The COPD prescribing tool

This tool provides pharmacological treatment options for patients with COPD based on their symptom severity.


Additional information on classifying severity of symptoms is provided below.

Patient classification table

<table>
<thead>
<tr>
<th>Patient category</th>
<th>Characteristics</th>
<th>Exacerbations per year</th>
<th>mMRC</th>
<th>CAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Less symptoms: low exacerbation risk</td>
<td>≤ 1 not leading to hospitalisation</td>
<td>0–1</td>
<td>&lt; 10</td>
</tr>
<tr>
<td>B</td>
<td>More symptoms: low exacerbation risk</td>
<td>≤ 1 not leading to hospitalisation</td>
<td>≥ 2</td>
<td>≥ 10</td>
</tr>
<tr>
<td>C</td>
<td>Less symptoms: high exacerbation risk</td>
<td>≥ 2, or 1 requiring hospitalisation</td>
<td>0–1</td>
<td>&lt; 10</td>
</tr>
<tr>
<td>D</td>
<td>More symptoms: high exacerbation risk</td>
<td>≥ 2, or 1 requiring hospitalisation</td>
<td>≥ 2</td>
<td>≥ 10</td>
</tr>
</tbody>
</table>
Exacerbations
An exacerbation is an acute event with worsening of symptoms, beyond normal day-to-day variation, that requires a change in medication. If a patient has been admitted to hospital in the previous 12 months due to a COPD exacerbation then they are considered high risk.

CAT
The COPD Assessment Test (CAT) is designed to quantify how COPD affects a patient’s life and how this changes over time. CAT comprises eight questions and provides a measure of health status ranging from 0–40 and is available from: www.catestonline.org/english/indexEN.htm

mMRC
The modified Medical Research Council (mMRC) questionnaire for assessing the severity of breathlessness.

<table>
<thead>
<tr>
<th>mMRC Grade</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>I only get breathless with strenuous exercise</td>
</tr>
<tr>
<td>1</td>
<td>I get short of breath when hurrying on the level or walking up a slight hill</td>
</tr>
<tr>
<td>2</td>
<td>I walk slower than people of the same age on flat ground because of breathlessness, or I have to stop for breath when walking on my own pace on the level.</td>
</tr>
<tr>
<td>3</td>
<td>I stop for breath after walking about 100 metres or after a few minutes on the level.</td>
</tr>
<tr>
<td>4</td>
<td>I am too breathless to leave the house or I am breathless when dressing or undressing</td>
</tr>
</tbody>
</table>

Acknowledgement Thank you to Dr Ben Brockway, Consultant & Senior Lecturer in Respiratory Medicine Southern DHB and University of Otago, for assistance in producing this resource.

We welcome your feedback about this tool. Email your comments to: contact@bpac.org.nz
www.bpac.org.nz/copd

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Prescribing by patient category

**A. Less symptoms: low exacerbation risk**
Exacerbations per year: ≤ 1 not leading to hospitalisation
mMRC: 0–1
CAT: < 10

Prescribe a **SAMA**, **OR** a **SABA** **OR** a fixed-dose combination **SAMA/SABA** for “as needed” use **OR** a **LAMA** **OR** a **LABA** for patients with COPD who have few symptoms and a low risk of exacerbations.

**B. More symptoms: low exacerbation risk**
Exacerbations per year: ≤ 1 not leading to hospitalisation
mMRC: ≥ 2
CAT: ≥ 10

Prescribe a **LABA** **OR** a **LAMA** for patients with mild to moderate COPD and persistent troublesome dyspnoea who do not have adequate symptom control using a short-acting bronchodilator.

For patients unable to achieve symptom control with a single long-acting bronchodilator or for patients with severe breathlessness consider a **combination LAMA/LABA** inhaler.

**C. Less symptoms: high exacerbation risk**
Exacerbations per year: ≥ 2 or 1 requiring hospitalisation
mMRC: 0–1
CAT: < 10

Prescribe a **LAMA** for patients who have few symptoms but a high risk of exacerbations.

For patients who develop further exacerbations, the preferred treatment option is a combination **LAMA/LABA** with an **ICS/LABA** as another second-line option for patients requiring treatment intensification.

**D. More symptoms: high exacerbation risk**
Exacerbations per year: ≥ 2 or 1 requiring hospitalisation
mMRC: ≥ 2
CAT: ≥ 10

Prescribe a combination **LAMA/LABA** for patients who have many symptoms and a high risk of exacerbations.

For patients who develop further exacerbations, escalation to **ICS/LAMA/LABA** triple therapy is the preferred treatment option with a switch to an **ICS/LABA** as another second-line option. If exacerbations persist in patients taking triple therapy, consider withdrawing the **ICS**.
### SAMA – short-acting muscarinic antagonists

**Ipratropium**

Two puffs, as needed, up to four times daily.

Atrovent **MDI**

### SABA – short-acting beta$_2$ agonists

**Salbutamol**

One to two puffs, as needed, up to four times daily.

- **Respigen** MDI
- **Salair** MDI
- **Salamol** MDI
- **Ventolin** MDI

**Terbutaline**

One to two inhalations, as needed, up to four times daily.

- **Bricanyl Turbuhaler** DPI

### Device information

**MDI** – Spacers are recommended for all patients prescribed a MDI, especially for those unable to hold their breath after inhaling. Reasonable hand strength is required to dispense each dose.

**DPI** – Sufficient inspiratory flow is required to activate this device and deliver the medicine. Reasonable hand strength is required to twist the base of the device to load each dose.

- Fully subsidised without restriction
Combination SABA & SAMA

**Ipratropium + salbutamol**

Two puffs, as needed, four times daily.

**Duolin**

LAMA – long-acting muscarinic antagonists

<table>
<thead>
<tr>
<th>Lycopterynium</th>
<th>Umeclidinium</th>
<th>Tiotropium</th>
<th>Tiotropium</th>
</tr>
</thead>
<tbody>
<tr>
<td>One inhalation, once daily.</td>
<td>One inhalation, once daily.</td>
<td>Two puffs, once daily. MDI delivered as a mist (non-propellant).</td>
<td>One inhalation, once daily.</td>
</tr>
</tbody>
</table>

- **Breezhaler device with Seebri capsules**
- **Incruse Ellipta**
- **Spiriva Respimat**
- **Handihaler device with Spiriva capsules**

- Prescription endorsement required for full subsidy
- Special Authority approval required for full subsidy

**Reminder:** Stop SAMA treatment when prescribing a LAMA

**Device information**

**Accuhaler** – Requires sufficient inspiratory flow to activate device and deliver the medicine.

**Breezhaler** – Capsules must be loaded before each use, requiring good eyesight and dexterity. Sufficient inspiratory flow is required to achieve optimal delivery of the medicine.

**Foradil capsules via Aerolizer device** – Capsules must be loaded before each use, requiring good eyesight and dexterity. More than one inhalation is usually required to obtain a full dose from a capsule.

**Ellipta** – Breath activated device with medicine automatically loaded when device is opened. Sufficient inspiratory flow is required for optimal delivery of the medicine. Low dexterity is required to use this device.

**Handihaler device with Spiriva capsules** – Capsules must be loaded for each dose which requires good eyesight and hand coordination. More than one breath is usually required to obtain a full dose from a capsule.

**Respimat** – Medicine is delivered via a fine mist independent of inspiratory flow. This device requires insertion of a medicine cartridge at each prescription, which requires some strength and dexterity. The device must be twisted to load each dose, and a button depressed to release medicine.
## LABA – long-acting beta\(_2\) agonists

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<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>Salmeterol</strong></td>
<td><strong>Salmeterol</strong></td>
<td><strong>Salmeterol</strong></td>
<td><strong>Indacaterol</strong></td>
</tr>
<tr>
<td>Two puffs, twice daily.</td>
<td>Two puffs, twice daily.</td>
<td>One inhalation, twice daily.</td>
<td>One inhalation of 150 mg or 300 mg, once daily.</td>
</tr>
</tbody>
</table>

- **Meterol MDI**
- **Serevent MDI**
- **Serevent Accuhaler**
- **Breezhaler device with Onbrez capsules**

## Formoterol (eformoterol)

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<thead>
<tr>
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<tbody>
<tr>
<td><strong>One inhalation of 12 micrograms, once daily or twice daily.</strong></td>
<td><strong>Two inhalations of 6 micrograms, twice daily.</strong></td>
</tr>
</tbody>
</table>

- **Foradil capsules via Aerolizer device**
- **Oxis Turbuhaler DPI**

- Fully subsidised without restriction
- Partially subsidised without restriction

**Foradil and Oxis are NOT dose equivalent.** Oxis contains 6 micrograms per dose. Foradil contains 12 micrograms per capsule for inhalation.

## Combination LAMA/LABAs

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<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>Glycopyrronium + indacaterol</strong></td>
<td><strong>Olodaterol + tiotropium</strong></td>
<td><strong>Umeclidinium + vilanterol</strong></td>
</tr>
<tr>
<td>One inhalation, once daily.</td>
<td>Two puffs, once daily. MDI delivered as a mist (non-propellant).</td>
<td>One inhalation, once daily.</td>
</tr>
</tbody>
</table>

- **Breezhaler device with Ultibro capsules**
- **Spiolto Respimat**
- **Anoro Ellipta**

- Special Authority approval required for full subsidy
<table>
<thead>
<tr>
<th>Combination ICS &amp; LABA</th>
<th>Fluticasone (furoate) + vilanterol</th>
<th>Budesonide + formoterol</th>
<th>Budesonide + formoterol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluticasone furoate 100 micrograms + vilanterol 25 micrograms (for COPD and asthma).</td>
<td>Two inhalations of 200 + 6, twice daily, OR One inhalation of 400 + 12 micrograms, twice daily.</td>
<td>Two puffs of 200 + 6 micrograms, twice daily.</td>
<td></td>
</tr>
</tbody>
</table>

- **Breo Ellipta (100 + 25)**
- **Symbicort Turbuhaler DPI (200 + 6 or 400 + 12)**
- **Vannair (200 + 6) MDI**

- Fully subsidised without restriction

- Fluticasone furoate 200 micrograms + vilanterol 25 micrograms is for asthma only.
- Budesonide is half as potent as fluticasone therefore equivalence requires twice the strength per dose.
- Fluticasone furoate 100 micrograms inhaled ONCE daily is approximately equivalent to fluticasone propionate 250 micrograms TWICE daily.

<table>
<thead>
<tr>
<th>Fluticasone (propionate) + salmeterol</th>
<th>Fluticasone (propionate) + salmeterol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two puffs of 125 + 25 micrograms (or up to two puffs of 250 + 25 micrograms unsubsidised), twice daily.</td>
<td>One inhalation of 250 + 50 micrograms, twice daily</td>
</tr>
</tbody>
</table>

- **Rexair, Seretide 125 + 25 (or 250 + 25) MDI**
- **Seretide Accuhaler**

- Fully subsidised without restriction

- Rexair and Seretide MDI are not dose equivalent with Seretide DPI Accuhaler because MDIs contain salmeterol 25 micrograms compared with Accuhalers which contain salmeterol 50 micrograms
- MDI inhaler: TWO puffs, twice daily; or Accuhaler: ONE inhalation, twice daily
- If additional inhaled corticosteroids (ICS) are required, change to the higher strength formulation or add a separate ICS

For the online version of this tool see the bpac.nz website: [www.bpac.org.nz/copd](http://www.bpac.org.nz/copd)