1.



Step3: Make sure the inhaler arrow located directly above the base is in line with the dose counter.



Step4: Exhale away from the inhaler.



Step5: Place the Twisthaler in your mouth horizontally. Take a quick and deep breath.



Step6: Hold your breath for 10 seconds. Exhale slowly through your mouth or nose.



Step7: Immediately put the cap back. Rotate in clockwise direction and gently press down. You'll hear a click.



Step8: Make sure that the groove is in line with the dose counter window.



Step9: Repeat 1 to 8 steps after 30 seconds. If another dose is required. If you are using a multidose combination, rinse your mouth after all doses are complete.

Tip: Remember to rinse your mouth thoroughly after taking your dose and spit out the water.

Use-inhalers website is a great resource for Asthma and COPD patients. Learn how to use your inhaler with interactive audio-visual instructions. Practice using the innovative webcam feature.

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How to Use **MDI**





How to Use **Diskus**



ADDITIONAL DEVICES TO REVIEW

- MDI with Holding Chamber
- Twisthaler
- Flexhaler
- Etc...

PIPELINE

- Longer acting controller medications asthma/COPD overlap syndrome
- Biologics
 - Interleukin (IL-5)- Monoclonal antibodies (Mepolizumab (Nucala[®])) and Monoclonal antibody targeted at the IL-5 receptor (Benralizumab). Indicated for Severe Eosinophilic Asthma
 - Interleukin (IL-13)- Lebrikizumab

GSK Product development pipeline. March 2015.

<https://www.gsk.com/media/621672/product-pipeline-2015.pdf>

Anti-IL5 therapy for asthma and beyond. World Allergy Organization Journal. 2014;7:32.

<http://www.waojournal.org/content/7/1/32>. doi:10.1186/1939-4551-7-32



QUESTIONS