












Inhaled CONTROLLER Medications





Generic Name	Brand Name	FDA Approved Age	Available Strengths (# Doses/Inhaler)	Comments
Inhaled Corticosteroids (ICS)				
Ciclesonide	 Alvesco HFA	12 and older	80 or 160 mcg per inhalation (60)	MDI; should be used with a spacer; no shaking required; 3 primes to start; reprime after 10 days without use; dose indicator in increments of 10
Mometasone	 Asmanex DPI*	4 and older	110 mcg per actuation (14, 30, 60, or 120)	Has dose counter; no priming; do not tip once dose is loaded; avoid humidity & moisture; may be given once daily in the evening; expires 45 days after opening
		12 and older	220 mcg per actuation (14, 30, 60, or 120)	
Fluticasone	 Flovent DPI*	4 and older	50, 100, 250 mcg per inhalation (60)	No priming; do not tip once dose is loaded; avoid humidity and moisture; 50 mcg strength is equivalent to Flovent HFA 44 mcg; expires 6 weeks after opening
		4 and older	44 mcg per inhalation (120)	MDI; has dose counter; should be used with a spacer; shake 5 seconds; 4 primes to start; reprime after 7 days without use or if dropped
	12 and older	44, 110 or 220 mcg per inhalation (120)		
Budesonide	 Pulmicort Flexhaler DPI*	6 and older	90 mcg per actuation (60); 180 mcg per actuation (120)	Has dose indicator in increments of 10; must twist fully to the right, then left twice to prime; do not tip once dose is loaded; avoid humidity and moisture
	 Pulmicort Respules	12 months to 8 years	0.25, 0.5 or 1.0 mg per unit dose	Deliver with closed system mask if < 3 years (Bubbles fish mask); older children may use a mouthpiece if they are able to breath through their mouths only (nose clips may be helpful); expires two weeks after opening
Beclomethasone	 QVAR HFA	5 and older	40 or 80 mcg per actuation (120)	MDI; recommended to be used without spacer; no shaking required; 2 primes to start; reprime after 10 days without use
Long-Acting Beta₂-Agonists (LABAs) - NOT TO BE USED WITHOUT ICS				
Salmeterol	 Serevent DPI*	4 and older	50 mcg per actuation (60)	Not to be used for quick relief or without ICS in asthma; no priming; do not tip once dose is loaded; avoid humidity and moisture; expires 6 weeks after opening
Formoterol	 Foradil DPI*	5 and older	12 mcg per capsule (72 or 360)	Not to be used for quick relief or without ICS in asthma; sometimes used for exercise-induced bronchospasm prevention; no priming; do not tip once dose is loaded; avoid humidity and moisture; expires 4 months after opening
ICS and LABA Combinations				
Fluticasone and Salmeterol	 Advair DPI*	4 and older	100/50, 250/50 or 500/50 mcg per inhalation (60)	No priming; has dose counter; do not tip once dose is loaded; avoid humidity and moisture; do not use more than one dose twice daily; expires one month after opening
		12 and older	45/21, 115/21 or 230/21 mcg per inhalation (120)	MDI; has dose counter; should be used with a spacer; shake 5 seconds; 4 primes to start; reprime after 4 weeks without use or if dropped; do not use more than twice daily
Mometasone and Formoterol	 Dulera	12 and older	100/5, 200/5 mcg per inhalation (120)	MDI; should be used with a spacer; shake 5 seconds; 4 primes to start, reprime with 4 puffs after 5 days without use; do not use more than twice daily; do not remove canister from the actuator
Budesonide and Formoterol	 Symbicort HFA	12 and older	80/4.5 or 160/4.5 mcg per inhalation (120)	MDI; has dose counter; should be used with a spacer; shake 5 seconds; 2 primes to start, reprime after 7 days without use; do not use more than twice daily; expires 90 days after opening

* Contains lactose

† Recommended per NHLBI/NAEPP guidelines, but not FDA-approved for this age group

The information in this reference was reviewed by the UMHS Asthma Quality Improvement Steering Committee and was last updated on 10/20/2011. Questions and/or comments may be directed to Karla Stoermer-Grossman, MSA, RN, AE-C (kstoerme@umich.edu) or Annie Sy, PharmD (anniesy@umich.edu).

Inhaled QUICK RELIEF Medications

Generic Name	Brand Name	FDA Approved Age	Available Strengths (# Doses/Inhaler)	Comments	
Short-Acting Beta₂-Agonists					
Albuterol for Nebulization		AccuNeb	2 and older	0.63 mg per 3 mL unit dose 1.25 mg per 3 mL unit dose	Pre-mixed unit dose (3 mL); vials must be placed back in the foil wrap after the foil wrap is opening; expires 1 week after foil wrap is opened
		0.083%	2 and older	2.5 mg per 3 mL unit dose	Pre-mixed unit dose (3 mL)
		0.50%	2 and older	0.25-0.5 mL can be added to 2-3 mL saline solution for inhalation, then nebulized	Supplied as 20 mL dropper bottle; must use dropper provided to measure up dose.
Albuterol		ProAir HFA	4 and older	90 mcg per inhalation (200)	MDI; should be used with a spacer; shake 5 seconds; 3 primes to start; reprime after 2 weeks without use
		Proventil HFA, Ventolin HFA	4 and older	90 mcg per inhalation (200)	MDI; Ventolin has dose counter; should be used with a spacer; shake 5 seconds; 4 primes to start; reprime after 2 weeks without use or if dropped; expires 6 months after opening
Levalbuterol		Xopenex HFA	4 and older	45 mcg per inhalation (200)	MDI; should be used with a spacer; shake 5 seconds; 4 primes to start; reprime after 3 days without use
		Xopenex Nebulized	6 and older 12 and older	0.31 mg per unit dose 0.63 or 1.25 mg per unit dose	Unit dose for nebulization; needs no mixing; must use as soon as foil wrapper is opened
Pirbuterol		Maxair Autohaler CFC	12 and older	200 mcg per inhalation (400)	MDI; breath-actuated so no spacer needed; shake 5 seconds; 2 primes to start; reprime after 2 days without use

MDI, metered dose inhaler; DPI, dry powered inhaler; CFC, MDI containing chlorofluorocarbon propellants; HFA, MDI containing hydrofluoroalkane propellants

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