

Co. Durham & Tees Valley COPD Treatment Guide

County Durham & Tees Valley
Area Prescribing Committee

Age > 35, Productive cough, Breathless, Smoking Hx, Recurrent chest infection, risk factors*

Spirometry (post-bronchodilator) CXR, Fbc, Consider cardiac/other cause

FEV₁/FVC (or FEV₁/VC) < 0.70
(Consider asthma if childhood onset, diurnal variability, atopy, wheeze)

COPD

Patient information & education
BLF- I've just been diagnosed with COPD

GOLD Classification of Airflow Limitation in COPD

In patients with post bronchodilator FEV₁/FVC < 0.70

GOLD 1	Mild	FEV ₁ ≥ 80% predicted
GOLD 2	Moderate	50% ≤ FEV ₁ < 80% predicted
GOLD 3	Severe	30% ≤ FEV ₁ < 50% predicted
GOLD 4	Very Severe	FEV ₁ < 30% Predicted

Intensive smoking cessation support
Vaccination- Flu & Pneumococcal
Pulmonary Rehab/exercise
Dietary Advice

GOALS- Reduce Symptoms & Exacerbations
Manage Comorbidities
Self-Management /Education

At diagnosis prescribe a SABA, then use grid to determine INITIAL treatment

<p>Group C</p> <p>LAMA</p>	<p>Group D</p> <p>LAMA or LAMA/LABA (if CAT>20) ICS/LABA (if eosinophil >300)</p>
<p>Group A</p> <p>A bronchodilator</p>	<p>Group B</p> <p>LAMA or LABA</p>
CAT <10 or MRC <2	CAT ≥10 or MRC ≥3

≥2 exacerbn or
≥1 admission

0-1 exacerbn &
no admissions

At Follow Up/Annual review

- Review diagnosis
- Check Symptoms - breathlessness & exacerbations
- Repeat spirometry if CAT up 3 or 2+exacerbn
- Eosinophil count
- Inhaler technique
- Pulmonary Rehab advice
- Self-management Plan/Rescue Pack advice
- Review treatment- if stable continue, (consider step down) or step up using guide below if required.

Increasing Breathlessness

SABA

SABA + LAMA or LABA

SABA + LAMA/LABA

Exacerbations

SABA + LAMA or LABA

SABA + LAMA/LABA

LAMA/LABA/ICS more effective if eosin >300 (maybe some effect if >100)

Still poor control? Consider other cause or refer

How is your COPD? Take the COPD Assessment Test TM (CAT)

SCORE

I never cough	0 1 2 3 4 5	I cough all the time	
I have no phlegm (mucus) in my chest at all	0 1 2 3 4 5	My chest is completely full of phlegm (mucus)	
My chest does not feel tight at all	0 1 2 3 4 5	My chest feels very tight	
When I walk up a hill or one flight of stairs I am not breathless	0 1 2 3 4 5	When I walk up a hill or one flight of stairs I am very breathless	
I am not limited doing any activities at home	0 1 2 3 4 5	I am very limited doing activities at home	
I am confident leaving my home despite my lung condition	0 1 2 3 4 5	I am not at all confident leaving my home because of my lung condition	
I sleep soundly	0 1 2 3 4 5	I don't sleep soundly because of my lung condition	
I have lots of energy	0 1 2 3 4 5	I have no energy at all	
TOTAL SCORE			

COPD Assessment Test and CAT logo is a trademark of the GlaxoSmithKline group of companies.
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Grade	Degree of breathlessness related to activities - MRC
1	Not troubled by breathlessness except on strenuous exercise
2	Short of breath when hurrying on the level or walking up a slight hill
3	Walks slower than most people on the level, stops after a mile or so, or stops after 15 minutes walking at own pace.
4	Stops for breath after walking about 100yards or after a few minutes on level ground
5	Too breathless to leave the house, or breathless when undressing

Refer patients to British Lung Foundation for information and support
BLF Helpline 03000 030 555 www.blf.org.uk/COPD

- Smoking cessation support & vaccination are the most important interventions.
- Discuss inhaler type & check inhaler technique & compliance at each visit. Use video demonstration such as on MyCOPD App.
- Animated demonstrations for most inhaler devices can be viewed on the [RightBreathe website](http://RightBreathe.com)
- The best inhaler is the one the patient can/will use. Inhaler Technique Assessment Tools, e.g. *In-Check*® device could be used.
- Pulmonary rehab improves symptoms, quality of life & reduces admissions. Offer to all patients with MRC >3 or patients with MRC of 2 and CAT score of >10.
- Monitor oxygen saturation: refer if SaO₂ <92% on one or more occasion when well or if de-saturation occurs on exercise.
- Screen for co-morbidities – lung cancer, CVD, Heart failure, weight, skeletal muscle dysfunction, osteoporosis, OSA, Depression/anxiety (example- FEV₁ ok but v symptomatic, admission <24h)
- Repeat post bronchodilator spirometry- if diagnosis in doubt; CAT score up by > 3; two or more exacerbations; or 1 admission.
- Review inhaler treatment, technique & compliance.
- Discuss self-management plans (BLF Just diagnosed with COPD or Living with COPD)
- Consider rescue packs and educate when to initiate for those who exacerbate. Code when rescue pack issued. Prescribe prednisolone 40mg daily for 5 days, amoxicillin or doxycycline for 5-7 days.
- Escalate medication up & down as required. Consider ICS stepdown if no PH asthma, no exacerbation in last year, eosinophil count <100. Review after 1 month. Do not stop ICS if patient has asthma, although ICS dose reduction can be trialed. If exacerbations and eosinophil count >300, add ICS to inhaler combination.
- Refer for chest x-ray where clinically appropriate e.g. if patient not improving, frequent exacerbations, red flags.
- Carbocisteine - may improve cough & difficulty with expectoration. Review and stop after 3 months if no benefit.
- Weight - Support patient to maintain BMI 20-25 range. If BMI < 20 may need dietary support.

BNF 3.1.1 - Adrenoreceptor Agonist Bronchodilators

Short-acting:

1st Choice = salbutamol (Salamol Easi-breathe or Ventolin Accuhaler)

Alternative = terbutaline

Ipratropium is no longer recommended - replaced by LAMA. Nebulisers do not offer convincing advantages over metered dose inhalers given via a spacer device and are not routinely recommended.

Long-acting:

1st Choice = formoterol






Alternative = salmeterol





Formoterol acts most quickly, salmeterol is alternative




Formoterol is the most cost-effective LABA currently.

County Durham & Tees Valley COPD Formulary Inhaler Choice – June 2020

Carbon Footprint. Only low carbon inhalers are annotated. Further information on all inhalers and the importance of returning all inhalers to the pharmacy for disposal in an environmentally safe way is available on <https://greeninhaler.org/>


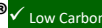
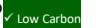
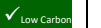





LAMA					
	Tiotropium	Glycopyrronium	Umeclidinium	Aclidinium	Tiotropium
Brand name	Braltus® ✓ Low Carbon	Seebri® Breezhaler® ✓ Low Carbon	Incruse Ellipta® ✓ Low Carbon	Eklira Genuair® ✓ Low Carbon	Spiriva Respimat ✓ Low Carbon
Device	Dry powder (capsule)	Dry powder (capsule)	Dry powder (multidose)	Dry powder (multi-dose)	Solution for inhalation cartridge
					
Strengths	13 microgram (equivalent delivered dose of 10microgram – the same as Spiriva)	50 microgram	55 microgram	322 microgram	2.5 micrograms
Adult COPD dose	Inhalation of the contents of one capsule once daily with the Zonda® inhaler device at the same time of day.	Inhalation of the contents of one capsule once daily with the Seebri® Breezhaler® device at the same time of day.	The recommended dose is one inhalation once daily , at the same time of day	The recommended dose is one inhalation twice daily	The recommended dose is two inhalations once daily at the same time of day.
Steps to use the inhaler – ease of use	7 step process <ul style="list-style-type: none"> Remove capsule from capsule pot Load capsule into inhaler Pierce capsule Inhale powder Hold breath for 10 seconds Repeat inhalation Dispose of capsule 	7 Step process <ul style="list-style-type: none"> Remove capsule from blister pack Load capsule into inhaler Pierce capsule Inhale powder Check capsule empty Repeat inhalation if necessary Dispose of capsule 	3 step process <ul style="list-style-type: none"> Slide down cover to load dose “Click” heard when dose loaded Inhale dose Replace cover <p>Indicator shows remaining inhalations</p>	4 step process <ul style="list-style-type: none"> Remove cap Press and release button to load dose Inhale dose Replace cap <p>Indicator shows successful inhalation –repeat if necessary</p>	4 step process then repeat <ul style="list-style-type: none"> Turn the clear base in the direction of the label until it clicks (half a turn) Open the cap until it snaps fully open Whilst inhaling press the dose-release button and continue to inhale. Hold breath for 10 seconds Repeat steps for second dose Close cap once finished
Miscellaneous information	New inhaler with each pack of capsules – no cleaning. Clear capsules – allows patient to see that dose has been taken.	Powder taste and inhaler sound show inhaler working New inhaler with each pack of capsules – no cleaning	Dose counter No need to wash In use shelf-life = 6 weeks	Dose counter Locks closed when empty No need to wash	Dose indicator – notifies when 7 days’ supply left Locks when empty Clean once a week In use shelf life = 3 months
Cost	££	££	££	££	£

LAMA/LABA				
	Acclidinium / Formoterol	Umeclidinium / Vilanterol	Glycopyrronium / Indacaterol	Tiotropium/Olodaterol
Brand name	Duaklir Genuair® ✓ Low Carbon	Anoro Ellipta® ✓ Low Carbon	Ultibro Breezhaler® ✓ Low Carbon	Spiolto Respimat® ✓ Low Carbon
Device	Dry powder inhaler	Dry powder inhaler	Dry powder (capsule)	Solution for inhalation cartridge
				
Strengths	340 / 12 microgram	55 / 22 microgram	85 / 43 microgram	2.5 / 2.5 microgram
Adult COPD dose	The recommended dose is one inhalation twice daily.	The recommended dose is one inhalation once daily.	Inhalation of the content of one capsule once daily using the Ultibro Breezhaler inhaler.	The recommended dose is two inhalations once daily.
Steps to use the inhaler – ease of use	4 step process <ul style="list-style-type: none"> Remove cap Press and release button to load dose Inhale dose Replace cap <p>Indicator shows successful inhalation –repeat if necessary</p>	3 step process <ul style="list-style-type: none"> Slide down cover to load dose, “Click” heard when dose loaded Inhale dose Replace cover <p>Indicator shows remaining inhalations</p>	7 Step process <ul style="list-style-type: none"> Remove capsule from blister pack Load capsule into inhaler Pierce capsule Inhale powder Check capsule empty Repeat inhalation if necessary Dispose of capsule 	4 step process then repeat <ul style="list-style-type: none"> Turn the clear base in the direction of the label until it clicks (half a turn) Open the cap until it snaps fully open Whilst inhaling press the dose-release button and continue to inhale. Hold breath for 10 seconds Repeat steps for second dose Close cap once finished
Miscellaneous information	Dose counter Locks closed when empty No need to wash	Dose counter No need to wash In use shelf-life = 6 weeks If the inhaler cover is opened and closed without inhaling the dose, the dose will then be lost but securely held inside the inhaler	Powder taste and inhaler sound show inhaler working New inhaler with each pack of capsules – no cleaning	Dose indicator – notifies when 7 days’ supply left Locks when empty Clean once a week In use shelf life = 3 months
Cost		£££	£££	£££

	Corticosteroid/LAMA/LABA –“Triple Therapy”	
	Beclometasone /Formoterol/Glycopyrronium	Fluticasone Furoate/Umeclidinium/Vilanterol
Brand name	Trimbow	Trelegy Ellipta 
Device	pMDI	Dry powder
		
Strengths	87/5/9 microgram	92/55/22 microgram
Adult COPD dose	The recommended (and maximum) dose is two inhalations of 87/5/9 micrograms twice daily	The recommended (and maximum) dose is one inhalations of 92/55/22 micrograms once daily at the same time each day.
Steps to use the inhaler – ease of use	5 step process <ul style="list-style-type: none"> Remove cap Begin to inhale, press down on the canister to release a dose Hold breath for as long as comfortably possible Repeat after 30 seconds for second dose Replace cap <p>Indicator shows remaining inhalations</p>	3 step process <ul style="list-style-type: none"> Slide down cover to load dose. “Click” heard when dose loaded Inhale dose Replace cover <p>Indicator shows remaining inhalations</p>
Miscellaneous information	<ul style="list-style-type: none"> Stored in the fridge (before dispensing only) shelf life of 4 months after dispensing (out of fridge) suitable for use with the AeroChamber Plus spacer device. Single dose counter. Small particle size – therefore is not bioequivalent to same dose of BDP in other inhalers. 	<ul style="list-style-type: none"> Inhaler is in 'closed' position when first removed from sealed tray Has a "discard by" date 6 weeks from the date of opening the tray. If the inhaler cover is opened and closed without inhaling the dose, the dose will then be lost. The lost dose will be securely held inside the inhaler, but it will no longer be available to be inhaled.
Cost	£££	£££

Costing scale: £ = <£25.00, ££ = £25.00 to £30.00, £££ = >£30.0

‘CONSIDER SEPARATE ICS/LABA AND LAMA ONLY IF PATIENT IS UNABLE TO TOLERATE TRIPLE THERAPY’

	Corticosteroid/LABA				
	Fluticasone furoate / Vilanterol	Beclometasone / Formoterol	Beclometasone / Formoterol	Budesonide / Formoterol	
Brand name	Relvar Ellipta® 	Fostair®	Fostair NEXThaler® 	DuoResp Spiromax® 	Symbicort Turbohaler® 
Device	Dry powder	MDI	Dry powder	Dry powder	Dry Powder
					
Strengths	92/22 microgram	100/6 microgram	100/6 microgram	160/4.5 microgram 320/9 microgram	200/6 micrograms 400/12 microgram
Adult COPD dose	The recommended dose is one inhalation of 92/22 mcg once daily at the same time each day. Relvar Ellipta® 184/22 mcg is not indicated for patients with COPD.	The recommended dose is two inhalations twice a day – recommended to use via AeroChamber Plus spacer device	The recommended dose is two inhalations of 100/6 mcg twice daily. Fostair NEXThaler® 200/6 mcg is not indicated for patients with COPD	The recommended dose is two inhalations twice daily of 160/4.5 mcg or One inhalation twice daily of 320/9mcg	The recommended dose is two inhalations twice daily of 200/6 mcg or One inhalation twice daily of 400/12mcg
Steps to use the inhaler – ease of use	3 step process <ul style="list-style-type: none"> Slide down cover to load dose. “Click” heard when dose loaded Inhale dose Replace cover <p>Indicator shows remaining inhalation</p>	5 step process <ul style="list-style-type: none"> Remove cap Begin to inhale, press down on the canister to release a dose Hold breath for as long as comfortably possible Repeat for second dose Replace cap 	5 step process <ul style="list-style-type: none"> Open the cover fully to prepare the dose Inhale dose Hold breath for 5-10 seconds Repeat for second dose Replace cover fully once finished <p>Indicator shows successful inhalation</p>	5 step process <ul style="list-style-type: none"> Open the mouthpiece until a click is heard Breath in forcefully and deep through the mouthpiece to inhale dose Hold breath for 10 seconds or as long as comfortably possible Repeat if necessary Close mouthpiece 	5-step process <ul style="list-style-type: none"> Remove cover and turn red grip as far as it will go in both directions Breath in forcefully and deep through the mouthpiece to inhale dose Hold breath for 10 seconds or as long as comfortably possible and Breathe out gently Repeat if necessary Replace cover
Miscellaneous information	Inhaler is in 'closed' position when first removed from sealed tray Has a "discard by" date 6 weeks from the date of opening the tray. If the inhaler cover is opened and closed without inhaling the dose, the dose will then be lost. The lost dose will be securely held inside the inhaler, but it will no longer be available to be inhaled.	Stored in the fridge (before dispensing only) shelf life of 5 months after dispensing (out of fridge). New single dose counter. Suitable for use with the AeroChamber Plus spacer device. Small particle size – 100mcg dose is not bioequivalent to 100mcg BDP in other inhalers.	Shelf life of 6 months once opening the pouch. The dose will only be available for inhalation if the cover is fully opened. The patient should be advised to close the cover fully when not in use.	160/4.5 mcg is equivalent to a metered dose of 200 mcg budesonide /6 mcg of formoterol fumarate dihydrate. 320/9 mcg is equivalent to a metered dose of 400 mcg budesonide/12 mcg of formoterol fumarate dihydrate • Doesn't require priming.	

Cost	£	££	£££	££££	
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ICS Step down/withdrawal

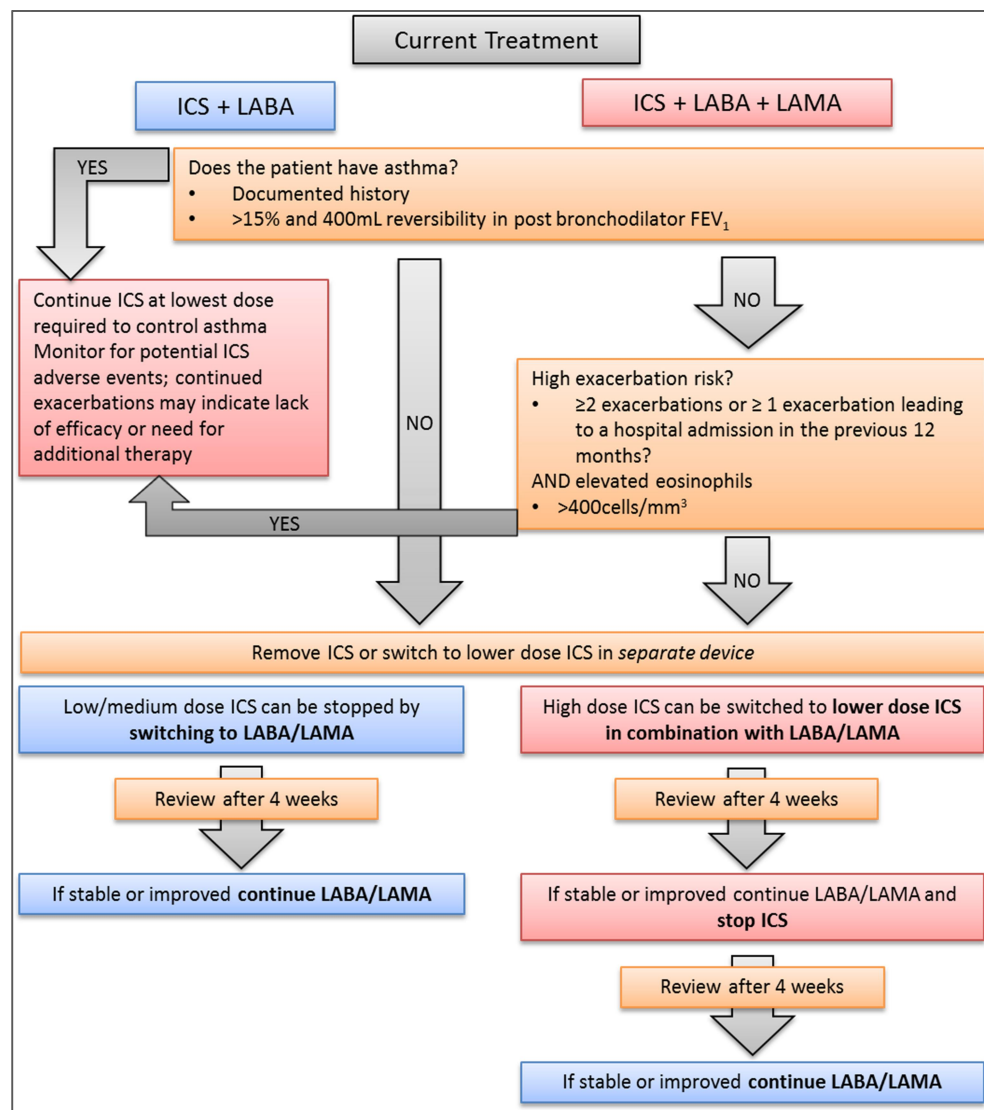


Figure 1: Adapted from IPCRG Desktop Helper March 2017

The ICS step down algorithm is designed to help clinicians step down and stop ICS treatment for patients in whom it may not be appropriate.

- Long-term ICS use is associated with a significant risk of pneumonia [Yawn 2013; Suissa 2013; Kew & Seniukovich 2014], and systemic effects [Price 2012]; therefore ICS containing regimens are not recommended in low-risk patients, and should only be considered for high-risk patients with features of asthma, or as triple therapy if exacerbations persist despite treatment with a LABA+LAMA [GOLD 2017].
- Steroid cards - Steroid cards are recommended for patients taking doses of inhaled corticosteroids ≥800 micrograms BDP equivalent per day.
- All patients taking oral steroids AND inhaled corticosteroids should be provided with a steroid card
- Discontinuing ICS rapidly decreases the risk of serious pneumonia [Suissa 2015].
- Despite years of guidance on the limited role of ICS in COPD [GOLD 2001], there is evidence of inappropriate use of ICS in COPD patients who are at low risk of exacerbation [Vestbo 2014; Price 2014].
- Recent studies have indicated that ICS can be withdrawn in both low and high-risk patients, provided adequate bronchodilator therapy is in place [Rossi 2014a; Rossi 2014b; Magnussen 2014]. Withdrawal of ICS only increased exacerbation rates in patients with both raised eosinophils and a history of frequent exacerbations [Calverley 2016].