

Ensure highest value non-pharmacological interventions are offered first:

- ✓ Smoking cessation - check smoking status, encourage & offer advice at each opportunity Refer to smoking cessation service.
- ✓ Encourage annual flu vaccination and one-off pneumococcal vaccination
- ✓ Pulmonary rehabilitation if symptomatic MRC 2 and above

Use the table to stratify patients based on symptoms and exacerbations to determine ABCD category and treatment.  
If results indicate more than one group choose the highest risk group.

Exacerbations per year	CAT score access <a href="#">here</a>	MRC scale access <a href="#">here</a>	COPD GOLD category
0-1 with no hospitalisation	<10	0-1	A
	≥10	≥2	B
≥2 or ≥1 with hospitalisation	<10	0-1	C
	≥10	≥2	D

- ALL inhalers **TLS GREEN**: recommended for primary care or secondary care initiation and primary care continuation.
- Prescribe inhalers by brand name to ensure continuity of inhaler device.
- Due to the environmental impact of different devices, due to their lower carbon footprint, DPIs and SMI/MDI should be used if patients are able to use them correctly (including inspiratory flow).

Offer PRN SABA for all patients:  
DPI - **EASYHALER SALBUTAMOL** 100mcg/dose 1-2 puffs PRN up to QDS  
MDI - **SALAMOL MDI** 100 mcg/dose 1-2 puffs PRN up to QDS

**Are there clinical features suggestive of asthma?** - a higher blood eosinophil count (>0.3 x 10<sup>9</sup>/L), spirometry with bronchodilator reversibility testing, substantial diurnal variation in PEF (at least 20%), positive fractional exhaled nitric oxide (FeNO) test (level of 40ppb or more)

NO

YES

Determine ABCD category

**"A" patients**  
Remain on SABA as above

**"B, C or D" patients – LAMA + LABA**

**DPI**  
**ANORO Ellipta 55/22 mcg**  
(umeclidinium/ vilanterol) 1 inhalation OD

**DUAKLIR GENUAIR 340/12 mcg**  
(aclidinium/ formoterol) 1 dose OD

**SMI/MDI**  
**SPIOLTO Respimat SMI 2.5/2.5mcg**  
(tiotropium/ olodaterol) 2 puffs OD

**BEVESPI AEROSPHERE MDI 7.2/5mcg**  
(glycopyrronium/ formoterol) 2 puffs BD  
\*Option where patients are unable to use the Respimat device (i.e. dexterity issues)

**Asthma COPD overlap – ICS + LABA**  
**Give ICS card**

**DPI**  
**RELVAR Ellipta 92/22 mcg**  
(fluticasone/ vilanterol) 1 inhalation OD

**FOSTAIR NEXTHALER 100/6 mcg**  
(beclometasone/ formoterol) 2 inhalations BD

**MDI**  
**FOSTAIR MDI 100/6 mcg**  
(beclometasone/ formoterol) 2 puffs BD

**SYMBICORT MDI 200/6 mcg**  
(budesonide/ formoterol) 2 puffs BD

INITIAL TREATMENT

**REVIEW:** If symptoms are stable – remain on same treatment. If patient is symptomatic, requiring SABA more than QDS every day – review ABCD, check inhaler technique. If further exacerbations and/or increase symptoms in C, D and asthma/COPD overlap liaise with respiratory/ COPD team and consider stepping up to triple therapy.

**Patients categorised as A or B should not be on ICS – refer to stepping down.**

Factors to consider when initiating ICS treatment, there is strong support where:

- ✓ History of hospitalisations with exacerbations ✓ ≥ 2 moderate exacerbations per year
- ✓ Blood eosinophils >0.3 x10<sup>9</sup>/L ✓ History of, or concomitant asthma

**"C or D" patients – switch to ICS + LABA + LABA triple combination inhaler. Give ICS card**

**DPI**  
**TRELEGY Ellipta 92/55/22mcg**  
(fluticasone/ umeclidinium/ vilanterol) 1 dose OD

**TRIMBOW NEXTHALER 88/5/9 mcg**  
(beclometasone / formoterol/ glycopyrronium) 2 inhalations BD

**MDI**  
**TRIMBOW 87/5/9 mcg**  
(beclometasone / formoterol/ glycopyrronium) 2 puffs BD

**TRIXEO AEROSPHERE MDI 5/7.2/160 mcg**  
(formoterol/ budesonide/ glycopyrronium) 2 puffs BD

**Asthma COPD overlap – Add on LABA only**  
Restricted for use in patients with asthma/COPD overlap in combination with LABA +ICS inhaler rather than triple combination inhaler, to allow flexibility of ICS/LABA dosing

**DPI**  
**INCRUSE Ellipta 55mcg**  
(umeclidinium) 1 dose OD

**EKLIRA GENUAIR 322cg**  
(aclidinium) 1 dose OD – capsules for inhalation

**SPIRIVA Respimat SMI 2.5mcg**  
(tiotropium) 2 puffs OD

STEPPING UP THERAPY

**REVIEW:** if well controlled consider stepping down ICS. If further exacerbations and/or increase symptoms despite optimised non-pharmacological interventions & inhaler technique review for other causes of symptoms (e.g. e.g. heart failure, bronchiectasis) and seek specialist advice

**Regular review and assessment**

- Review people with mild or moderate COPD at least once a year, those with very severe COPD at least twice a year.
- Ensure patients have a self-management plan detailing how to recognise and respond to the early signs of an exacerbation.
- Review the effectiveness of treatment by measuring symptom improvement, effect on activities of daily living, exercise capacity and speed of symptom relief
- Change or stop treatment that fails to achieve desired outcome at any stage despite appropriate inhaler technique. Consider rapid acceleration of treatment if frequent exacerbations.
- Ask patients to demonstrate inhaler technique at every opportunity. For training videos and inhaler information RightBreathe: [www.rightbreathe.com](http://www.rightbreathe.com). In check dial can be used to check and train patients on the inspiratory flow rate required for the inhaler device
- Due to their lower global warming potential, DPIs and SMIs should be used if patients are able to use them correctly. DPI - “Quick and deep” inspiration. SMI & MDI -“Slow and steady” inspiration.
- Maintain patients on same devices i.e. all DPI or all aerosol (MDI or SMI) to reduce confusion over inhaler technique and use of device.
- Maintain patients on fewer devices as possible, use combination inhalers. i.e. stepping up LABA+ LAMA, stop LABA+LAMA and change to LABA+LAMA+ICS combination inhaler. Take care not to duplicate LAMA and LABAs in combination inhalers
- When initiating any new inhalers refer patients to community pharmacist for “New medicines service” for support.
- Be aware of the potential risk of developing side effects (including non-fatal pneumonia) in people with COPD treated with ICS.
- Oral corticosteroid reversibility tests should not be used to identify patients who will benefit from inhaled corticosteroids.
- COPD patients should not be on monotherapy with ICS.

**ICS stepping down**

Advise patients of the risks of ICS including pneumonia, oral candidiasis, hoarse voice, bone density reduction. A trial withdrawal of ICS is recommended, in patients on ICS with the following:

- ✓ categorised as A or B
  - FEV1 >50%
  - Low exacerbation rate 0-1 with no hospitalisations
- ✓ Blood eosinophils < 0.3 10<sup>9</sup>/l

Review after 3 months. Refer to [PCRS stepping down ICS guidance](#)

**Mucolytics**

Carbocisteine is the only oral mucolytic licensed for long term use in COPD. Only prescribe for excessive, viscous mucus.

**There is no evidence it has an effect on improving exacerbation rate.**

- Prescribe carbocisteine (**TLS GREEN**) 750mg TDS trialled for 2-4 weeks. If effective reduce to 750mg BD maintenance dose.
- Discontinue if no benefit – anticipated benefits are decreased frequency of need for sputum clearance or decreased volume of sputum or ease of sputum clearance.

**Oral Treatment- Roflumilast (TLS RED)** - Recommended for restricted use in line with NICE TA461

**Managing exacerbations**

Patients at risk of having an exacerbation should be given a written self-management plan on how to respond quickly to symptoms of exacerbations, including:

- when to increase as required bronchodilators, when to start oral corticosteroids and/or antibiotics, actions/healthcare professional to contact if symptoms do not improve.
- Empirical treatment of exacerbation according to [primary care antimicrobial prescribing guidance](#) or guided by most recent sputum culture and susceptibilities:
  - Doxycycline 200mg first day then 100mg daily total 5 days course or
  - Amoxicillin 500mg three times daily for 5 days or
  - Clarithromycin 500mg twice daily for 5 days

Provide suitable patients at risk of exacerbations a home Rescue Pack:

- Antibiotics: as above.
- Prednisolone 30mg (plain tablets-not enteric coated) once daily in the morning for 5 days.
- Monitor the use of rescue packs and advise patients to contact a healthcare professional if they need to use them or if their symptoms do not improve.

**Spacer devices**

MDIs should be used with a spacer to improve lung deposition, aid co-ordination, and reduce oropharyngeal deposition and local side effects. Recommended spacer devices compatible with formulary MDIs:

Spacer	Advice	Compatible with
EasyChamber spacer	Anti-static spacer – no need for washing before first use	Salamol, Fostair
AeroChamber Plus	Wash before first use and allow to air dry to reduce static and prevent aerosol deposition to the inside of the spacer.	Trimbow, Symbicort
AeroChamber Plus Flow-Vu	Anti-static spacer – no need for washing before first use	Bevespi, Trixeo, Symbicort

Replace spacer devices at least every 12 months but some may need changing at 6 months. Clean spacer devices monthly in detergent and allow to air dry.

**Oxygen**

Oxygen should not be used as a treatment for chronic breathlessness. Oxygen can be used to correct hypoxia and patients with an SpO<sub>2</sub> reading of less than 92% at rest can be referred for assessment for long term oxygen therapy. See [HOOF guidelines](#)

**Referral:** For information for specialists in secondary care, community COPD clinics and smoking cessation services see next page

**Referral**

<p><b>Respiratory Specialists</b> NHS eReferral (<a href="https://nww.ebs.ncrs.nhs.uk">https://nww.ebs.ncrs.nhs.uk</a>)</p>	<p><b>Community COPD clinics</b></p> <p>Mid Essex <a href="https://www.provide.org.uk/service/respiratory/">https://www.provide.org.uk/service/respiratory/</a></p> <p>SW Essex <a href="https://www.nelft.nhs.uk/services-bsbwtk-integrated-respiratory-clinician">https://www.nelft.nhs.uk/services-bsbwtk-integrated-respiratory-clinician</a></p> <p>SE Essex <a href="https://eput.nhs.uk/our-services/essex/essex-mental-health-services/adults/clinical-health-psychology-services/southend-chronic-obstructive-pulmonary-disease-copd-psychology-service/">https://eput.nhs.uk/our-services/essex/essex-mental-health-services/adults/clinical-health-psychology-services/southend-chronic-obstructive-pulmonary-disease-copd-psychology-service/</a></p>	<p><b>Smoking Cessation</b></p> <p>Essex County Council <a href="https://www.essexwellbeingsservice.co.uk/lifestyle/stop-smoking">https://www.essexwellbeingsservice.co.uk/lifestyle/stop-smoking</a></p> <p>Southend Council <a href="https://www.southend.gov.uk/StopSmoking">https://www.southend.gov.uk/StopSmoking</a></p> <p>Thurrock Council <a href="https://www.thurrock.gov.uk/help-to-stop-smoking/stopping-smoking">https://www.thurrock.gov.uk/help-to-stop-smoking/stopping-smoking</a></p>
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<p><b>Key</b></p> <p>DPI - Dry powder inhaler MDI - Metered dose inhaler SMI – soft mist inhaler SABA - Short acting <math>\beta</math>2 agonist LABA - Long acting <math>\beta</math>2 agonist LAMA - Long acting muscarinic antagonist ICS - Inhaled corticosteroid OD - Once daily BD - Twice daily QDS – Four times a day PRN - When required</p>
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<p><b>References and useful links</b></p>	<ul style="list-style-type: none"> <li>- GOLD report 2021 <a href="https://goldcopd.org/2021-gold-reports/">https://goldcopd.org/2021-gold-reports/</a></li> <li>- NICE guidelines for COPD in over 16s: diagnosis and management <a href="https://www.nice.org.uk/guidance/ng115">https://www.nice.org.uk/guidance/ng115</a></li> <li>- British Thoracic Society, Position Statement – the Environment and Lung Health 2020 <a href="https://www.brit-thoracic.org.uk/document-library/governance-and-policy-documents/position-statements/environment-and-lung-health-position-statement-2020/">https://www.brit-thoracic.org.uk/document-library/governance-and-policy-documents/position-statements/environment-and-lung-health-position-statement-2020/</a></li> <li>- Right Breathe <a href="https://www.rightbreathe.com/">https://www.rightbreathe.com/</a></li> <li>- PrescQIPP Lowering the inhaler carbon footprint data tool: <a href="https://www.prescqipp.info/news/lowering-the-inhaler-carbon-footprint-data-tool/">https://www.prescqipp.info/news/lowering-the-inhaler-carbon-footprint-data-tool/</a></li> <li>- Drug Tariff online (Feb 2022): <a href="https://www.nhsbsa.nhs.uk/pharmacies-gp-practices-and-appliance-contractors/drug-tariff">https://www.nhsbsa.nhs.uk/pharmacies-gp-practices-and-appliance-contractors/drug-tariff</a></li> </ul>
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**Appendix 1: Inhalers with cost and associated carbon footprint. Preferred inhaler choices are shaded in blue**

Inhaler	Type	Dose	Cost/ year	equivalent miles in a car/year)§
<b>SABA</b>				
Salbutamol 100mcg (Easyhaler®)	DPI	Two puffs qds prn	£48	4
Terbutaline 500mcg (Turbohaler®)	DPI	One puff qds prn	£101	3
Salbutamol 100mcg (Salamol®)	MDI	Two puffs qds prn	£21	85
Salbutamol 100mcg (Ventolin® evohaler)	MDI	Two puffs qds prn	£22	199
<b>SAMA</b>				
Ipratropium 20micrograms	MDI	Two puffs qds prn	£81	289
<b>LAMA/LABA</b>				
Umeclidinium/vilanterol 55/22mcg (Anoro Ellipta®)	DPI	One puff daily	£395	32
Acidinium/formoterol 400/12mcg (Duaklir Genuair®)	DPI	One puff twice daily	£395	24
Glycopyrronium/indacaterol 85/43mcg (Ultibro® Breezhaler®)	DPI	One puff daily	£395	25
Tiotropium/olodaterol 2.5/2.5mcg (Spiolto® RespiMat®)	SMI	Two puffs daily	£395	0.03
Glycopyrronium/formoterol 7.2/5mcg (Bevespi® Aerosphere®)	MDI	Two puffs twice daily	£395	576
<b>LABA/ICS</b>				
Fluticasone furoate/vilanterol 92/22mcg (Relvar® Ellipta®)	DPI	One puff daily	£268	34
Budesonide/formoterol 320/9mcg (Fobumix®easyhaler)	DPI	One puff twice daily	£262	11
Budesonide/formoterol 320/9mcg (Duoresp® Spiromax®)	DPI	One puff twice daily	£340	18
Budesonide/formoterol 320/9mcg (WockAIR®)	DPI	One puff twice daily	£231	TBC
Budesonide/formoterol 400/12mcg (Symbicort Turbohaler®)	DPI	One puff twice daily	£341	35
Beclometasone/formoterol 100/6mcg (Fostair® NEXThaler)	DPI	Two puffs twice daily	£357	39
Fluticasone propionate/salmeterol 500/50mcg (StalpeX®) +	DPI	One puff twice daily	£199	49
Fluticasone propionate/salmeterol 500/50mcg (Fixkoh airmaster®) +	DPI	One puff twice daily	£293	49
Fluticasone propionate/salmeterol 500/50mcg (Fusacomb easyhaler®) +	DPI	One puff twice daily	£328	25
Fluticasone propionate/salmeterol 500/50mcg (AirFluSal Forspiro®) +	DPI	One puff twice daily	£365	26
Fluticasone propionate/salmeterol 500/50mcg (Seretide Accuhaler®) +	DPI	One puff twice daily	£398	40
Beclometasone/formoterol 100/6mcg (Luforbec®)#	MDI	Two puffs twice daily	£250	495
Beclometasone/formoterol 100/6mcg (Fostair®)#	MDI	Two puffs twice daily	£357	495
Budesonide/formoterol 200/6mcg (Symbicort® MDI)	MDI	Two puffs twice a day	£341	1,512
Fluticasone propionate/salmeterol 250/25mcg (Sereflo®) * +	MDI	Two puffs twice daily	£243	723
Fluticasone propionate/salmeterol 250/25mcg (AirFluSal®) * +	MDI	Two puffs twice daily	£250	848
Fluticasone propionate/salmeterol 250/25mcg (Combisal®) * +	MDI	Two puffs twice daily	£341	707
Fluticasone propionate/salmeterol 250/25mcg (Sirdupla®) * # +	MDI	Two puffs twice daily	£345	863
Fluticasone propionate/salmeterol 250/25mcg (Seretide Evohaler®) * +	MDI	Two puffs twice daily	£357	855
Fluticasone propionate/formoterol 250/10mcg MDI (Flutiform®)*#+	MDI	Two puffs twice daily	£554	1,556
<b>LABA/LAMA/ICS</b>				
Fluticasone/vilanterol/umeclidinium 92/22/55mcg (Trelegy Ellipta®)	DPI	One puff daily	£541	34

Beclometasone/formoterol/glycopyrronium 88/5/9mcg (Trimbow Nexthaler®)	DPI	Two puffs twice daily	£541	39
Budesonide/formoterol/glycopyrronium 160/5/7.2 (Trixeo Aerosphere®)	MDI	Two puffs twice daily	£541	593
Beclometasone/formoterol/glycopyrronium 87/5/9mcg (Trimbow MDI®) #	MDI	Two puffs twice daily	£541	624
<b>LABA</b>				
Formoterol 12mcg (Easyhaler®)	DPI	One puff twice daily	£144	12
Formoterol 12mcg (Oxis Turbohaler®)	DPI	One puff twice daily	£302	16
Formoterol 12mcg (Foradil®)	DPI	One puff twice daily	£341	49
Indacaterol 150mcg/300mcg (Onbrez Breezhaler®)	DPI	One puff daily	£392	25
Salmeterol 50mcg (Accuhaler®)	DPI	One puff twice daily	£427	32
Olodaterol 2.5mcg (Striverdi Respimat®)	SMI	Two puffs daily	£321	0.03
Formoterol 12mcg (Atimos Modulite®)#	MDI	One puff twice daily	£219	343
Salmeterol 25mcg (Soltel®)	MDI	Two puffs twice daily	£243	686
Salmeterol 25mcg (Evohaler®)	MDI	Two puffs twice daily	£356	834
<b>LAMA</b>				
Tiotropium 2.5mcg (Spiriva Respimat®)	SMI	Two puffs daily	£280	0.03
Tiotropium 10mcg (delivered dose 10mcg) (Braltus Zonda®)	DPI	One puff daily	£314	25
Tiotropium 18mcg (delivered dose 10mcg) (Tiogiva®)	DPI	One puff daily	£234	25
Tiotropium 18mcg (delivered dose 10mcg) (Acopair Neumohaler®)	DPI	One puff daily	£243	TBC
Glycopyrronium 44mcg (Seebri Breezhaler®)	DPI	One puff daily	£335	25
Umeclidinium 55mcg (Incruse Ellipta®)	DPI	One puff daily	£335	32
Acidinium 322mcg (Eklira Genuair®)	DPI	One puff twice daily	£395	23
Tiotropium 18mcg (delivered dose 10mcg) (Spiriva Handihaler®)	DPI	One puff daily	£408	12

mcg = micrograms; SABA = Short acting beta2 agonist; SAMA = Short acting muscarinic antagonist; LAMA/LABA = combined long acting muscarinic antagonist & long acting beta2 agonist inhaler; LABA/ICS = combined long acting beta2 agonist & inhaled corticosteroid inhaler; LABA/LAMA/ICS = combined long acting beta2 agonist inhaler, long acting muscarinic antagonist & inhaled corticosteroid inhaler MDI = pressurised Metered Dose Inhaler; DPI = Dry Powder Inhaler; SMI = Soft mist inhaler; qds = four times a day; prn = when required; \* = off label for COPD; # = contain small amount of alcohol per actuation; + = high strength ICS

#### Carbon footprint estimations

The calculations of annual carbon footprint were based on figures obtained from the gov.uk website and the PrescQIPP bulletin.

The Gov.uk website gives a figure of 0.2758kg CO<sub>2</sub>e/mile (or 276g CO<sub>2</sub>e/mile) for an average car of unknown fuel type ([link](#)) and the PrescQIPP bulletin provides a figure for indicative carbon footprint per annum for each inhaler (g/CO<sub>2</sub>e) ([link](#))

These figures were used to provide an estimate in miles/year for each of the inhalers listed. The inhalers in each class are colour coded with a traffic light designation to highlight choices with a lower carbon footprint.

Further Information on inhalers and carbon footprint can be found on the following link:

<https://www.prescqipp.info/our-resources/bulletins/bulletin-295-inhaler-carbon-footprint/>