

Inhaled medications for chronic obstructive pulmonary disorder (COPD)

The following medications are indicated for the treatment of COPD. The long-acting beta2-agonists (LABA) formoterol fumarate (Foradil®) and indacaterol (Onbrez®) were previously indicated but are no longer on the market in Canada.

Medication	Brand name(s)	Device(s)	Delivery mechanism	Coverage and cost for usual dose (\$/100 days)	Dosing (Recommended dose is the maximum dose unless otherwise noted)
Short-acting beta2-agonist (SABA)					
Side effects of all SABA: Tremor, nervousness, hypokalemia, tachycardia, palpitations, irritability, restlessness, flushing					
<i>salbutamol</i>	Airomir® Ventolin®	Diskus® HFA Nebules	DPI MDI ISLN	NIHB: ✓ ODB: ✓ (excludes Diskus® and 0.5mg/mL Nebules) \$20-30 (Diskus/HFA) \$165-305 (Nebules)	Diskus® (200mcg/actuation): 1 actuation inhaled TID or QID PRN Max dose: 4 actuations (800mcg)/day HFA (100mcg/puff): 1-2 puffs inhaled TID or QID PRN Max dose: 8 puffs (800mcg)/day Nebules: 2.5-5mg inhaled QID PRN
<i>terbutaline</i>	Bricanyl®	Turbuhaler®	DPI	NIHB: ✓ ODB: ✓ \$30-65	Turbuhaler® (0.5mg/actuation): 1 actuation inhaled q4-6h PRN Max dose: 6 actuations/day
Short-acting muscarinic antagonist (SAMA)					
Side effects of all SAMA: Dry mouth, bitter/metallic taste, mydriasis, glaucoma (precipitation or worsening), urinary retention, tachycardia, hypotension, palpitations					
<i>ipratropium</i>	Atrovent®	HFA Nebules	MDI ISLN	NIHB: ✓ ODB: ✓ \$30-65	HFA (20mcg/puff): 2 - 4 puffs inhaled q6-8h Max dose: 12 puffs/day Nebules: 250 – 500mcg inhaled TID or QID
Short-acting muscarinic antagonist/Short-acting beta2-agonist (SAMA/SABA)					
<i>ipratropium/salbutamol</i>	Combivent®	Respimat® Nebules	SMI ISLN	NIHB: ✓ ODB: ✓ (excludes Respimat®) \$350-530 (Nebules) \$120-180 (Respimat)	Nebules (0.5/2.5mg per 2.5mL): 2.5mL inhaled q6h PRN Respimat® (20/100mcg per actuation): 1 actuation inhaled QID Max dose: 6 actuations/day
Long-acting beta2-agonist (LABA)					
Side effects of all LABA: Tremor, nervousness, hypokalemia, tachycardia palpitations					
<i>formoterol fumarate dihydrate</i>	Oxeze®	Turbuhaler®	DPI	NIHB: ✓ ODB: ✓	Turbuhaler® (6 or 12mcg/actuation): 1 actuation inhaled q12h Max dose: 48mcg/day
<i>salmeterol</i>	Serevent®	Diskus®	DPI	NIHB: ✓ ODB: ✓ \$267	Diskus® (50mcg/actuation): 1 actuation inhaled BID

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Long-acting muscarinic antagonist (LAMA)					
Side effects of all LAMA: Dry mouth, metallic taste, mydriasis, glaucoma if released into eye, urinary retention					
<i>aclidinium</i>	Tudorza®	Genuair®	IDPC	NIHB: ✓ ODB: ✓ \$206	Genuair® (400mcg/actuation): 1 actuation inhaled BID
<i>glycopyrronium</i>	Seebri®	Breezhaler®	IDPC	NIHB: ✓ ODB: ✓ \$206	Breezhaler® (50mcg/capsule): 1 capsule inhaled once daily
<i>tiotropium</i>	Spiriva®	HandiHaler® Respimat®	IDPC SMI	NIHB: ✓ ODB: ✓ \$206	HandiHaler® (18mcg/capsule): 1 capsule inhaled once daily Respimat® (2.5mcg/actuation): 2 actuation inhaled once daily
<i>umeclidinium</i>	Incruse®	Ellipta®	DPI	NIHB: ✓ ODB: ✓ \$189	Ellipta® (62.5mcg/actuation): 1 actuation inhaled once daily
Inhaled corticosteroid/Long-acting beta2-agonist (ICS/LABA)					
<i>budesonide/formoterol fumarate dihydrate</i>	Symbicort®	Turbuhaler®	DPI	NIHB: ✓ ODB: ✓ \$140-350	Turbuhaler® (100/6mcg or 200/6mcg per actuation): 2 actuation inhaled BID Max dose: 8 actuation/day
<i>fluticasone/salmeterol</i>	Advair®	Diskus® pMDI	MDI DPI	NIHB: ✓ ODB: ✓ \$161-268 (Diskus) \$229-634 (pMDL)	Diskus® (100/50mcg, 250/50mcg or 500/50mcg per actuation): 1 actuation inhaled BID pMDI (125/25mcg or 250/25mcg per puff): 2 puffs inhaled BID
<i>fluticasone/vilanterol</i>	Breo®	Ellipta®	DPI	NIHB: ✓ ODB: ✓ \$229-634	Ellipta® (100/25mcg or 200/25mcg per actuation): 1 actuation inhaled once daily
Long-acting muscarinic antagonist/Long-acting beta2-agonist (LAMA/LABA)					
<i>aclidinium/formoterol fumarate dihydrate</i>	Duaklir®	Genuair®	DPI	NIHB: ✓ ODB: ✓ \$235	Genuair® (400/12mcg per actuation): 1 actuation inhaled BID
<i>glycopyrronium/indacaterol</i>	Ultibro®	Breezhaler®	IDPC	NIHB: ✓ ODB: ✓ \$288	Breezhaler® (50/110mcg per capsule): 1 capsule inhaled once daily

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Long-acting muscarinic antagonist/Long-acting beta2-agonist (LAMA/LABA)					
<i>tiotropium/olodaterol</i>	Inspiro [®]	Respimat [®]	SMI	NIHB: ✓ ODB: ✓ \$241	Respimat [®] (2.5/2.5mcg per actuation): 2 actuations inhaled once daily
<i>umeclidinium/vilanterol</i>	Anoro [®]	Ellipta [®]	DPI	NIHB: ✓ ODB: ✓ \$327	Ellipta [®] (62.5/25mcg per actuation): 1 actuation inhaled once daily
Inhaled corticosteroid/Long-acting muscarinic antagonist/Long-acting beta2-agonist (ICS/LAMA/LABA)					
<i>fluticasone/umeclidinium/vilanterol</i>	Trelegy [®]	Ellipta [®]	DPI	NIHB: ✓ (excludes 200/62.5/25mcg) ODB: ✓ (excludes 200/62.5/25mcg) \$2229-634	Ellipta [®] (100/62.5/25 mcg per actuation): 1 actuation inhaled once daily
<i>budesonide / glycopyrronium / formoterol fumarate dihydrate</i>	Breztri [®]	Aerosphere [®]	MDI	NIHB: ✓ ODB: ✓ \$466	Aerosphere [®] (182/5.8/8.2mcg per actuation): 2 actuations inhaled BID
Inhaled corticosteroid (ICS) Single-agent ICS products are NOT indicated as monotherapy for the treatment of COPD. However, these products may be used in tandem with a LABA, LAMA or LABA/LAMA combination product					
Side effects of all ICS: Oropharyngeal candidiasis and hoarseness, skin bruising, posterior subcapsular, nuclear cataracts, possible worsening of glaucoma. May decrease bone mineral density and increase fracture risk.					
<i>budesonide</i>	Pulmicort [®]	Turbuhaler [®] Nebules	DPI Nebules	NIHB: ✓ ODB: ✓ \$47-239 (Turbuhaler) \$58-219 (Nebules)	Turbuhaler [®] (100, 200 or 400mcg per actuation): 400-2400 mcg/day divided BID Nebules: 0.125-2mg per dose
<i>fluticasone propionate</i>	Flovent [®]	Diskus [®] HFA	DPI MDI	NIHB: ✓ ODB: ✓ (excludes Diskus [®] 100mcg) \$128-302 (Diskus [®]) \$86-171 (HFA)	Diskus [®] (250 or 500mcg per actuation): 200-1000mcg/day divided BID HFA (50, 100 or 250mcg per puff): 200-1000mcg/day divided BID
<i>ciclesonide</i>	Alvesco [®]	pMDI	MDI	NIHB: ✓ ODB: ✓ \$188-306	pMDI (100 or 200mcg per puff): 100-800mcg/day (if at 800mcg/day daily, divide dose into BID)
<i>fluticasone furoate</i>	Arnuity [®]	Ellipta [®]	DPI	NIHB: ✓ ODB: ✓ \$173-338	Ellipta [®] (100 or 200mcg per actuation): 100-200mcg inhaled once daily

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<i>mometasone furoate</i>	Asmanex®	Twisthaler®	DPI	NIHB: ✓ (excludes 100mcg) ODB: ✓ (excludes 100mcg) \$154-313	Twisthaler® (200 or 400mcg per actuation); 200-400mcg/day Max dose: 400mcg BID

Legend: DPI = dry powder inhaler, MDI = metered dose aerosol inhaler, ISLN = inhalation suspension liquid for nebulization, IDPC = inhaled dry powder capsule, SMI = soft mist inhaler