

## NEL Primary and Secondary Care Chronic Obstructive Pulmonary Disease (COPD) Prescribing Guidelines 2022

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Abbreviations	
BD	Twice daily
COPD	Chronic Obstructive Pulmonary Disease
CAT	COPD Assessment Test
DPI	Dry Powder Inhaler
EBV	Endobronchial Valve
FEV1	Forced expiratory Volume in 1 second
FVC	Forced Vital Capacity
HOSAR	Home Oxygen Service Assessment and Review
ICS	Inhaled corticosteroid
LAMA	Long acting muscarinic antagonist
LABA	Long acting beta 2 agonist
LVRS	Lung Volume Reduction Surgery
mcg	micrograms
MDI	Metered Dose Inhaler
MRC	Medical Research Council
OCS	Oral Corticosteroids
OD	Once daily
SABA	Short acting beta2 agonist
SMI	Soft Mist inhaler
SE	Side effects

## NEL Primary and Secondary Care Chronic Obstructive Pulmonary Disease (COPD) Prescribing Guidelines 2022

### Introduction

This guideline aims to support best practice in respiratory prescribing for COPD patients in both primary and secondary care settings.

The aims of the treatment guidelines are to support prudent prescribing of COPD treatment to reduce risk and symptoms. The most cost effective and green inhalers are those that patients can and will use. Therefore, this guide is based on choosing the right device before the active drug molecule choice, considering any barriers to adherence and the need of available combination products and dosing options of once daily versus twice daily frequency. This guideline has considered GOLD 2022 and NICE 2019 guidelines.

### Management Overview

Referrals to secondary care should be made if patients continue to exacerbate and/or have symptoms despite optimising their care as laid out in this guideline. The essence and priority in ensuring best care in COPD patients is the optimisation of patient's inhaler technique (inspiratory effort and ability to use device) and adherence. These are therefore extremely important considerations to aid the appropriate selection of the inhaler device and drug. For all COPD patients, clinical management should involve ongoing review of symptoms (via MRC/ CAT scores) and exacerbation rates, assessing optimisation of current care before adjusting any treatments.

**Table 1. Details of patient assessment at all COPD reviews**

Diagnosis	Confirmation via spirometry with post bronchodilator results of FeV1/FVC <0.7 or lower limit of normal (LLN). Spirometry Values FEV1; FEV1 % predicted and FEV1/FVC ratio recorded accurately and reviewed annually.
Exacerbations (including hospitalisations)	Appropriate recording and review of courses of steroid/antibiotics in the last 12 months GP Review if having 2 courses of back to back rescue packs and/or >3 packs in last 12 months GP review within 4 weeks of notification of patient starting rescue pack at home or discharge from hospital due to COPD exacerbation. (See COPD self-management plan and issue to patient as part of review)
Oxygen Saturations	When clinically stable, saturations of $\leq 92\%$ over a 3- 6 month period may require referral to specialist care for LTOT assessment
CAT scores available online	At annual reviews and consider repeating for those at high risk of exacerbations and on change of therapy. GOLD recommends repeating 3 monthly to detect changes and trends. A change of 2 units suggesting a meaningful difference. CAT is preferable over MRC as COPD impacts patients beyond just dyspnoea. <a href="https://www.catestonline.org/patient-site-test-page-english.html">https://www.catestonline.org/patient-site-test-page-english.html</a>
MRC Dyspnoea Score	Can be used in conjunction with CAT to help frame consultations
Sputum	Issue sputum pots to patients at least at each annual review and encourage patients to send in samples when experiencing changes to baseline sputum production to aid exacerbation management.
Inhaler Technique	Essential to help the right device selection before drug selection Check both Inspiratory effort (e.g. Using an in check device) AND dexterity. See section on inhaler technique
Adherence	<b>Checking dose counters, electronic sensors if available and Medication Possession Ratio (MPR)- calculation via prescription refill data- see section on adherence</b>
When to refer to secondary care  (this includes Advice and Guidance in the first instance where appropriate)	Diagnostic doubt and/or age<35 Persistent Hypoxia over 3-6 months (O2 sats $\leq 92\%$ ) Consideration for surgical treatments for emphysema in symptomatic, maximally treated patients with FEV1<50% or significant bullous disease Rapid decline in FEV1 Frequent exacerbations ( $\geq 2$ ) despite optimising modifiable risk factors and inhaler therapies over at least 6 months Assessment for ventilator support

**For all patients, Assess Symptoms and Exacerbations and must be offered:**

**Treatment of Tobacco dependence**

Pneumococcal and annual influenza **vaccination**

**Pulmonary Rehabilitation (if MRC  $\geq 2$  and/or have had one hospital treated exacerbation or 2 exacerbations in the last 12 months)**

**Inhaler technique checks regularly, and adherence established before stepping up treatment**

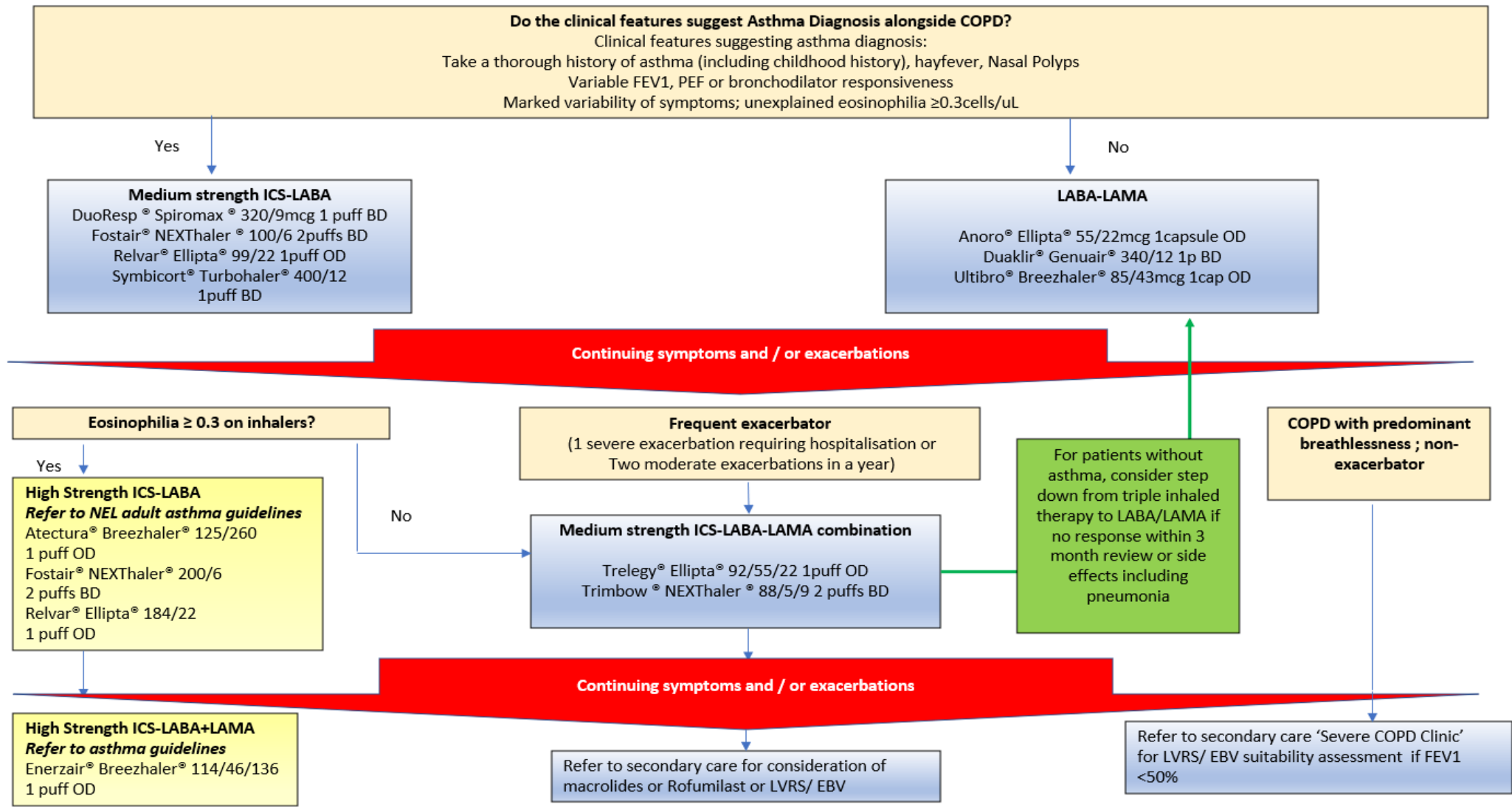
Written **self-management plan**, instructions for rescue pack and an inhaled corticosteroid card as appropriate

**Bone protection if more than 2 courses of steroids in the last year**

Always prescribe inhalers by **BRAND and DEVICE**

First assess Inspiratory effort and technique to decide if patients can use Dry Powder Inhaler (DPI) devices. See Table 2 for patients with ability and shared decision to use DPI devices as first line supporting the green agenda.

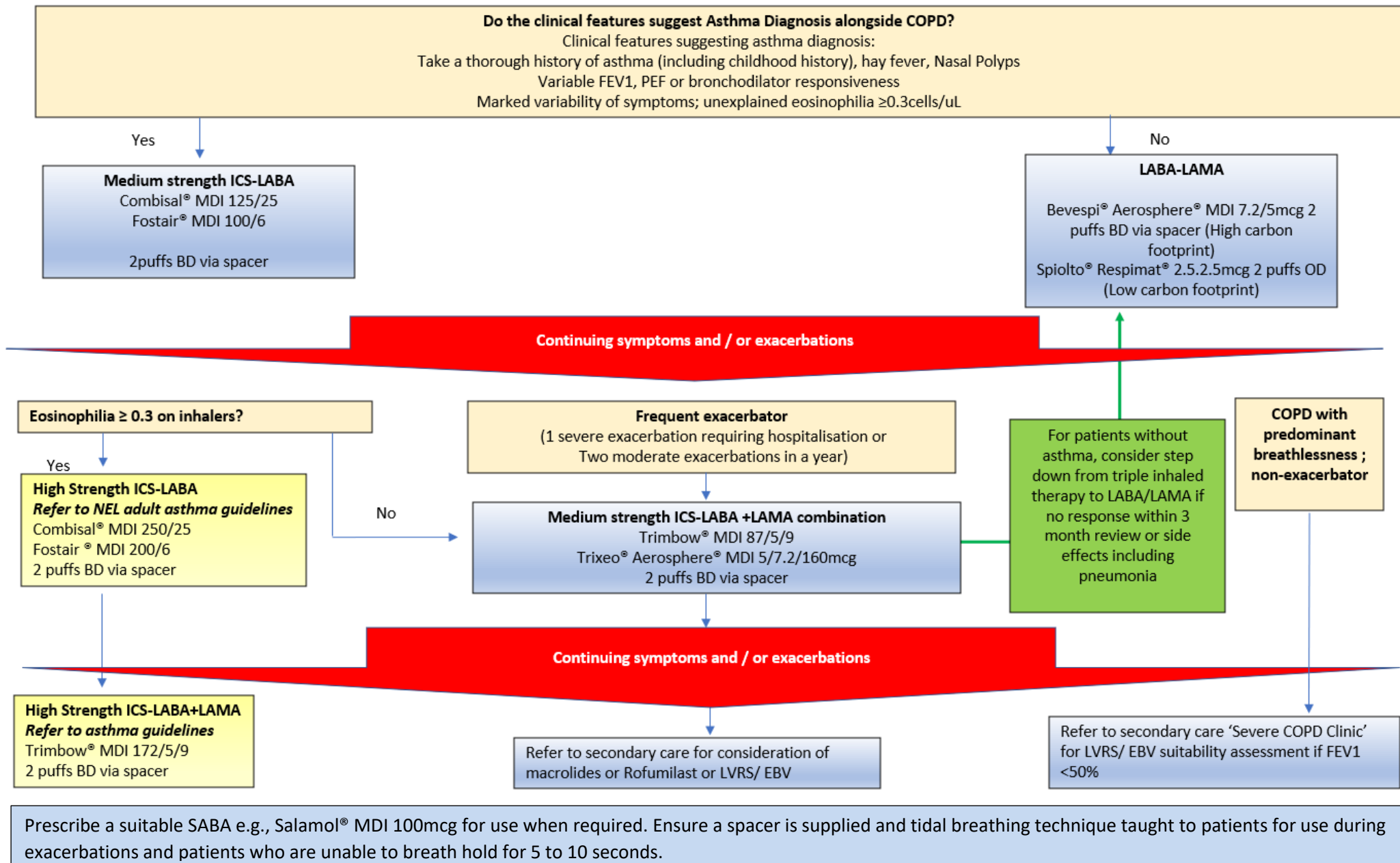
**Table 2. COPD Guidelines DPI options** (Inhalers are listed in alphabetical order and not in order of preferences)



Prescribe a suitable SABA e.g., Salbutamol Easyhaler<sup>®</sup> 100mcg for use when required. Note: SABA MDI can be issued as a one-off Rescue pack via spacer and patients taught tidal breathing technique for use during an exacerbation if inspiratory effort changes.

For patients unsuitable for DPI devices, See Table 3 for Metered Dose Inhaler (MDI) via spacers and Soft Mist Inhaler (SMI) options.

**Table 3 COPD Guidelines MDI and SMI options** (Inhalers are listed in alphabetical order and not in order of preferences)



**Renal Function:** Use with caution if benefit outweighs risk in:

eGFR: <50ml/min for Spiolto Respimat®

eGRF: <30ml/min for Ultibro Breezhaler®, Seebri Breezhaler® and Trimbow MDI®

**Carbocisteine**, a mucolytic should be considered for copious and vicious sputum that is difficult to clear. Discontinue if no reduction in frequency of cough or sputum reduction after a 1month trial. Starting dose of 750mg TDS and reduce to BD thereafter when there is a satisfactory response.

**The use of Azithromycin and Roflumilast should only be initiated in secondary care setting and continued until patients are stable before continuing in primary care.**

**Adherence to inhaled therapy and Support**

**FeNO suppression readings where available**

**Inhaler dose counter checks and electronic sensors data where available**

**Medication Possession Ratio (MPR)- calculation via prescription refill data**

$\frac{\text{No. of doses prescribed (in a fixed time frame)}}{\text{No. of doses expected (in the same fixed time frame)}} \times 100\%$

E.g. patient on Symbicort® 400/12 turbobaler at 2 puffs bd (60doses/inh) and collects 1 inhaler monthly over 12 month period on GP records

$\text{MPR \%} = \frac{60 \text{ doses} \times 12 \text{ months}}{4 \text{ doses} \times 30 \text{ days} \times 12 \text{ months}} \times 100\% = 50\%$

Good Adherence ≥75%	Suboptimal 50- 74%	Poor <50%
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3min Test of Adherence to Inhalers (TAI) self Questionnaire to help identify non-adherence

<https://taitest.com/>

[https://www.taitest.com/docs/Guia\\_Usuario\\_TAI\\_EN.pdf](https://www.taitest.com/docs/Guia_Usuario_TAI_EN.pdf)

Examples of unintentional non-adherence	Suggested Support
Critical errors with inhaler technique	Correction and optimising technique via a competent HCP
Financial barriers	Suggest pre-payment certificates; increasing quantities of inhalers per prescription
Forgets	Phone reminders, consider inhalers with OD dosing pending suitable inhaler technique
Poor understanding of disease and treatment	Education support

**Inhaler Technique Considerations on Initiation of Inhalers**

Does the patient have the right inspiratory effort to inhale the contents from a Dry Powder Inhaler Device?

**Ask patient to breathe out comfortably and lift chin up**

**Can patient take a QUICK DEEP breath in 2 to 3 seconds?**

**If unsure after observing patient, consider using training devices e.g. training whistles, in-check dial to assess**

YES	NO
Consider a DPI [Low carbon option]	Consider Metered Dose Inhalers (MDI) [High carbon option] via an aerochamber® plus vu and/or Soft Mist Inhalers (SMI) [Low carbon option]
Consider dexterity ability, adherence and patient preference, benefit of OD vs BD dosing for drug and device decisions.	

**TRAIN:**

If healthcare professional (HCP) is competent, show using placebos and provide links to videos. If HCP is not competent in inhaler technique checks, to provide links to videos and refer to a competent HCP

Prescribe a consistent device type for all inhalers

Prescribe combination inhalers where possible

Ongoing Inhaler Technique Reviews should be assessed and optimised with standardised seven step checks based on UK Inhaler Group Standards by a competent HCP. <https://www.ukinhalergroup.co.uk/>

Right Breathe- Inhaler prescribing information <https://www.rightbreathe.com/>

Asthma & Lung UK- How to use your inhaler <https://www.asthma.org.uk/advice/inhaler-videos/>

**Cardiovascular (CVD) Comorbidities.** The SUMMIT trial showed that CVD events occurred mostly during period of acute exacerbations (AECOPD) with the highest risk happening within the first 30 days after an AECOPD. Therefore. COPD patients should be assessed for CVD risk and optimised for Blood pressure, Cholesterol, Diabetes, and lifestyle as part of primary prevention.

**Self-management plans** to be used with patients can be accessed via current local GP systems or downloaded from British Lung Foundation.

[https://www.blf.org.uk/sites/default/files/COPD%20self%20management%20plan\\_May22\\_C%2BC\\_DIGITAL\\_LIVE.pdf](https://www.blf.org.uk/sites/default/files/COPD%20self%20management%20plan_May22_C%2BC_DIGITAL_LIVE.pdf)

## Exacerbation management: an exacerbation is defined as an acute worsening of respiratory symptoms that results in additional therapy

Summary exacerbation management	Treatment	Comments
Mild (more breathless, no fever, no change in sputum load or colour)	SABA	Consider a rescue pack MDI SABA for patients usually on DPI s and teach patients to use MDI SABA via spacer with tidal breath technique if inspiratory effort changes during exacerbations
Moderate (More breathless despite using SABA)	Oral Prednisolone 30mg OM for 5 days	Contact GP within 2 days of starting; If patient improves, review within 4 weeks and re-issue rescue pack. Contact patient earlier if no improvement within a week.
Moderate (more breathless despite using SABA with increased sputum load +/- colour change)	Oral Prednisolone +/- Oral Amoxicillin 500mg TDS for 5 days OR Oral Doxycycline 200mg on day 1, followed by 100mg OM for 5 more days. <b>Check allergies before prescribing</b>	Contact GP within 2 days of starting; If patient improves, review within 4 weeks and re-issue rescue pack. Contact patient earlier if no improvement within a week.
Severe (breathing is worse despite rescue treatments/ Chest pain/ high temperatures)	Will require a medical review +/- hospitalisation	

## Steroids

Gradual withdrawal of oral steroids should be considered in the following patients:

- Received more than 40mg prednisolone (or equivalent) daily for more than 1 week.
- Been given repeated doses in the evening
- Received more than 3 weeks' treatment
- Recently received repeated courses
- Taken a short course within 1 year of stopping long term therapy

A Blue steroid treatment card and a Red Steroid Emergency Card with Sick day rule counselling should be issued to the following patients

- Receiving high dose ICS (>1000BDP or equivalent)
- On long term oral steroids e. prednisolone 5mg daily or equivalent for 4 weeks or longer and for 12 months after stopping oral steroids
- Taking 40mg prednisolone daily or equivalent for longer than 1 week or repeated short courses of oral corticosteroids.
- Patients taking concurrent steroids via multiple routes (e.g. inhaled and/ or oral steroids with intramuscular or intra-articular glucocorticoid injections)

<https://www.england.nhs.uk/2020/08/steroid-emergency-card-to-support-early-recognition-and-treatment-of-adrenal-crisis-in-adults/>

<https://www.endocrinology.org/adrenal-crisis>


















Consider step down of patients established on ICS and not clinically indicated as per CEG Guide. For guidance to consider step down of ICS use in appropriate mild to moderate COPD patients on review, please refer to

[https://www.pcrs-uk.org/sites/default/files/SteppingDownICS\\_FINAL5.pdf](https://www.pcrs-uk.org/sites/default/files/SteppingDownICS_FINAL5.pdf)





## References

- NICE COPD Guideline 2019
- GOLD COPD guidelines 2023
- UK Inhaler group. Inhaler standards and competency document. Scullion J, Respiratory Nurse Consultant, University hospital of Leicester NHS Trust. Contributors Murphy, Anna. Consultant Pharmacist, University Hospitals of Leicester. Published December 2019.
- Electronic British National Formulary. BMJ Group and Pharmaceutical Press. Accessed Aug 2022
- Electronic Medicines Compendium. Medicines.org.uk/emc/ Accessed September 2022

Appendix 1 Example Inhalers for COPD management with images See NEL formulary for full list.


LABA/LAMA		ICS/LABA		ICS/LABA/LAMA	
DPI 	MDI/SMI	DPI 	MDI	DPI 	MDI
<p>Anoro Ellipta<sup>®</sup> (Vilanterol/ Umeclidinium) 55/22mcg</p> 	<p>Bevespi Aerosphere<sup>®</sup> MDI (Glycopyrronium/ Formoterol) 7.2/5mcg</p> 	<p>Fostair NEXThaler<sup>®</sup> 100/6mcg (Beclometasone/ Formoterol)</p> 	<p>Fostair<sup>®</sup> MDI 100/6mcg (Beclometasone/ Formoterol)</p> 	<p>Trelegy Ellipta<sup>®</sup> 92/55/2mcg (Fluticasone furoate/ Umeclidinium/ Vilanterol)</p> 	<p>Trimbow<sup>®</sup> MDI 87/5/9mcg (Beclometasone/ Formoterol/ Glycopyrronium)</p> 
<p>Duaklir Genuair<sup>®</sup> (Aclidinium/ Formoterol) 340/12mcg</p> 	<p>Spiolto Respimat<sup>®</sup> 2.5/2.5mcg </p> 	<p>Relvar Ellipta<sup>®</sup> 99/22mcg (Fluticasone Furoate/ Vilanterol)</p> 		<p>Trimbow NEXThaler<sup>®</sup> 88/5/9mcg (Beclometasone/ Formoterol/ Glycopyrronium)</p> 	<p>Trixeo Aerosphere<sup>®</sup> MDI 5/7.2/160mcg (Formoterol/ Glycopyrronium/ Budesonide)</p> 
<p>Ultibro Breezhaler<sup>®</sup> (Glycopyrronium/ Indacaterol) 85/43mcg</p> 		<p>Symbicort Turbohaler<sup>®</sup> 400/12mcg (Budesonide/ Formoterol)</p> 			

SABA

DPI 	MDI
<p>Salbutamol Easyhaler<sup>®</sup> 100mcg</p> 	<p>Salamol<sup>®</sup> MDI 100mcg (Salbutamol)</p> 
<p>Bricanyl Turbohaler<sup>®</sup> 100mcg (Terbutaline)</p> 	

Spacer to prescribe with MDIs:  
Aerochamber Plus Flow-Vu Mouthpiece



 Low carbon footprint  
device choice