

Fundamentals of COPD care

- Smoking cessation - offer treatment and support to stop smoking
- Offer pneumococcal and influenza vaccinations
- Offer exercise advice and pulmonary rehabilitation if indicated
- Develop a respiratory action plan with the patient
- Chronic cough and mucus production - consider trial of mucolytic and refer to physiotherapist where service is available
- Optimise treatment of co-morbidities
- Low BMI or obese – offer dietary advice (+/- calorie supplementation)

Abbreviations

- DPI: Dry Powder Inhaler
 ICS: Inhaled corticosteroid
 LABA: Long acting beta agonist
 LAMA: Long acting muscarinic antagonist
 MDI: Metered dose inhaler
 SABA: Short acting beta agonist
 SAMA: Short acting muscarinic antagonist
 SMI: Soft mist inhaler (i.e. Respimat device)

Inhaler Prescribing Principles

- Initiate therapy at level appropriate to patient's stage of disease.
- Match the device type to the patient's inspiratory flow rate.
- Use DPIs first line if suitable.
- Use MDIs with spacer in patients unsuitable for DPI.
- Check inhaler technique at every review and before treatment escalation.
- Use combination inhaler where appropriate.
- See information on **greener inhaler prescribing** on page 2.

Inhaler selection

Can the patient inhale quickly and deeply?
 (See <https://www.guidelines.co.uk/respiratory/inhaler-choice-guideline/455503.article> for further guidance)

Yes

Follow DPI pathway (preferred)

No

Can patient inhale slow and steady over four to five seconds?

Yes

Follow MDI/SMI pathway (provide and encourage spacer use with MDIs)

Offer SABA (or SAMA if SABA intolerant) to use as needed

DPI option:

 Easyhaler® salbutamol 200mcg - ONE dose when required

MDI options:

-  Salbutamol MDI 100mcg - TWO puffs when required (prescribe small volume inhaler e.g. Salamol® brand)
-  Ipratropium bromide 20mcg - TWO puffs when required up to four times daily (SAMA)

If patient symptomatic and needing SABA every day or has exacerbations. Assess inhaler technique.

Symptomatic, no exacerbations

OR

Exacerbations:

- One or less per year **and**
- No hospitalisations **and**
- Eosinophils <0.3

Exacerbations:

- Two or more per year **or**
- One hospitalisation **or**
- Eosinophils > 0.3

LABA+LAMA (combination inhaler)

DPI option:

 Anoro® Ellipta 55/22mcg - ONE dose ONCE daily

MDI/SMI option:

 Spiolto® Respimat 2.5/2.5mcg – TWO puffs ONCE daily

ICS+LABA (combination inhaler)

DPI option:

 Relvar® Ellipta 92/22mcg – ONE dose ONCE daily

MDI option:

 Fostair® 100/6mcg with spacer – TWO puffs TWICE daily

Patient limited by increasing symptoms or exacerbations. Assess inhaler technique and adherence.

No exacerbations **or** exacerbations **and** eosinophils <0.3

Exacerbations **and** eosinophils >0.3

Patient limited by increasing symptoms or exacerbations. Assess inhaler technique and adherence. Consider discussion at virtual MDT

Revisit fundamentals of COPD care (see above). Ensure all interventions considered/optimised. Consider discussion at virtual MDT.

- **Consider a trial of triple therapy.**
- Perform CAT test before initiation and after three months to evaluate. A reduction in CAT of two units or more is significant.
- Change back to LABA+LAMA if no benefit.

Triple therapy ICS+LABA+LAMA (combination inhaler)

DPI option:

 Trelegy® Ellipta 92/55/22mcg – ONE dose ONCE daily

MDI option:

 Trimbow® 87/5/9mcg with spacer – TWO puffs TWICE daily

COPD INHALER PRESCRIBING GUIDELINE

Greener Inhaler Prescribing

- The NHS long term plan has committed the NHS to reducing greenhouse gas emissions from inhalers, with a target to reduce the carbon impacts of inhalers by 50% by 2030, and a drive to reduce MDI prescribing.
- Metered dose inhalers (MDIs) contain hydrofluorocarbon propellants which are powerful greenhouse gases.
- As such MDIs have a carbon footprint many times greater than DPIs and make up the largest proportion of the NHS carbon footprint of any group of medicines.
- Therefore if a patient is able to use both MDI and DPI they should be given a DPI.
- Ventolin® Evohalers should **not** be prescribed as they have a carbon footprint more than double that of the smaller volume Salamol® MDI.
- SMIs (Respimat device) do not contain a propellant and are therefore a greener inhaler choice. The reusable inhaler device may be used with six refill cartridges before it needs to be discarded.
- All inhalers should be returned to a pharmacy to be disposed of in an environmentally safe manner.
- In this guideline each inhaler is allocated a footprint symbol:



indicates a 'greener' choice



indicates a 'less-green' choice

Additional Information

- This guideline is intended to support the choice of treatment for new patients, or current patients who may benefit from a change of inhaler. Patients on alternative inhalers or devices should not be routinely switched unless this is the outcome of a COPD review.
- The intention is that, for the majority of patients requiring a new or changed inhaler, one of the above inhaler choices will be prescribed, using the brand names stated to minimise the risk of dispensing errors.
- Consider stopping new treatment if patient feels no improvement. (Symptomatic benefit is expected within 4 weeks. A longer trial period is needed to assess reduction in exacerbations).

Why dual bronchodilators?

- Evidence suggests that LABA/LAMA combination inhalers are more effective than monotherapy LAMA or LABA treatment.
- LABA/LAMAs are more effective at reducing symptoms and exacerbations and this does not appear to be associated with an increase in adverse effects.
- A reduction in symptoms can enable patients to become more active - ensure you give advice about how to increase activity and refer to pulmonary rehabilitation if appropriate.

Mucolytics

- Only prescribe a mucolytic to treat troublesome phlegm.
- Carbocisteine 750mg tds (£13.10) can be trialled for 4 weeks.
- If no effect - stop.
- If effective - reduce to maintenance dose (750mg bd).
- Consider using in winter months only.
- Mucolytics do not prevent exacerbations.

Inhaler Technique

- For **MDI** and **SMI** devices (with or without spacers) patients should be educated to inhale gently.
- For **DPI** devices patients should inhale forcefully (requiring a higher inspiratory flow rate than MDIs).
- Further information: <https://www.rightbreathe.com>

Inhaled corticosteroids (ICS)

- Patients who will derive greatest benefit are those have an eosinophil count of $>0.3 \times 10^9/L$ and a history of frequent exacerbations or hospitalisations.
- Use ICS at licensed dose for COPD in an ICS/LABA or triple combination inhaler licensed for COPD. There's no evidence that increasing the dose gives greater benefit but it will increase side effects.
- Inhaled steroids increase the risk of pneumonia. Ensure they are only used in patients where benefit outweighs risk. **If a patient has two or more pneumonia episodes re-evaluate benefit/risk and consider stopping ICS.**

Eosinophils

- Measure baseline eosinophils when patient is well (a result from within past 6 months is acceptable).
- Eosinophil levels don't tend to vary significantly unless the patient is ill or being treated with oral corticosteroids or methotrexate.
- Inhaled steroids at doses licensed for COPD don't impact eosinophil counts significantly. Oral corticosteroids do.
- This guideline gives some suggested cut points but bear in mind the measure is a continuous variable:
 - Over $0.3 \times 10^9/L$ indicates likely benefit from ICS but the higher the eosinophil count, the greater the likely benefit.
 - Under $0.3 \times 10^9/L$ patients are unlikely to benefit from ICS.

Asthma/COPD Overlap

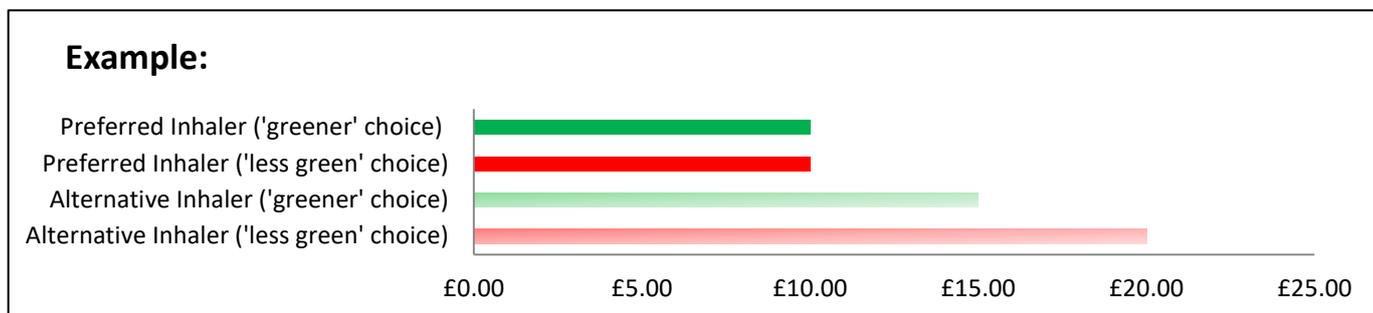
- If asthma/COPD overlap is suspected (e.g. childhood symptoms, diurnal variability, nocturnal symptoms, atopy/allergies, previous blood eosinophilia), then a trial of ICS+LABA first-line should be considered.

Spacer Devices

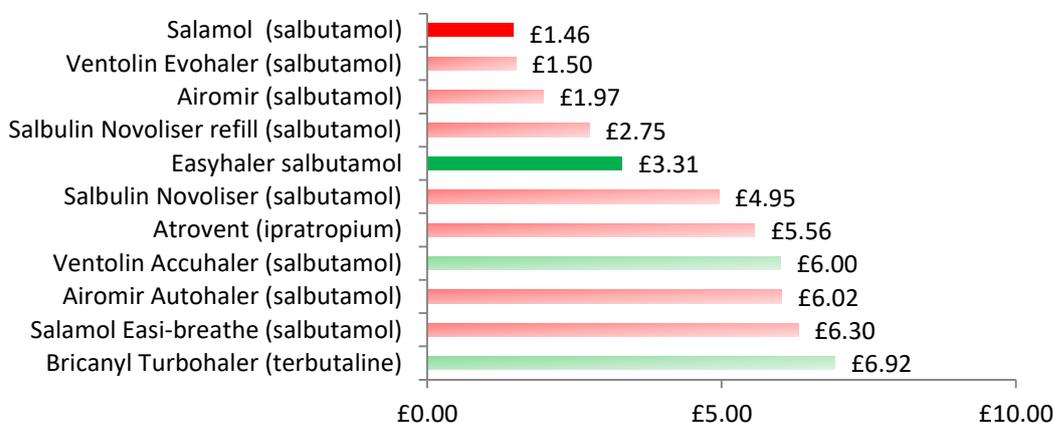
- Consider prescribing a compatible spacer for use with MDI devices in ALL patients, but especially those with sub-optimal inhaler technique.
- Spacers should be replaced at least annually.

Appendix:

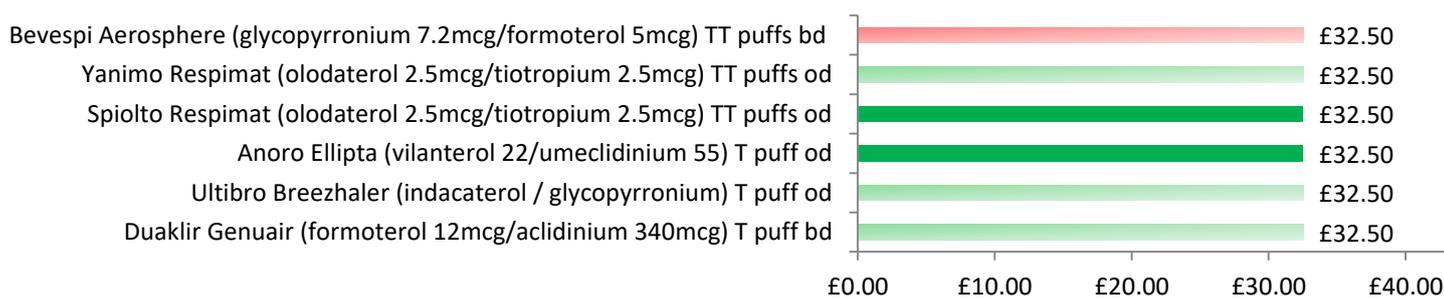
- The following charts provide a cost comparison to aid decision making when the formulary recommended first-choice inhalers (page 1) are not suitable
- Prices correspond to 30 days' treatment (SABA prices correspond to 200 doses of salbutamol 100mcg or 100 doses of terbutaline 500mcg, SAMA price corresponds to 200 doses of ipratropium)



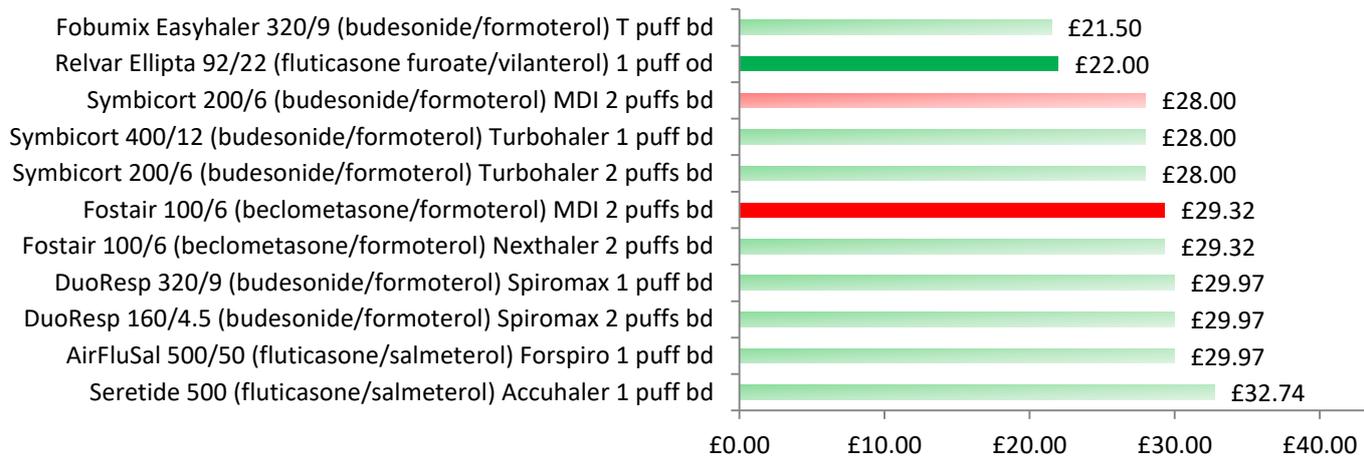
SABA or SAMA



LABA + LAMA



ICS + LABA



ICS + LABA + LAMA

