



Initial Outpatient Evaluation and Ongoing Management of Asthma

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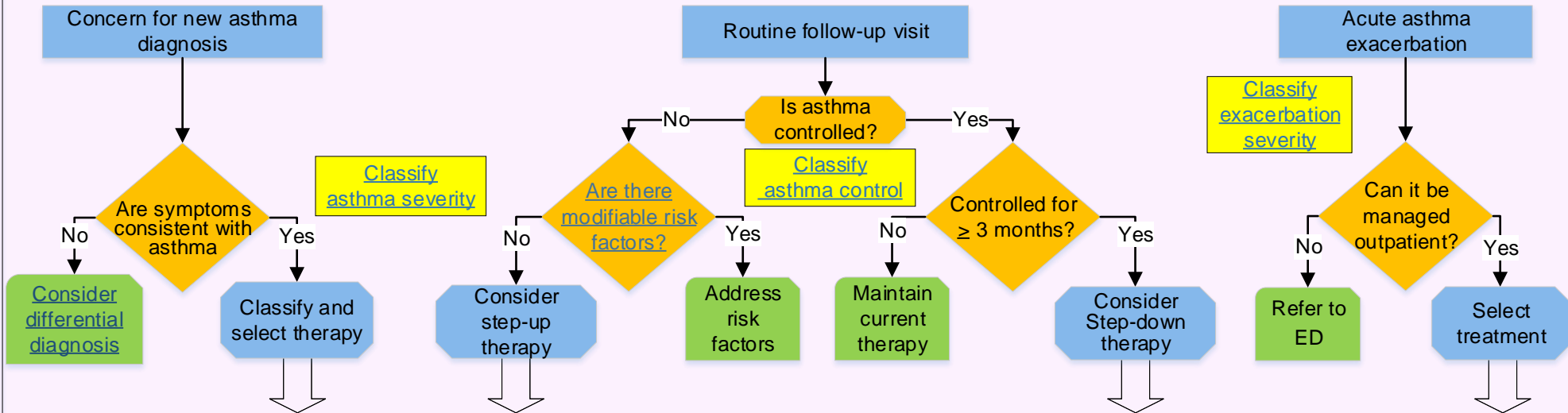
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Initial Outpatient Evaluation and Ongoing Management of Asthma

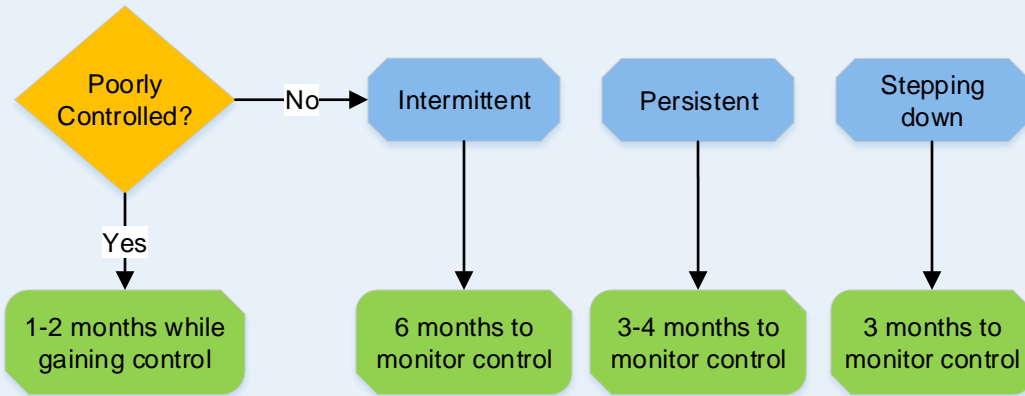
Diagnosis



Treatment

Age	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	
	Intermittent	Mild Persistent	Moderate Persistent	Severe Persistent			Exacerbation
Age: 0-4	SABA PRN and short course daily ICS at start of RTI	Daily low-dose ICS and prn SABA	Daily medium-dose ICS and prn SABA	Daily medium-dose ICS-LABA and prn SABA	Daily high-dose ICS-LABA and prn SABA	Daily high-dose ICS-LABA + OCS and prn SABA	Treatment for acute exacerbation
Age: 5-11	SABA PRN	Daily low-dose ICS and prn SABA	Daily and prn low-dose ICS-formoterol #	Daily and prn medium-dose ICS-formoterol #	Daily high-dose ICS-LABA and prn SABA	Daily high-dose ICS-LABA + OCS and prn SABA	
Age: 12+	SABA PRN	Daily low-dose ICS and prn SABA or prn ICS and SABA	Daily and prn low-dose ICS-formoterol	Daily and prn medium-dose ICS-formoterol	Daily medium or high-dose ICS-LABA + LAMA and prn SABA	Daily high-dose ICS-LABA + OCS and prn SABA	
# 4 year olds can also be treated with this approach			Select a box above to see treatment options, or select categories to right for medication tables		SABA: Short-Acting Beta Agonist	ICS: Inhaled Corticosteroids	
Modified from 2020 NHLBI Asthma Focused Updates. For alternative treatment options click here.					OCS: Oral Corticosteroids	LABA: Long-Acting Beta Agonist	

Education/Follow-up



Patient Education Tools
Mediglyphs (In each Med table)

- [Asthma Action Plan](#)
- [Mask and Spacer Helping Hands](#)
- [Inflamed Airway Visual](#)
- [NCH Asthma Program Resources](#)

Referrals

- [School-based Asthma Therapy](#)
- [Asthma Express](#)

Follow-up

2 weeks to review symptom control and medications

Differential Diagnosis Considerations for Asthma

Upper airway disease

- Allergic rhinitis and sinusitis

Obstruction involving large airways

- Foreign body in trachea or bronchus
- Vocal cord dysfunction
- Vascular ring or laryngeal web
- Laryngotracheomalacia, tracheal stenosis, or bronchostenosis
- Enlarged lymph nodes or tumor

Obstruction involving small airways

- Viral bronchiolitis or obliterative bronchiolitis
- Cystic fibrosis
- Bronchopulmonary dysplasia
- Heart disease

Other Causes

- Recurrent cough not due to asthma
- Aspiration from swallowing mechanism dysfunction or gastroesophageal reflux

Classification of Asthma Severity: Clinical Features before Treatment

(Modeled after NHLBI Guidelines)

	Intermittent	Mild Persistent	Moderate Persistent	Severe Persistent
Daytime symptoms	≤ 2 days/week	> 2 days/week	Daily	Throughout the day
Nighttime symptoms	≤ 2 times/month	3 – 4 times/month	> 1 time/week	Nightly
Rescue inhaler use	≤ 2 days/week	> 2 days/week	Daily	Several times a day
Exercise limitation	None	Minor	Some	Extremely
FEV1	>80%	>80%	60 – 80%	<60%
FEV1/FVC	>85%	>80%	75 – 80%	<75%
“Risk”	0 – 1 oral steroids/year	≥ 2 oral steroids per year		

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Modifiable Risk Factors to Assess

Medication self-management barriers

- Poor controller adherence
- Lack of understanding of inhaler technique
- Poor understanding of asthma action plan
- Unable to access medication at the pharmacy
- Unable to obtain spacer

Asthma triggers

- Seasonal/environmental allergens
- Tobacco smoke (including vaping, second or third hand exposure)
- Mold
- Cockroaches
- Rodents
- Chemical exposures (e.g. incense)

[Consider referral to
asthma express](#)

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[Consider referral to
school based asthma
therapy \(SBAT\)](#)

Components of control			Classification of Asthma Control (Modified from 2007 NHLBI guidelines)			
			Age (yr)	Well-Controlled	Not Well-Controlled	Very Poorly Controlled
Impairment	Symptoms		All	≤ 2 days/week*	> 2 days per week#	Throughout the day
	Nighttime awakenings		0-4	≤ 1x/month	> 1x/month	>1x/week
			5 to 11	≤ 1x/month	≥ 2x/month	≥ 2x/week
			≥ 12	≤ 2x/month	1-3x/week	≥ 4x/week
	Interference with normal activity		All	None	Some limitation	Extremely limited
	Short-acting beta2-agonist use for symptom control (not prevention of EIB)		All	≤ 2 days/week	> 2 days per week	Several times per day
	FEV1 or peak flow		≥ 5	> 80% predicted/ personal best	60-80% predicted/ personal best	< 60% predicted/ personal best
	FEV1/FVC		≥ 5	> 80%	75-80%	< 75%
	Validated Questionnaires		ACT	≥ 4	≥ 20	16-19
ATAQ			≥ 12	0	3-4	1-2
ACQ			≥ 12	≤ 0.75	≥ 1.5	N/A
Risk	Exacerbations requiring oral systemic corticosteroids¥		All	0-1/year	2-3/year	> 3/year
Recommended Action for Treatment			All	Maintain current step or consider step-down if well controlled for at least 3 months. Schedule regular follow-up in 1-6 months.	Step-up (1 step) and re-evaluate in 2-6 weeks. Age 0-4: If no clear benefit from stepping-up in 4-6 weeks, consider alternative diagnoses or adjust therapy.	Consider short course of oral systemic steroids, step-up (1-2 steps) and re-evaluate in 2 weeks Age 0-4: If no clear benefit from stepping-up in 4-6 weeks, consider alternative diagnoses or adjust therapy
* For 5-11 yos: < 2 days/week but not more than once on each day # For 5-11 yos: > 2 days/ week or multiple times on < 2 days/week ¥ Consider severity and interval since last exacerbation					Before stepping-up therapy, review adherence to medications, inhaler technique and environmental control.	

Suggestion for stepping down therapy:

The dose of ICS may be reduced about 25–50 percent every 3 months to the lowest dose possible required to maintain control

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CLASSIFYING SEVERITY OF ASTHMA EXACERBATIONS IN THE URGENT OR EMERGENCY CARE SETTING

Note: Patients are instructed to use quick-relief medications if symptoms occur or if PEF drops below 80 percent predicted or personal best. If PEF is 50–79 percent, the patient should monitor response to quick-relief medication carefully and consider contacting a clinician. If PEF is below 50 percent, immediate medical care is usually required. In the urgent or emergency care setting, the following parameters describe the severity and likely clinical course of an exacerbation.

	Symptoms and Signs	Initial PEF (or FEV ₁)	Clinical Course
Mild	Dyspnea only with activity (assess tachypnea in young children)	PEF ≥70 percent predicted or personal best	<ul style="list-style-type: none"> Usually cared for at home Prompt relief with inhaled SABA Possible short course of oral systemic corticosteroids
Moderate	Dyspnea interferes with or limits usual activity	PEF 40-69 percent predicted or personal best	<ul style="list-style-type: none"> Usually requires office or ED visit Relief from frequent inhaled SABA Oral systemic corticosteroids; some symptoms last for 1-2 days after treatment is begun
Severe	Dyspnea at rest; interferes with conversation	PEF <40 percent predicted or personal best	<ul style="list-style-type: none"> Usually requires ED visit and likely hospitalization Partial relief from frequent inhaled SABA Oral systemic corticosteroids; some symptoms last for >3days after treatment is begun Adjunctive therapies are helpful
Subset: Life-Threatening	Too dyspneic to speak; perspiring	PEF <25 percent predicted or personal best	<ul style="list-style-type: none"> Requires ED/hospitalization; possible ICU Minimal or no relief from frequent inhaled SABA Intravenous corticosteroids Adjunctive therapies are helpful

Key: ED, emergency department; FEV₁, forced expiratory volume in 1 second; ICU, intensive care unit; PEF, peak expiratory flow; SABA, short-acting beta₂-agonist

FORMAL EVALUATION OF ASTHMA EXACERBATION SEVERITY IN THE URGENT OR EMERGENCY CARE SETTING				
	Mild	Moderate	Severe	Subset: Respiratory Arrest Imminent
Symptoms				
Breathlessness	While walking Can lie down	While at rest (infant—softer, shorter cry, difficulty feeding) Prefers sitting	While at rest (infant—stops feeding) Sits upright	
Talks in	Sentences	Phrases	Words	
Alertness	May be agitated	Usually agitated	Usually agitated	Drowsy or confused
Signs				
Respiratory Rate	Increased	Increased Guide to rates of breathing in awake children: <i>Age</i> <2 months 2-12 months 1-5 years 6-8 years		Often >30/minute <i>Normal Rate</i> <60/minute <50/minute <40/minute <30/minute
Use of accessory muscles; suprasternal reactions	Usually not	Commonly	Usually	Paradoxical thoracoabdominal movement
Wheeze	Moderate, often only end expiratory	Loud; throughout exhalation	Usually loud; throughout inhalation and exhalation	Absence of wheeze
Pulse/minute	<100	100-120 Guide to normal pulse rates in children <i>Age</i> 2-12 months 1-2 years 2-8 years		>120 <i>Normal rate</i> <160/minute <120/minute <110/minute
Pulsus paradoxus	Absent <10 mmHg	May be present 10-25 mmHg	Often present >25 mmHg (adult) 20-40 mmHg (child)	Absence suggests respiratory muscle fatigue
Functional Assessment				
PEF Percent predicted or percent personal best	≥70 percent	Approx. 40–69 percent or response lasts <2 hours	<40 percent	<25 percent Note: PEF testing may not be needed in very severe attacks
PaO2 (on air)	Normal (test not usually necessary)	≥60 mmHg (test not usually necessary)	<60 mmHg: possible cyanosis	
And/or PCO2	<42 mmHg (test not usually necessary)	<42 mmHg (test not usually necessary)	≥42 mmHg: possible respiratory failure	
SaO2 percent (on air) at sea level	>95 percent (test not usually necessary)	90–95 percent (test not usually necessary)	<90 percent	
	Hypercapnia (hypoventilation) develops more readily in young children than in adults and adolescents.			
Key: PaO2, arterial oxygen pressure; PCO2, partial pressure of carbon dioxide; PEF, peak expiratory flow; SaO2, oxygen saturation				
Notes:				
<ul style="list-style-type: none">The presence of several parameters, but not necessarily all, indicates the general classification of the exacerbation.Many of these parameters have not been systematically studied, especially as they correlate with each other. Thus, they serve only as general guides (Cham et al. 2002; Chey et al. 1999; Gorelick et al. 2004b; Karras et al. 2000; Kelly et al. 2002b and 2004; Keogh et al. 2001; McCarren et al. 2000; Rodrigo and Rodrigo 1998b; Rodrigo et al. 2004; Smith et al. 2002).The emotional impact of asthma symptoms on the patient and family is variable but must be recognized and addressed and can affect approaches to treatment and followup (Ritz et al. 2000; Strunk and Mrazek 1986; von Leupoldt and Dahme 2005).				

Asthma Exacerbation Severity and Treatments

Severity Classification		Mild			Moderate			Severe
Medication	Dosage form	Weight	Dose	Frequency	Weight	Dose	Frequency	Call 911 Monitoring: Continuous HR, RR and pulse oximetry Initiate Treatment, as outlined for Moderate severity
Albuterol	Albuterol MDI (90mcg)	< 15 kg	4 puffs	Reassess in 20 minutes; may repeat x2				
	Albuterol Nebulization (2.5mg/3mL vial)	≥ 15 kg	8 puffs					
	Albuterol Nebulization (2.5mg/3mL vial)	All	3 mL	Reassess in 20 minutes; may repeat x2				
Ipratropium (use in combo with albuterol)	DuoNeb® (Ipratropium 0.5mg and albuterol 2.5mg per 3mL vial)				All	3 mL	Reassess in 20 minutes; may repeat x2	
Oral Steroids	*Prednisolone or prednisone	All	2 mg/kg (Max 60 mg)	Daily for 5 days	All	2 mg/kg (Max 60 mg)	Daily for 5 days	
	*Dexamethasone	All	0.6 mg/kg (Max 16 mg)	Once for 1 dose then repeat dose in 48hrs	All	0.6 mg/kg (Max 16 mg)	Once for 1 dose then repeat dose in 48hrs	
Next Steps		Repeat assessment: <ul style="list-style-type: none">If incomplete response, consider DuoNeb® treatment (Moderate dosing)If responds well, review asthma action plan and send homePatient should continue albuterol treatment scheduled every 4 hours for 24-48 hours and then use PRN dosing			Repeat assessment: <ul style="list-style-type: none">If incomplete response refer to ED or activate 911If responds well, review asthma action plan and send homePatient should continue albuterol treatment scheduled every 4 hours for 24-48 hours and then use PRN dosing			

*For patients presenting with mild symptoms that have NOT tried albuterol to relieve symptoms, albuterol treatment should be completed first. If a complete response is observed, oral steroids may not be necessary.

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Short-Acting Beta-2 Agonists (SABA)

BOLD = Preferred, no PA required for Medicaid patients

Mechanism of delivery	Drug	Strength	As Needed Dose and Frequency		Cost
			Symptom relief	Acute exacerbation	
Metered-dose Inhalers (MDI) <ul style="list-style-type: none"> Shake before use Needs primed Use with spacer 	Ventolin®, Proair®, Proventil® Albuterol HFA Mediglyph	90 mcg	2 puffs Every 4 hours	2-6 puffs every 20 minutes for 2-3 doses	\$76
Nebulizer Solution <ul style="list-style-type: none"> Passive inhalation via nebulizer Requires nebulizer device 	AccuNeb® Albuterol Mediglyph	2.5 mg/3 mL (0.083%)	1 vial Every 4 hours	1 vial every 20 minutes for 2-3 doses	\$17

Systemic Corticosteroids

BOLD = Preferred, no PA required for Medicaid patients

Drug	Strength	Dose, Frequency and Duration*	Maximum daily dose	Clinical Considerations
Orapred® Prednisolone	Liquid: 15mg/5mL	2mg/kg Daily for 5 days	60 mg/day	Take with food Solution does NOT contain alcohol
	ODT: 10mg, 15mg, 30mg			
	Tablet: 5mg			
Deltasone® Prednisone	Liquid: 5mg/5mL	2mg/kg Daily for 5 days	60 mg/day	Take with food Solution contains alcohol (5%)
	Tablets: 1mg, 2.5mg, 5mg, 10mg, 20mg, 50mg			

* Duration of 5 days is average and typical duration. Treatment may be shorter or longer depending on patient. Range 3 – 10 days of treatment. Do not need to taper due to short course.

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Inhaled Corticosteroids (ICS) – Low and Medium Dose

BOLD = Preferred, no PA required for Medicaid patients

Inhaler Mechanism	Drug	Age (years)	Low Dose Inhaler Strength	Dose and Frequency	Medium Dose Inhaler Strength	Dose and Frequency	Cost per Inhaler
Metered-dose Inhalers (MDI) <ul style="list-style-type: none"> Aerosolized inhalation that is pushed to activate Shake before use Needs primed Spacer compatible 	Flovent® HFA Fluticasone propionate Mediglyph	0-4	44 mcg	2 puffs BID	110 mcg	1 puff BID	\$351
		5-11				2 puffs BID	
		≥ 12	44 mcg	2 puffs BID	110 mcg	2 puffs BID	
	Asmanex® HFA Mometasone furoate Mediglyph	0-4	NA	NA	NA	NA	\$250
		5-11	NA	NA	50 mcg	1 puff BID	
		≥ 12	100 mcg	1 puff BID	100 mcg	2 puffs BID	
Dry Powder Inhalers (DPI) <ul style="list-style-type: none"> Breath-actuated Spacer Incompatible 	Asmanex® Twisthaler® Mometasone furoate Mediglyph	≥ 12*	110 mcg	2 inhalations Daily	220 mcg	2 inhalations Daily	\$238
	Pulmicort® Flexhaler® Budesonide Mediglyph	≥ 12*	90 mcg	2 inhalations BID	180 mcg	2 inhalations BID	\$269
	Qvar® Redihaler® Beclomethasone	≥ 12*	40 mcg	2 inhalations BID	80 mcg	2 inhalations BID	\$260
	Arnuity® Elipta® Fluticasone furoate	≥ 12*	100 mcg	1 inhalation Daily	100 mcg	1 inhalation Daily	\$220
Nebulizer Solution <ul style="list-style-type: none"> Passive inhalation via nebulizer Requires nebulizer device 	Pulmicort® Respules Budesonide	≤ 6	0.25 mg/2mL solution	2 ampules Daily	0.5 mg/2mL solution	2 ampules Daily	\$106

For patients ages 5 and older, the medium and low doses are suggestions based on the 2020 GINA guidelines. For patients ages 0-4, the NHLBI EPR3 2007 guidelines were referenced. These doses are based on available studies and product information, and are not steroid equivalencies. NA: There is not sufficient evidence to recommend a dose for this age and medication

*DPIs may also be used in patients < 12 with shared decision-making. A younger patient may have the inspiratory capacity and coordination to use a DPI, but an MDI with mask and spacer is the optimal delivery method for patients < 12.

Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2020. Available from: www.ginasthma.org

Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma. [Bethesda, Md.]: U.S. Dept. of Health and Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute, 2007. National Heart, Lung, and Blood Institute.

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Single Maintenance and Reliever Therapy (SMART)

Helping Hand Patient Education for SMART

ICS + Long-Acting Beta Agonist (LABA)						
BOLD = Preferred, no PA required for Medicaid patients						
Inhaler Mechanism	Drug	Age (years)	Low Dose Inhaler Strength	Medium Dose Inhaler Strength	Dose and Frequency	Max Dose
Metered-dose Inhalers (MDI) <ul style="list-style-type: none"> Aerosolized inhalation that is pushed to activate Shake before use Needs primed Use with spacer 	Symbicort® HFA Budesonide / formoterol Mediglyph	4-11	80-4.5 mcg	160-4.5 mcg	2 puffs BID and 1 puff PRN	8 puffs
		≥ 12	80-4.5 mcg	160-4.5 mcg	2 puffs BID and 2 puffs PRN	12 puffs
	Dulera® HFA Mometasone / formoterol Mediglyph	4-11	50-5 mcg	100-5 mcg	2 puffs BID and 1 puff PRN	8 puffs
		≥ 12	50-5 mcg	100-5 mcg	2 puffs BID and 2 puffs PRN	12 puffs

Example Prescription – Low Dose ICS + LABA			
Age (years)	Drug	Strength	Directions
4-11	Symbicort® HFA Budesonide / formoterol	80-4.5 mcg	Inhale 2 puffs twice a day. May also inhale 1 puff every 4 hours, as needed for symptoms (Max: 8 puffs per day). Dispense 2 inhalers for 30-day supply.
≥ 12	Symbicort® HFA Budesonide / formoterol	80-4.5 mcg	Inhale 2 puffs twice a day. May also inhale 2 puffs every 4 hours, as needed for symptoms (Max: 12 puffs per day). Dispense 2 inhalers for 30 day supply.

Expert Panel Working Group of the National Heart, Lung, and Blood Institute (NHLBI) administered and coordinated National Asthma Education and Prevention Program Coordinating Committee (NAEPCC), Cloutier MM, et al. 2020 Focused Updates to the Asthma Management Guidelines: A Report from the National Asthma Education and Prevention Program Coordinating Committee Expert Panel Working Group. J Allergy Clin Immunol. 2020 Dec;146(6):1217-1270.

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ICS + Long-Acting Beta Agonist (LABA) – Low and Medium Dose

BOLD = Preferred, no PA required for Medicaid patients

Inhaler Mechanism	Drug	Age (years)	Low Dose Inhaler Strength	Medium Dose Inhaler Strength	Dose and Frequency	Cost per Inhaler
Metered-dose Inhalers (MDI) <ul style="list-style-type: none">Aerosolized inhalation that is pushed to activateShake before useNeeds primedSpacer compatible	Symbicort® HFA Budesonide / formoterol Mediglyph	0-4*	80-4.5 mcg	160-4.5 mcg	1-2 puffs BID	\$359
		5-11	80-4.5 mcg	160-4.5 mcg	2 puffs BID	
		≥ 12	80-4.5 mcg	160-4.5 mcg		
	Dulera® HFA Mometasone / formoterol Mediglyph	0-4*	50-5 mcg	50-5 mcg	1-2 puffs BID	\$374
		5-11				
		≥ 12	100-5 mcg	100-5 mcg		
	Advair® HFA Fluticasone/ salmeterol Mediglyph	0-4*	45-21 mcg	115-21 mcg	1-2 puffs BID	\$327
		5-11			2 puffs BID	
		≥ 12	45-21 mcg	115-21 mcg		
Dry Powder Inhalers (DPI) <ul style="list-style-type: none">Breath-actuatedSpacer Incompatible	Advair® Diskus® Fluticasone / salmeterol Mediglyph	≥ 12`	100-50 mcg	250-50 mcg	1 inhalation BID	\$182
	Airduo® Respiclick® Fluticasone / salmeterol	≥ 12	55-14 mcg	113-14 mcg	1 inhalation BID	\$120

*Dosages for products used in these age groups are not referenced in clinical guidelines and there are limited studies available. The suggested reference doses provided are the expert opinion of clinicians at Nationwide Children's Hospital.

For patients ages 5 and older, the medium and low doses are suggestions based on the 2020 GINA guidelines or Lexicomp® reference doses. These doses are based on available studies and product information, and are not steroid equivalencies.

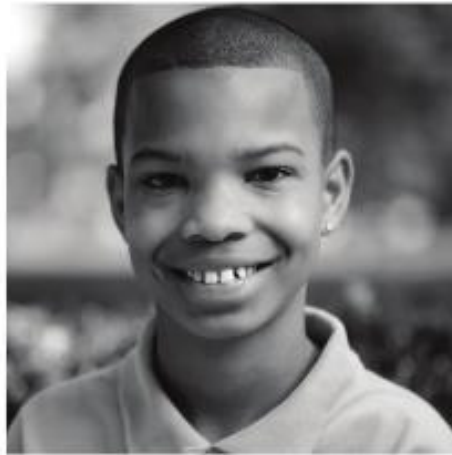
ICS + Long-Acting Beta Agonist (LABA) – High Dose

BOLD = Preferred, no PA required for Medicaid patients

Inhaler Mechanism	Drug	High Dose Inhaler Strength	Dose and Frequency	Cost per Inhaler
Metered-dose Inhalers (MDI) <ul style="list-style-type: none"> Aerosolized inhalation that is pushed to activate Shake before use Needs primed Use with spacer 	Dulera[®] HFA Mometasone / formoterol Mediglyph	200-5 mcg	2 puffs BID	\$374
	Advair[®] HFA Fluticasone/ salmeterol Mediglyph	230-21 mcg	2 puffs BID	\$327
Dry Powder Inhalers (DPI) <ul style="list-style-type: none"> Breath-actuated Spacer Incompatible 	Advair[®] Diskus[®] Fluticasone / salmeterol Mediglyph	500-50 mcg	1 inhalation BID	\$182
	Airduo[®] Respiclick[®] Fluticasone / salmeterol	232-14 mcg	1 inhalation BID	\$120

Ages are not specified on this chart. If a patient has progressed to step 5 or 6 and requires a high dose ICS-LABA, consult with or refer patient to an asthma specialist to assess patient specific dosing.

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Asthma Express

Asthma Express is a home visit program designed to assist a patient and/or caregiver in understanding and succeeding in the management of asthma. During the home visits a nurse will perform a physical and environment assessment, assist with identification of triggers, review medications and action plan and provide education.

Program Logistics:

- Two to three home visits, one visit every one to two weeks
- Home Environmental assessment
- Provision of environmental material such as a bed/pillow case covers to assist in trigger reduction for severe persistent asthma patients
- Summary of findings provided to the practitioner after completion
- Additional visits can be ordered by a physician if further intervention needed

Program Patient Goals:

- Knowledgeable of asthma action plan
- Environmental triggers identified with resolution assistance
- Compliance with medications
- Identify education opportunities

Referral Process:

Call (614) 355-1100 or (800) 466-2727. Have the following available so we may respond quickly to your referral:

- Type of insurance/payer
- Patient name, address, date of birth, diagnosis
- Physician ordering care
- Patient care/equipment/infusion need



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Frequently Asked Questions: for Primary Care Providers

What is SBAT?

School-Based Asthma Therapy (SBAT) is a program where children with uncontrolled persistent asthma can receive controller medication doses at school to improve compliance with these therapies. Patients in the SBAT program have experienced reduced emergency room utilization, reduced hospital admissions and reduced ICU stays.

How does SBAT compare to other school-based programs offered by Nationwide Children's Hospital?

SBAT is a Nationwide Children's school-based community outreach program that supports asthma medication compliance and regular assessment of asthma control. Management of the patient's asthma remains in the primary care medical home (or at their

pulmonary or allergy specialist's office if the specialist has taken over the management of the asthma).

This differs from the Nationwide Children's Care Connection program in which Nationwide Children's sponsored nurse practitioners offer select health care services for students who do not have a medical home and for those who do not routinely seek care via a primary care physician. Nationwide Children's has also partnered with area schools to provide in-school behavioral health programming and services.

How does it work?

- Asthma patients who have poor asthma control (e.g. frequent in school symptoms or frequent Emergency Department use) are referred to the program by a school nurse or clinician.



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- The SBAT advanced practice nurse contacts the family to describe the program, obtain consent, and review current symptoms, medication use and asthma care provider.
- The child's primary asthma provider (usually his/her primary care physician) is then contacted to make the final decision on enrollment and arrangements are made to handle the patient's prescriptions.
- SBAT staff arrange for the delivery of asthma medication, spacer and administration orders to the school AND delivery of asthma medication to the home.
- The SBAT nurses (registered nurses) maintain close contact with the patient and family to perform follow up asthma controller test (ACT) scores, monitor symptoms, medication use and refills.
- SBAT staff will notify the primary asthma provider when the patient needs refills, or when the patient does not seem to be in good control to determine a course of action.
- SBAT staff can assist the patients in making appointments with the patient's primary asthma provider, and remind parents of upcoming appointments.

Do I need to do anything differently in my practice?

To facilitate delivery of controller inhalers to both school and home, prescriptions need to be written in a standardized way, including "SBAT" designation in the "sig" section and sent or called to a Nationwide

Children's Pharmacy. SBAT staff can help pre-populate these prescriptions if desired.

Be prepared for SBAT-relayed patient asthma information from school staff. We've found parents are often unaware of (or underreport) poor asthma control during the day at school.

In patients with persistent poor control, SBAT staff may suggest strategies (e.g. higher dosing or BID dosing at school) that we've seen help other children in the program. Asthma care providers always have the "last word" on any medication changes.

Are there any costs to this program?

The program is free for all patients. For some patients with private insurance, there is a greater financial burden to receive two controller prescriptions at a time. In these cases, the SBAT staff tries to provide samples and refer patients to any assistance programs offered by the manufacturer.

Can I refer a patient to SBAT?

Yes. Providers are encouraged to refer patients if they think that poor asthma control may be due to a lack of adherence to the controller medication at home. If the patient is in a school, or district where SBAT is not currently present, there may be some limitations in that it may take longer to get the program set up or there may be geographic restrictions. Contact the program at **SBAT@NationwideChildrens.org** or **(614) 355-5516** to refer or inquire about a referral. You can also download a referral form at **NationwideChildrens.org/Asthma-Therapy-Program**.



Asthma Action Plan

Name: _____


Date: _____


MRN: _____


DOB: _____


Asthma Severity:

- Exercise Induced
- Intermittent
- Moderate Persistent
- Severe Persistent

Green Zone: Doing Well	Do These Things Every Day!									
 <p>All of these are true:</p> <ul style="list-style-type: none"> • Breathing is great! • No coughing or wheezing • Asthma does not bother sleep or exercise 	<p>Take these medicines every day:</p> <table border="0"> <thead> <tr> <th>Medicine</th> <th>How to take</th> <th>How Often</th> </tr> </thead> <tbody> <tr> <td colspan="3">_____</td> </tr> <tr> <td colspan="3">_____</td> </tr> </tbody> </table> <p>Use 15-20 minutes before exercise: _____</p> <p>Watch out for these triggers: _____</p> <p>_____</p>	Medicine	How to take	How Often	_____			_____		
Medicine	How to take	How Often								

Yellow Zone: Symptoms Starting	Start Relief Medicine!									
 <p>Any of these are happening:</p> <ul style="list-style-type: none"> • Getting a cold • Coughing a lot • Wheezing • Having trouble breathing 	<table border="0"> <thead> <tr> <th>Medicine</th> <th>How to take</th> <th>How Often</th> </tr> </thead> <tbody> <tr> <td colspan="3">_____</td> </tr> <tr> <td colspan="3">_____</td> </tr> </tbody> </table> <p>Keep taking Green Zone Medicine</p>	Medicine	How to take	How Often	_____			_____		
Medicine	How to take	How Often								

Orange Zone: IN TROUBLE	CALL YOUR DOCTOR FOR HELP!									
 <p>Relief medicine is not working:</p> <ul style="list-style-type: none"> • Medicine not lasting 4 hours – symptoms coming back too soon • Constant coughing • Awake all night from asthma • Needing more than 4 doses of relief medicine in one day 	<p>Doctor's Name: _____</p> <p>Doctor's Phone Number: _____</p> <table border="0"> <thead> <tr> <th>Medicine</th> <th>How to take</th> <th>How Often</th> </tr> </thead> <tbody> <tr> <td colspan="3">_____</td> </tr> <tr> <td colspan="3">_____</td> </tr> </tbody> </table> <p>If you cannot reach your doctor and symptoms continue, go to urgent care or ER</p>	Medicine	How to take	How Often	_____			_____		
Medicine	How to take	How Often								

Red Zone: IN DANGER	GET HELP NOW!									
 <p>Breathing is bad:</p> <ul style="list-style-type: none"> • Gasping (breathing hard and fast) • Ribs show when breathing • Neck or stomach caving in • Hard to talk or walk 	<p>Go to Closest ER or Dial 9-1-1</p> <p>On the way take:</p> <table border="0"> <thead> <tr> <th>Medicine</th> <th>How to take</th> <th>How Often</th> </tr> </thead> <tbody> <tr> <td colspan="3">_____</td> </tr> <tr> <td colspan="3">_____</td> </tr> </tbody> </table>	Medicine	How to take	How Often	_____			_____		
Medicine	How to take	How Often								

13013

Single Maintenance and Reliever Therapy (SMART) for Asthma

This therapy uses a single inhaler for both controller therapy (given every day) and reliever therapy (given during an asthma flare-up). This inhaler has a corticosteroid and a bronchodilator in the same device (Picture 1). It may be an option for children at least 4 years of age and older.

Corticosteroids, also called inhaled steroids, are medicines that prevent asthma flare-ups. Your child breathes them into the lungs. They are also called controller medicines because they help control asthma symptoms. They must be used every day. They also help your child during an asthma flare-up, and your child should still use the medicine during episodes when they have increased symptoms. Symptoms from flare-ups should get better in 2 to 3 weeks.

Bronchodilators are medicines that open up the airways. The bronchodilator in SMART therapy works as a controller by keeping airways open. It also acts as a reliever to quickly treat asthma flare-ups. During an asthma flare-up, your child uses the same inhaler for extra doses if they are having asthma symptoms.

Brand names for this medicine

- Symbicort® (budesonide/formoterol) HFA
- Dulera® (mometasone/formoterol) HFA



Picture 1 Taking the medicine with an inhaler and a spacer.

How to give this medicine

- **Controller therapy:** Typical dosing is 2 puffs, twice a day, EVERY DAY.
- **Reliever therapy:** Typical dosing FOR SYMPTOMS is based on age:
 - 4 to 11 years: 1 puff every 4 hours, as needed (max total puffs from controller and reliever doses = 8 puffs per day)
 - 12 years and older: 2 puffs every 4 hours, as needed (max total puffs from controller and reliever doses = 12 puffs per day)
- Read the label carefully. Make sure you are giving your child the right dose. It is easy to confuse the many different dosage forms and strengths.
- Give the exact dose of medicine that your child's health care provider ordered.
- HFA inhalers are usually given with a spacer device, such as an AeroChamber® or OptiChamber®.
- Stay with your child until they have used the right dose of medicine.
- Shake this medicine before giving if it is a metered dose inhaler or liquid for a nebulizer.
- Do not shake this medicine if it is a dry powder inhaler.
- This medicine will usually be given twice daily. It is very important to give the medicine every day as ordered, even if your child is feeling fine. Do not change doses or stop the medicine without talking to your child's health care provider.
- After each dose, your child should rinse their mouth with water or brush their teeth to wash out the steroid medicine.
- Keep a record of the remaining doses and when the medicine is given.
- Get this prescription refilled at least 5 days before the last dose is given. This is very important.

If you forget to give a dose

If you forget to give a scheduled dose of this medicine, give it as soon as possible. Then, give the next scheduled maintenance dose as along as it is at least 4 hours from the last dose given. **Do not** double the next dose.

Then, go back to your child's regular dosing schedule. If you have any questions about this, check with your child's health care provider or pharmacist.

If you need the inhaler more often than every 4 hours or the maximum doses have been used, seek emergency care or call the health care provider depending on your child's Asthma Action Plan.

Inhalers: Spacers with Mask

Many medicines that help make breathing easier are taken by an inhaler. The inhaler must be used the right way, or the medicine will not get into the lungs to make your child feel better. A spacer is a device that helps the medicine get into the lungs. It holds the medicine from the inhaler until the person starts to breathe in. When the person breathes in, the medicine is pulled into the lungs. **Always use a spacer, no matter your child's age.**

There are many types of spacers that may work a little differently. This handout covers the type of spacer used at this hospital. If your spacer is different than the one described here, ask health care provider, respiratory therapist or pharmacist how to use it. Follow the directions for the spacer your doctor recommends.

IMPORTANT: Do not take more of this medicine than your health care provider prescribed. If you have any questions, or if the inhaler(s) is not helping as you think it should, contact your health care provider.

How to use

1. Check to make sure the spacer is clean. If it is not clean, please see how to clean the mask on page 2.
2. Remove the cap from the inhaler. If the inhaler has never been used before or has not been used in 2 weeks or longer, prime (or waste) the inhaler so medicine will come out.

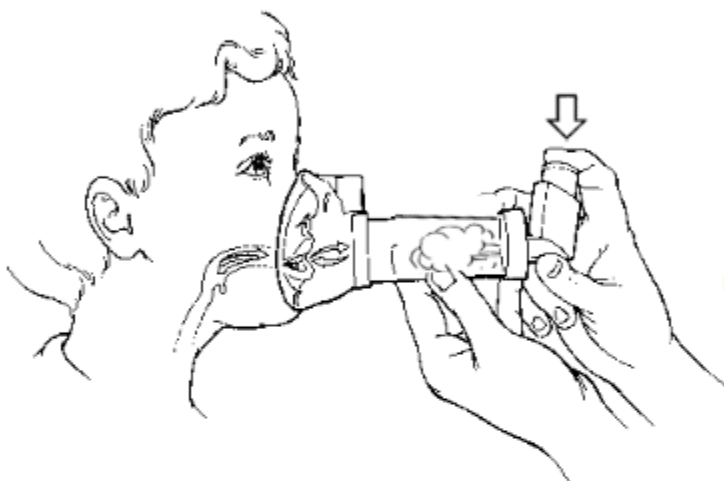
To prime the inhaler, shake it and then push down on it 4 times. Spray the medicine into the air.

3. Put the mouthpiece of the inhaler into the rubber opening at the end of the spacer (Picture 1).
4. Hold the spacer and inhaler firmly. Shake briskly for 10 seconds.



Picture 1 Insert the inhaler into the spacer.

5. Place the mask gently to the face so the nose and mouth are covered. Be sure to get a good seal between mask and face. Leaks will keep you from getting enough medicine. The valve allows you to breathe normally while the mask is held firmly in place.
6. Press down firmly on the inhaler to release only one puff of medicine (Picture 2).
7. Breathe in and out slowly 6 to 8 times.
8. If the health care provider has ordered more than one puff, wait at least 60 seconds and repeat steps 4 through 7.



Picture 2 Press down to release one dose of medicine.

Cleaning the spacer with mask

1. About once a week, remove the backpiece from the end that holds the inhaler and the mask. The backpiece will look like a rubber ring.
2. Place the spacer, the backpiece and the mask in the dishwasher on the top rack OR soak all of the pieces in a bowl filled with warm, soapy water. Use a dish soap detergent to loosen any dirt. Do not use a washcloth or brush to clean it (Picture 3).
3. To rinse, rotate the spacer, backpiece and mask in a bowl of clean, warm water using a gentle motion. Do not use running water. Water pressure could ruin the valve in the spacer.
4. Lightly shake away extra water and leave them on a clean surface to air-dry. **Do not dry by rubbing it with a cloth.**
5. Make sure the spacer is completely dry. Attach the backpiece and mask.

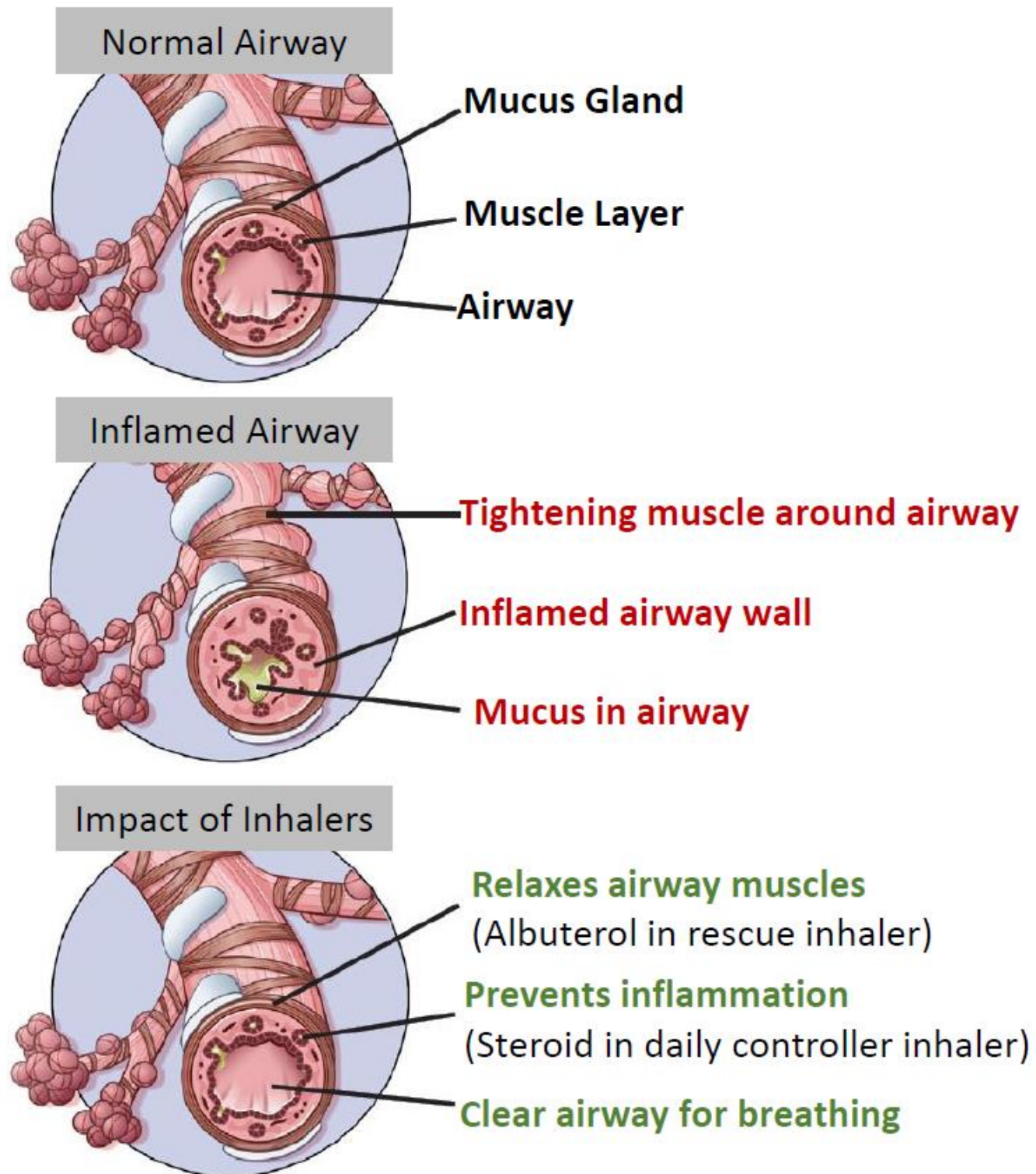
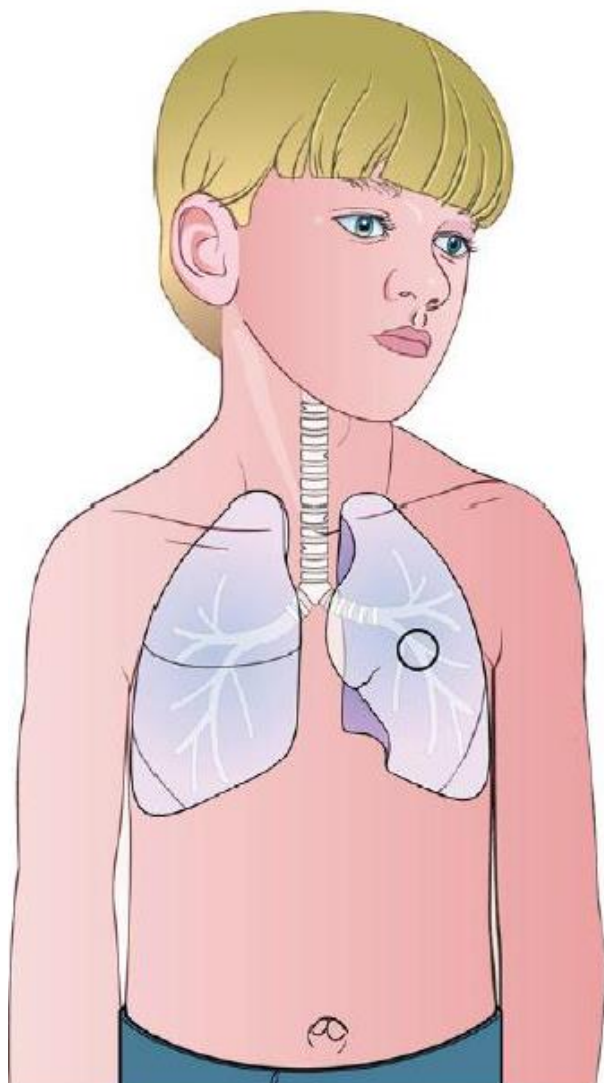


Picture 3 Clean the spacer, backpiece and mask once a week either by hand or in the top rack of the dishwasher.



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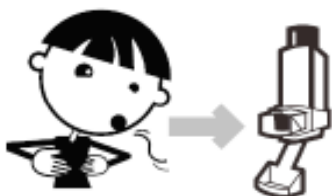
[Return to Pathway](#)

Albuterol HFA (Ventolin HFA, Proventil HFA and ProAir HFA)

200 puffs per inhaler



Reason for taking this medicine:

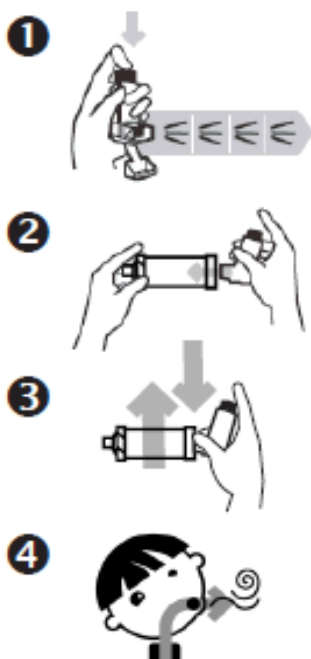


- To give you **quick relief** by opening the airways.
- **This is a rescue medicine and should be used for coughing, wheezing, or shortness of breath.**
- If you are in the **yellow zone** on your asthma action plan, use this medicine.
- If your doctor tells you, use this medicine 15-30 minutes before exercising.

How and when to take this medicine:



- **Use a spacer with this inhaler.**
- **Use 2 puffs for coughing, wheezing, or shortness of breath.**



The **first time** you use this inhaler:

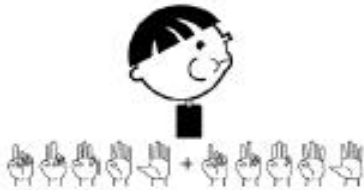
- Shake and then push down on the inhaler 4 times to prime or waste inhaler.
 - Spray the medicine into the air.
 - The dose counter will be at 200 when it is ready for use.
2. Place the **inhaler** in the end of spacer.
 3. Shake well for 10 seconds.
 4. Turn your head to the side and **breathe out.**

5



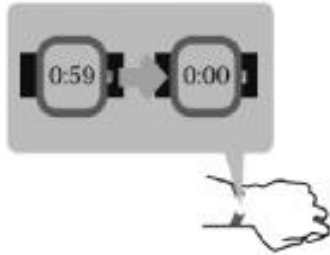
1. Close your mouth around the mouthpiece of the spacer.
 - Push down on the inhaler.
 - Take a slow deep breath.
 - If the spacer makes a whistle sound, breathe in slower.

6



2. Hold your breath for 10 seconds.

7



3. Wait 1 minute.
4. Repeat steps 3-6 for second puff.



Wait at least 4 hours between uses.

Possible side effects:

- Fast heartbeat
- Can make you hyper or cause your body to shake
- Can make you fussy
- Sore throat
- Headache



Call the doctor or clinic if:

- Medicine does not help your coughing, wheezing, or shortness of breath.
- You need to use your inhaler in less than 4 hours. Use 2 more puffs and go to your doctor's office, urgent care, ER, or call 9-1-1.
- You need to use your inhaler more than 2 days a week for coughing, wheezing, or shortness of breath.
- You have questions about this medicine or how to use it.

Important things to remember:

- If you do not use this inhaler in 2 weeks, prime or waste 1 puff before using.
- Never put the metal canister in water.
- Clean the inhaler each week:
 - Do not remove the metal canister. Use a cotton swab to clean the opening where the medicine sprays out.
- Clean spacer and mask each week:
 - Soak in warm soapy water for 15 minutes.
 - Run warm water through it, shake off water and set out to dry.
- This inhaler has a dose counter to tell you when the inhaler is empty. Refill your inhaler when the dose counter shows "20."

How to store:

- Store in a cool dry cabinet.
- Do not store in bathroom.
- Keep out of reach of children.



Albuterol for the nebulizer

2.5mg/3mL solution



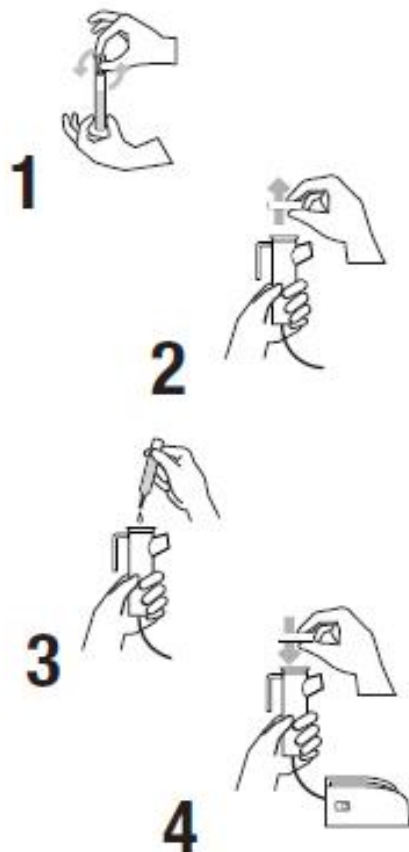
Reason for taking this medicine:



- To give you quick relief by opening the airways.
- **This is a rescue medicine and should be used for coughing, wheezing, or shortness of breath.**
- If you are in the yellow zone on your asthma action plan, use this medicine.
- If your doctor tells you, use this medicine 15-30 minutes before exercising.

How and when to take this medicine:

- Use with a nebulizer machine.
- Use 1 vial for coughing, wheezing, or shortness of breath.



1. Twist open 1 vial.
2. Lift cap off nebulizer.
3. Empty the liquid into the nebulizer chamber.
4. Put cap back onto nebulizer.



5. Children 6 years and older:
 - Use a mouthpiece
 - Sit up and breathe in and out



6. Children under 6 years old:
 - Use mask
 - Sit up and breathe in and out

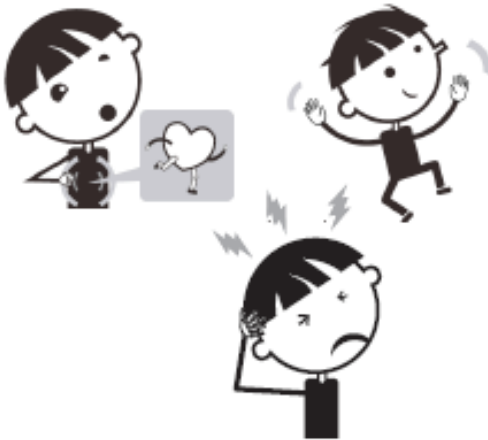
7. Turn on the nebulizer.

8. It will take 10-15 minutes to get the full treatment. The nebulizer will start to sputter near the end of the treatment. Turn off the nebulizer when the chamber is empty.



Wait at least 4 hours between uses.

Possible side effects:



- Fast heartbeat.
- Can make you hyper or cause your body to shake.
- Can make you fussy
- Sore throat
- Headache

Call the doctor or clinic if:

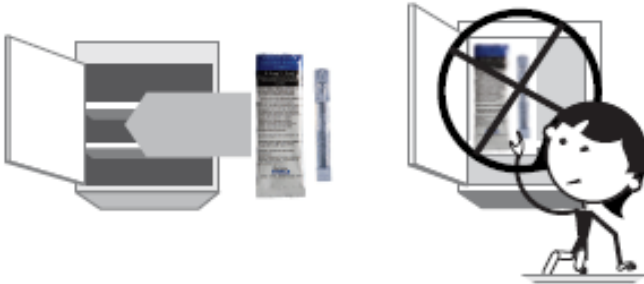
- Medicine does not help your coughing, wheezing, or shortness of breath.
- You need to use a breathing treatment in less than 4 hours. Use 1 or 2 more vials and go to your doctor's office, urgent care, ER, or call 9-1-1.
- You need to use a breathing treatment more than 2 days a week for coughing, wheezing, or shortness of breath.
- You have questions about this medicine or how to use it.

Important things to remember:

- Clean nebulizer machine daily.
 - Unscrew plastic chamber.
 - Soak in warm soapy water for 15 minutes.
 - Run water through it, shake off water, and set out to dry.

How to store:

- Store in a cool dry cabinet.
- Do not store in bathroom.
- Keep out of reach of children.



Flovent® HFA

(Fluticasone propionate with spacer and mask)

Metered dose inhaler



□ 44 mcg



□ 110 mcg



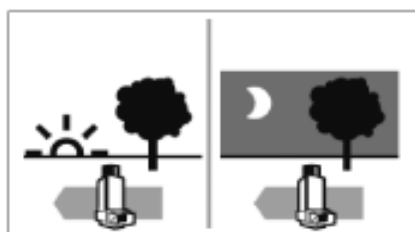
□ 220 mcg



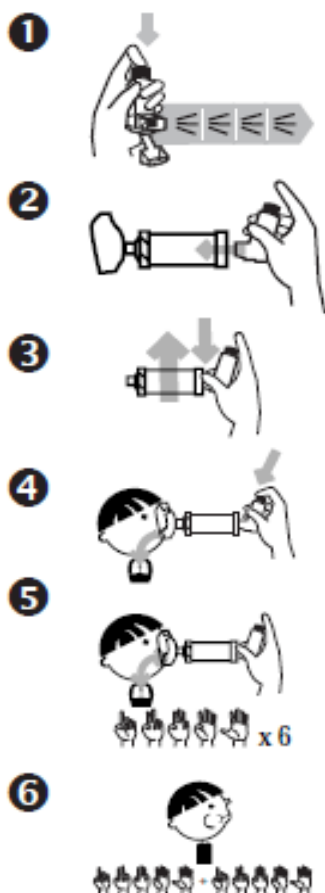
Reason for taking this medicine:

- To help reduce and prevent swelling in the lungs.
- This is a controller medicine and will not help if you are coughing, wheezing or have shortness of breath.
- This is a medicine that must be used every day.

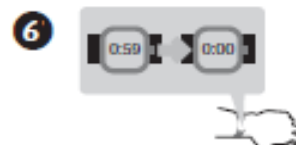
How and when to take this medicine:



- Use a spacer and mask with this inhaler.
- Use 2 times each day – 2 puffs in the morning and 2 puffs in the evening.



1. The first time you use this inhaler:
 - Shake and then push down on the inhaler 4 times to prime or waste the inhaler.
 - Spray the medicine into the air.
 - Dose counter should show: "120."
2. Place the inhaler in the end of spacer.
3. Shake well for 10 seconds.
4. Place mask tightly over the nose and mouth.
 - Push down on the inhaler.
 - Take slow deep breaths.
5. Breathe in and out 6 times.
6. Wait 1 minute.
7. Repeat steps 3–6 for second puff.



Possible side effects:



- Dry mouth
- Sore throat
- Hoarse voice
- Headache

Call the doctor or clinic if:

- You are exposed to chickenpox or measles.
- You can see blood when you spit.
- You have white spots in the mouth, called thrush.
- You have questions about this medicine or how to use it.

Important things to remember:



Fill mouth with water



Swish around water



Spit out water

- Rinse your mouth out with water, brush teeth, or get a drink after every use. This can help avoid getting thrush.
- If you suddenly have trouble breathing, use your rescue inhaler, albuterol.
- Flovent® HFA may take a few weeks before it starts to work.
- Use this medicine until your doctor tells you to stop.
- Never put metal canister in water.
- Clean plastic holder each week:
 - Flovent® has a built-in counter ; do not remove the metal canister. Use a cotton swab to clean the opening where the medicine sprays out of the canister.
- Clean spacer and mask each week:
 - Soak in warm soapy water for 15 minutes.
 - Run warm water through it, shake off water and set out to dry.
- Flovent® HFA has a dose counter to tell you when the inhaler is empty.
- Refill your inhaler when the dose counter shows: "020".

How to store:

- Store in a cool dry cabinet.
- Do not store in bathroom.
- **Keep out of reach of children.**





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Asmanex® HFA (Mometasone furoate with spacer and mask) Metered dose inhaler



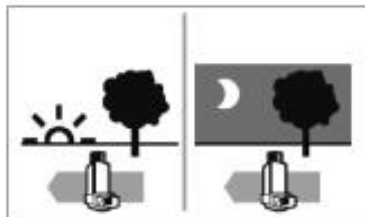
☐ 100mcg

☐ 200mcg

Reason for taking this medicine:

- To help reduce and prevent swelling in the lungs
- This is a controller medicine and will not work if you are coughing, wheezing, or have shortness of breath.
- This is a medicine that must be used every day.

How and when to take this medicine:



- Use a spacer and mask with this medicine.
- Use two (2) times each day – 1 or 2 puffs in the morning and 1 or 2 puffs in the evening.



1. The **first time** you use this inhaler:
 - Shake and then push down on the inhaler 4 times to prime or waste the inhaler.
 - Spray the medicine into the air.
 - The dose counter should show: 120.
2. Place the **inhaler** in the end of the spacer.
3. Shake well for 10 seconds.
4. Place mask tightly over the nose and mouth.
 - Push down on the inhaler.
 - Take slow, deep breaths.
5. Breathe in and out 6 times.
6. Wait 1 minute.
7. Repeat steps 3-5 for second puff.



Possible side effects:



- Dry mouth
- Sore throat
- Hoarse voice
- Headache

Call the doctor or clinic if:

- You are exposed to chickenpox or measles.
- You see blood when you spit.
- You have white spots in the mouth, called thrush.
- You have questions about this medicine or how to use it.

Important things to remember:



Fill mouth with water



Swish around water



Spit out water

- Rinse your mouth out with water, brush teeth, or get a drink after every use. This can help avoid getting thrush.
- If you are suddenly having trouble breathing, use your rescue inhaler, albuterol.
- Asmanex® HFA may take a few weeks before it starts to work. -Use this medicine until your doctor tells you to stop.
- Clean plastic holder each week:
 - Asmanex® HFA has a built-in counter; do not remove the metal canister.
 - Use a cotton swab to clean the opening where the medicine sprays out the canister.
 - Wipe down the outside of the plastic holder with a dry lint-free cloth.
- Clean spacer and mask each week:
 - Soak in warm soapy water for 15 minutes.
 - Run water through it, shake off water, and set out to dry.
- Asmanex® HFA has a dose counter to tell you when the inhaler is empty.
- Refill your inhaler when the dose counter shows: "020."

How to store:

- Store in a cool dry cabinet.
- Do not store in bathroom.
- Keep out of reach of children.





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Asmanex[®] Twisthaler[®] (Mometasone furoate) in 30, 60, or 120 doses

Dry powder inhaler



☐ 110mcg

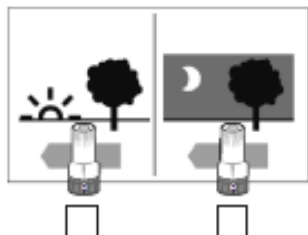


☐ 220mcg

Reason for taking this medicine:

- To help reduce and prevent swelling in the lungs.
- This is a controller medicine and will not help if you are coughing, wheezing or have shortness of breath.
- This is a medicine that must be used every day.

How and when to take this medicine:

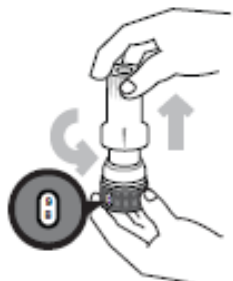


Use 1 or 2 times each day, as directed by your doctor.



1. Open the inhaler

- Hold inhaler upright with the colored base on the bottom.



- Hold the bottom and twist the white cap to the left, you will hear and feel a click.



- Lift the cap off.
- Make sure the arrow is lined up with the dose counter.
- Do not shake the inhaler.



2. **Inhale a dose**

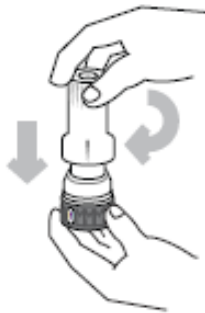
- Turn your head to the side and breathe out
- Do not breathe into the inhaler



- Close mouth tightly around the mouthpiece.
- Breathe in fast and deep through the mouthpiece.
SUCK LIKE A MILKSHAKE!
- You may not feel or taste the medicine.



3. **Hold your breath for 10 seconds.**



4. Replace the cap and twist it to the right until it clicks. The cap must be closed to load the next dose.

Possible side effects:



- Dry mouth
- Sore throat
- Hoarse voice
- Headache

Call the doctor or clinic if:

- You are exposed to chickenpox or measles.
- You can see blood when you spit.
- You have white spots in the mouth, called thrush.
- You have questions about this medicine or how to use it.

Important things to remember:



Fill mouth with water



Swish around water



Spit out water

- Rinse your mouth out with water, brush teeth, or get a drink after every use. This can help avoid getting thrush.
- If you suddenly have trouble breathing, use your rescue inhaler, albuterol.
- Asmanex® may take a few weeks before it starts to work.
 - Use this medicine until your doctor tells you to stop.
- Wipe the mouthpiece with a dry cloth after each use.
- Refill your inhaler every 30 days or when the dose counter shows "05".

How to store:

- Store in cool dry cabinet.
- Do not store in bathroom.
- Keep out of reach of children.





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Pulmicort Flexhaler™ (Budesonide)

Dry powdered inhaler



□ 90 mcg



□ 180 mcg

Reason for taking this medicine:

- To help reduce and prevent swelling in the lungs.
- This is a controller medicine and will not help if you are coughing, wheezing or have shortness of breath.
- This is a medicine that must be used every day.

How and when to take this medicine:



- Use 2 times each day, as directed by your doctor.

The first time you use this medicine:

- Hold the inhaler in the middle with your finger and thumb of one hand, and twist the brown base all the way in one direction and then all the way in the other direction.
- You will hear it click.
- Repeat this step a second time.
- You will not need to prime the Flexhaler unit again.

1



1. Open the inhaler:

- Hold in the upright position with the brown base on the bottom.
- Twist and lift off the white cover.

2



2. Twist and Click:

- Hold the inhaler in the middle with your finger and thumb of one hand, and twist the brown base with the other hand, going all the way in one direction and then all the way in the other direction. You will hear it click.
- Do not shake the inhaler.

3



3. Inhale a dose:

- Turn your head to the side and breathe out – do not breathe into the inhaler.
- Close mouth tightly around the mouthpiece.
- Breathe in fast and deep through the mouthpiece.
SUCK LIKE A MILKSHAKE!
- You may not feel or taste the medicine.



4



4. Hold your breath for 10 seconds.

Possible side effects:

- Dry mouth
- Sore throat
- Hoarse voice
- Headache



Call the doctor or clinic if:

- You are exposed to chickenpox or measles.
- You can see blood when you spit.
- You have white spots in the mouth, called thrush.
- You have questions about this medicine or how to use it.

Important things to remember:



Fill mouth with water



Swish around water



Spit out water

- Rinse your mouth out with water, brush teeth, or get a drink after every use. This can help avoid getting thrush.
- If you are suddenly having trouble breathing, use your rescue inhaler, albuterol.
- Pulmicort Flexhaler™ may take a few weeks before it starts to work
 - Use this medicine until your doctor tells you to stop.
- Pulmicort Flexhaler™ has a built in dose counter to tell you when the inhaler is empty.
- Refill your inhaler when the dose counter shows “20”.

How to store:



- Store in a cool dry cabinet.
- Do not store in bathroom.
- Keep out of reach of children.



**NATIONWIDE
CHILDREN'S®**

When your child needs a hospital, everything matters.

Symbicort® (Budesonide and Formoterol with spacer and mask)

Metered dose inhaler



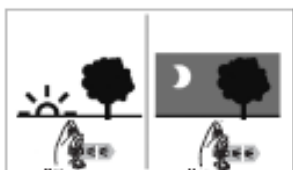
☐ 80/4.5 mcg

☐ 160/4.5 mcg

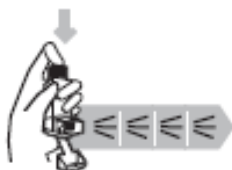
Reason for taking this medicine:

- To help reduce and prevent swelling in the lungs.
- This is a controller medicine and will not help if you are coughing, wheezing or have shortness of breath.
- This is a medicine that must be used every day.

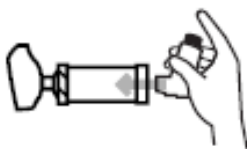
How and when to take this medicine:



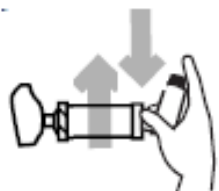
1



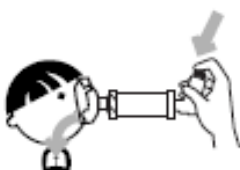
2



3



4



5



- Use a spacer and mask with this inhaler.
- Use 2 times each day - 2 puffs in the morning and 2 puffs in the evening.

1. The first time you use this inhaler:
 - Shake and then push down on the inhaler 4 times to prime or waste the inhaler.
 - Spray the medicine into the air.
 - The dose counter should show "120."

2. Place inhaler in the end of spacer.

3. Shake well for 10 seconds.

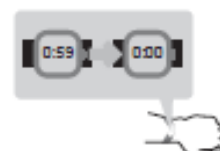
4. Place mask tightly over the nose and mouth.
 - Push down on the inhaler.
 - Take slow deep breaths.

5. Breathe in and out 6 times.

6. Wait 1 minute

- Repeat steps 3-5 for second puff.

7





Possible side effects:

- Dry mouth
- Sore throat
- Hoarse voice
- Headache
- Fast heartbeat
- Can make you hyper or cause your body to shake.

Call the doctor or clinic if:

- You are exposed to chickenpox or measles.
- You can see blood when you spit.
- You have white spots in the mouth, called thrush.
- You have questions about this medicine or how to use it.

Important things to remember:



Fill mouth with water

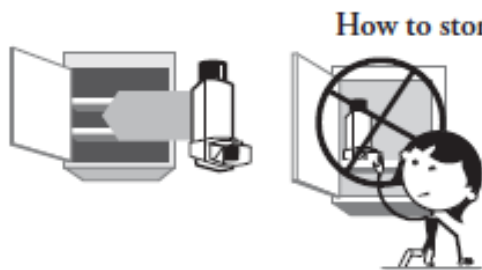


Swish around water



Spit out water

- Rinse your mouth out with water, brush teeth, or get a drink after every use. This can help avoid getting thrush.
- If you suddenly have trouble breathing, use your rescue inhaler, albuterol.
- SYMBICORT® may take a few weeks before it starts to work.
 - Use this medicine until your doctor tells you to stop.
- Never put metal canister in water.
- Clean plastic holder each week:
 - SYMBICORT® has a built-in counter; do not remove the metal canister. Use a cotton swab to clean the opening where the medicine sprays out of the canister.
- Clean spacer and mask each week:
 - Soak in warm soapy water for 15 min.
 - Run water through it, shake off water and set out to dry.
- SYMBICORT® has a dose counter to tell you when the inhaler is empty.
- Refill your inhaler when the dose counter shows "020."
- Throw the inhaler away 3 months after taking it out of the foil pouch, even if you have not used it all.



How to store:

- Store in a cool dry cabinet.
- Do not store in bathroom.
- Keep out of reach of children.



**NATIONWIDE
CHILDREN'S®**

When your child needs a hospital, everything matters.

Dulera®

(Mometasone and Formoterol with
spacer and mask)

Metered dose inhaler



100/5mcg

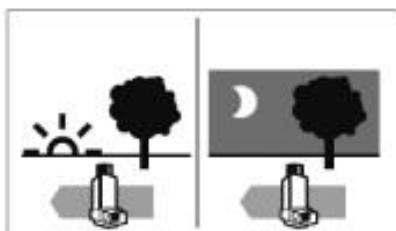


200/5mcg

Reason for taking this medicine:

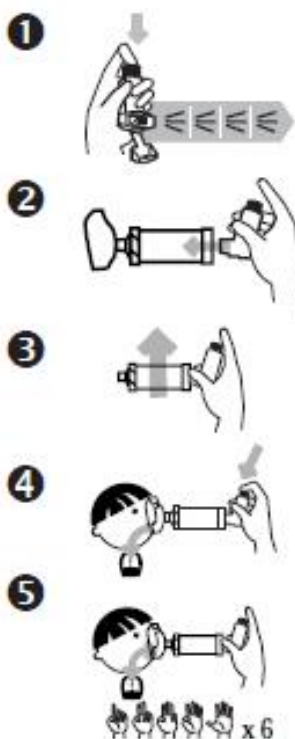
- To help reduce and prevent swelling in the lungs.
- This is a controller medicine and will not help if you are coughing, wheezing or have shortness of breath.
- This is a medicine that must be used every day.

How and when to take this medicine:

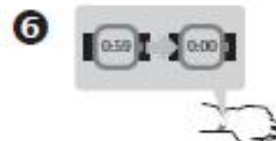


- Use a spacer and mask with this inhaler.
- Use 2 times each day –2 puffs in the morning and 2 puffs in the evening.

1. The **first time** you use this inhaler:
 - Shake and then push down on the inhaler 4 times to prime or waste the inhaler.
 - Spray the medicine into the air.
 - The dose counter should show "120."



2. Place the **inhaler** in the end of the spacer.
3. Shake well for 10 seconds.
4. Place mask tightly over the nose and mouth.
 - Push down on the inhaler.
 - Take slow, deep breaths.
5. Breathe in and out 6 times.
6. Wait 1 minute.
7. Repeat steps 3-5 for second puff.



Possible side effects:



- Dry mouth
- Sore throat
- Hoarse voice
- Headache
- Fast heartbeat
- Tremor or nervousness

Call the doctor or clinic if:

- You are exposed to chickenpox or measles.
- You can see blood when you spit.
- You have white spots in the mouth, called thrush.
- You have questions about this medicine or how to use it.

Important things to remember:



Fill mouth with water



Swish around water



Spit out water

- Rinse your mouth out with water, brush teeth, or get a drink after every use. This can help avoid getting thrush.
- If you are suddenly having trouble breathing, use your rescue inhaler, albuterol.
- Dulera® may take a few weeks before it starts to work.
- Use this medicine until your doctor tells you to stop.
- Never put metal canister in water.
- Clean plastic holder each week:
 - Dulera® has a built-in counter; do not remove the metal canister.
 - Use a cotton swab to clean the opening where the medicine sprays out of the canister.
- Clean spacer and mask each week:
 - Soak in warm soapy water for 15 minutes.
 - Run water through it, shake off water, and set out to dry.
- Dulera® has a dose counter to tell you when the inhaler is empty.
- Refill your inhaler when the dose counter shows “020.”

How to store:



- Store in a cool dry cabinet.
- Do not store in bathroom.
- Keep out of reach of children.



**NATIONWIDE
CHILDREN'S®**

When your child needs a hospital, everything matters.

Advair® HFA (Fluticasone and Salmeterol with spacer and mask)

Metered dose inhaler



☐ 45/21 mcg



☐ 115/21 mcg

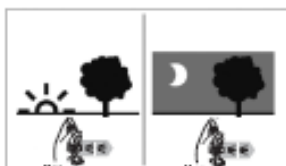


☐ 230/21 mcg

Reason for taking this medicine:

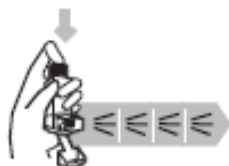
- To help reduce and prevent swelling in the lungs.
- This is a controller medicine and will not help if you are coughing, wheezing or have shortness of breath.
- This is a medicine that must be used every day.

How and when to take this medicine:



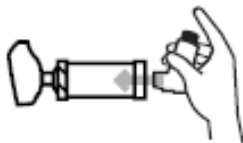
- Use a spacer and mask with this inhaler.
- Use 2 times each day - 2 puffs in the morning and 2 puffs in the evening.

①



1. The first time you use this inhaler:
 - Shake and then push down on the inhaler 4 times to prime or waste the inhaler.
 - Spray the medicine into the air.
 - The dose counter should show "120."

②



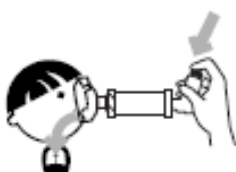
Place inhaler in the end of spacer.

③



2. Shake well for 10 seconds.

④

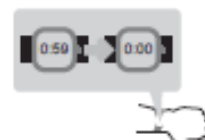


3. Place mask tightly over the nose and mouth.
 - Push down on the inhaler.
 - Take slow deep breaths.

⑤



4. Breathe in and out 6 times.
5. Wait 1 minute
6. Repeat steps 3-5 for second puff.



Possible side effects:



- Dry mouth
- Sore throat
- Hoarse voice
- Headache
- Fast heartbeat
- Can make you hyper or cause your body to shake.

Call the doctor or clinic if:

- You are exposed to chickenpox or measles.
- You can see blood when you spit.
- You have white spots in the mouth, called thrush.
- You have questions about this medicine or how to use it.

Important things to remember:



Fill mouth with water



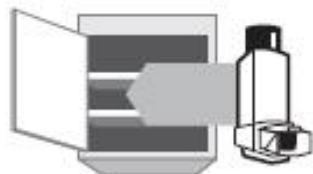
Swish around water



Spit out water

- Rinse your mouth out with water, brush teeth, or get a drink after every use. This can help avoid getting thrush.
- If you suddenly have trouble breathing, use your rescue inhaler, albuterol.
- Advair® may take a few weeks before it starts to work.
 - Use this medicine until your doctor tells you to stop.
- Never put metal canister in water.
- Clean plastic holder each week:
 - Advair® has a built-in counter; do not remove the metal canister. Use a cotton swab to clean the opening where the medicine sprays out of the canister.
- Clean spacer and mask each week:
 - Soak in warm soapy water for 15 min.
 - Run water through it, shake off water and set out to dry.
- Advair® has a dose counter to tell you when the inhaler is empty.
- Refill your inhaler when the dose counter shows "020."
- Throw the inhaler away 1 month after taking it out of the foil pouch, even if you have not used it all.

How to store:



- Store in a cool dry cabinet.
- Do not store in bathroom.
- Keep out of reach of children.

Advair Diskus[®]

(Fluticasone/
Salmeterol)



☐ 100/50 mcg



☐ 250/50 mcg



☐ 500/50 mcg

Reason for taking this medicine:

- To help reduce and prevent swelling in the lungs.
- This is a controller medicine and will not help if you are coughing, wheezing or have shortness of breath.
- This is a medicine that must be used every day.

How and when to take this medicine:



- Use 2 times each day - 1 puff in the morning and 1 puff in the evening.



1. Hold the Advair Diskus[®] in one hand, and put the thumb of your other hand on the thumb grip to slide Diskus[®] open.
2. Place thumb on lever and push your thumb away from you as far as it will go until you hear a click.
3. Turn your head to the side and breathe out -do not breathe into the inhaler.
4. Hold the Diskus[®] flat.
 - Close mouth tightly around the mouthpiece.
 - Breathe in fast and deep through the mouthpiece.

HOLD LIKE A HAMBURGER – SUCK LIKE A MILKSHAKE!

 - You may not feel or taste the medicine
5. Hold your breath for 10 seconds.
6. Close the Diskus[®] when you are finished so it will be ready for your next dose.

Possible side effects:



- Dry mouth
- Sore throat
- Hoarse voice
- Headache
- Fast heartbeat
- Can make you hyper or cause your body to shake



Call the doctor or clinic if:

- You are exposed to chickenpox or measles.
- You can see blood when you spit.
- You have white spots in your mouth, called thrush.
- You have questions about this medicine or how to use it.

Important things to remember:



Fill mouth with water



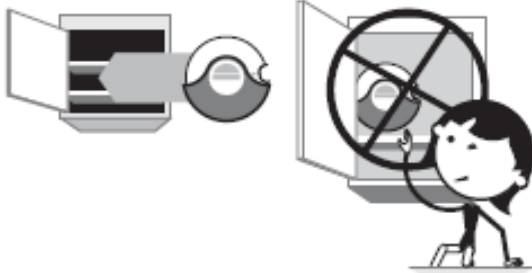
Swish around
water



Spit out water

- Rinse your mouth out with water, brush teeth, or get a drink after every use. This can help avoid thrush.
- If you suddenly have trouble breathing, use your rescue inhaler, albuterol.
- Advair® may take a few weeks before it starts to work. Use this medicine until your doctor tells you to stop.
- Wipe the mouthpiece with a dry cloth after each use.
- Advair® has a dose counter to tell you when the inhaler is empty.
- Refill your inhaler when the dose counter shows "10."
- Throw the Diskus® away 1 month after taking it out of the foil pouch, even if you have not used it all.

How to store:



- Store in a cool dry cabinet.
- Do not store in bathroom.
- Keep out of reach of children.