

- This guideline states the Gloucestershire Joint Formulary recommended, first choice inhalers.
- The intention is to support the choice of treatment for new patients, or patients needing stepping up or down.
- Patients stabilised on alternative inhalers should not be switched unless this is deemed to be clinically appropriate and the patient has an asthma review.
- The intention is that, for the majority of patients requiring a new or changed inhaler, one of the below inhaler choices will be prescribed, using the brand names stated below to minimise the risk of dispensing errors.

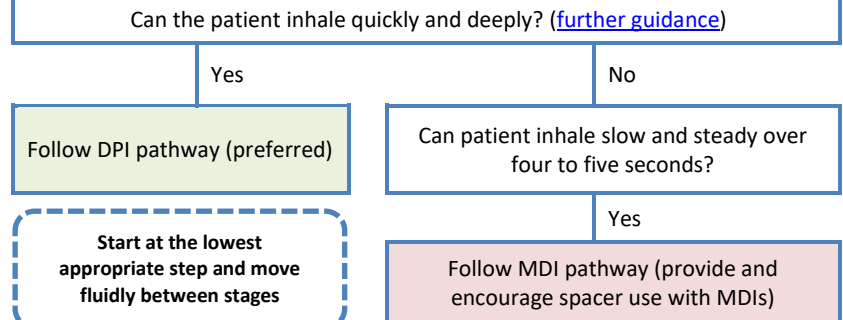
Abbreviations

- 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

Inhaler Prescribing Principles

- 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




Asthma is caused by inflammation of the airways so initial treatment = low-dose ICS to treat the underlying inflammation.¹⁻³ SABA can be used to treat occasional breakthrough symptoms. The use of bronchodilators without ICS has been associated with increased mortality regardless of asthma severity.⁴ Most ICS/LABA combinations containing formoterol (a fast acting LABA) can be used as both maintenance and reliever therapy (MART) – see page 2. When patients are exacerbating they will use more bronchodilator therapy and, with delivery of more ICS (anti-inflammatory medication), this will reduce active inflammation and reduce severity/longevity of an exacerbation.^{1, 2, 4}

Initial Therapy: Regular low-dose ICS (plus SABA as required - continue SABA throughout treatment stages)


DPI option:

 ICS: Easyhaler® beclometasone 200mcg – ONE dose TWICE daily


+

 SABA: Easyhaler® salbutamol 200mcg – ONE dose when required

MDI option:

 ICS: Kelhale® (beclometasone) 50mcg – TWO puffs TWICE daily
(note: Kelhale® contains ultrafine particles so is 2-2.5 times more potent than standard beclometasone containing inhalers at the same dose)

+


 SABA: Salbutamol MDI 100mcg – TWO puffs when required
(prescribe a lower carbon footprint brand e.g. Salamol®)

Initial Add-on / Alternative Therapy


Either: Switch ICS to ICS+LABA (combination inhaler)

Or: ADD Leukotriene receptor antagonist (LTRA)

DPI option:

 Fobumix Easyhaler® 160/4.5 - ONE dose TWICE daily

MDI option:



 Combisal® 50/25 – TWO puffs TWICE daily
(or lower-cost alternative) See page 2 for MART regimen

If no benefit from LABA, switch back to ICS and titrate


Montelukast 10mg ONCE daily (at night)
If no benefit from LTRA after 6 weeks – stop

Benefit from LABA but inadequate response, increase ICS dose in combination inhaler

DPI options:



-  Fobumix Easyhaler® 320/9 – ONE dose TWICE daily
-  Relvar Ellipta® 92/22 – ONE dose ONCE daily

MDI option:


 Combisal® 125/25 – TWO puffs TWICE daily
(or lower-cost alternative)

Continued poor asthma control despite good compliance and inhaler technique: Refer to Specialist, as per Respiratory Pathway

DPI options:



-  Fobumix Easyhaler® 320/9 – TWO doses TWICE daily
-  Relvar Ellipta® 184/22 – ONE dose ONCE daily

MDI option:

 Combisal® 250/25 – TWO puffs TWICE daily
(or lower-cost alternative)

ASTHMA INHALER PRESCRIBING GUIDELINE (adult)

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®.
- All inhalers should be returned to a pharmacy to be disposed of in an environmentally safe way.
- In this guideline each inhaler is allocated a footprint symbol:
 -  indicates a 'greener' choice
 -  indicates a 'less-green' choice

Inhaler Technique



- For **MDI** 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 can be found via <https://www.rightbreathe.com>

If adding LABA to ICS is ineffective:

ICS+LABA combination inhalers are expensive. If the addition of a LABA to regular ICS does not result in a significant additional benefit - consider switching back to regular ICS and titrating accordingly:

BDP 400mcg/day:	 Easyhaler® beclometasone 200mcg (DPI) – ONE dose TWICE daily  Kelhale® 50mcg beclometasone (MDI) – TWO puffs TWICE daily
BDP 800mcg/day:	 Easyhaler® beclometasone 200mcg (DPI) – TWO doses TWICE daily  Kelhale® 100mcg beclometasone (MDI) – TWO puffs TWICE daily
BDP 1,600mcg/day:	 Easyhaler® beclometasone 200mcg (DPI) – FOUR doses TWICE daily  Kelhale® 100mcg beclometasone (MDI) – FOUR puffs TWICE daily

Maintenance and Reliever Therapy (MART) Options:

-  DPI: Fobumix Easyhaler® 160/4.5 ONE to TWO doses TWICE daily & PRN (max. 12 doses/day)
-  MDI: Fostair® 100/6 ONE puff TWICE daily & PRN (max. 8 puffs/day)

Beclometasone Potency

- Fostair®, Kelhale® and Qvar® inhalers contain ultrafine particles and are therefore 2 - 2.5 times more potent than alternative beclometasone containing MDIs (e.g. Clenil®) and DPI inhalers per inhaled dose.
- Corticosteroid safety cards are required for patients on ICS doses of > 1000mcg BDP equivalent/day.
- Montelukast can be particularly beneficial in patients with allergic asthma, rhinitis or exercise-induced asthma and should be considered before further increasing the inhaled steroid dose.

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.

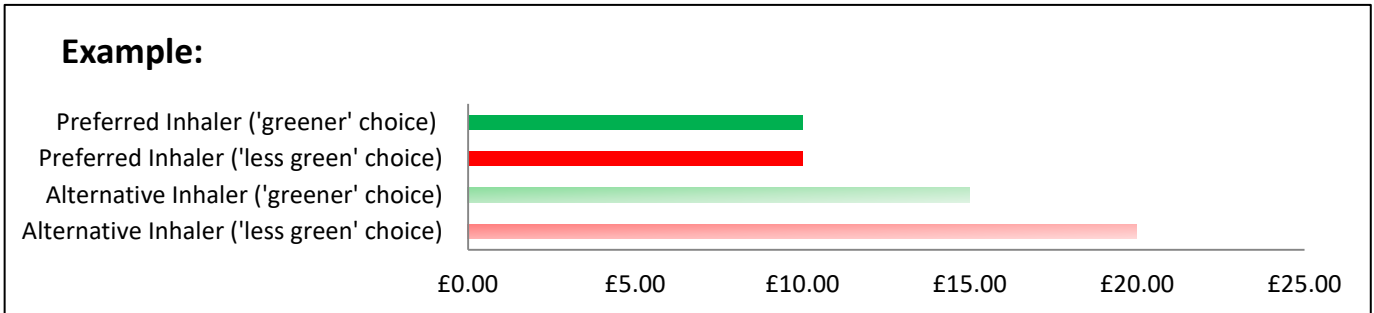
Space Chamber Plus Compact® One piece small volume (160ml) spacer	Compatible with most MDI devices
Aero Chamber Plus® One piece medium volume spacer	Compatible with most MDI devices
Volumatic® Two piece larger volume (750ml) spacer	Only compatible with Clenil®, Flixotide®, Salamol®, Seretide®, Serevent®, Ventolin®

References:

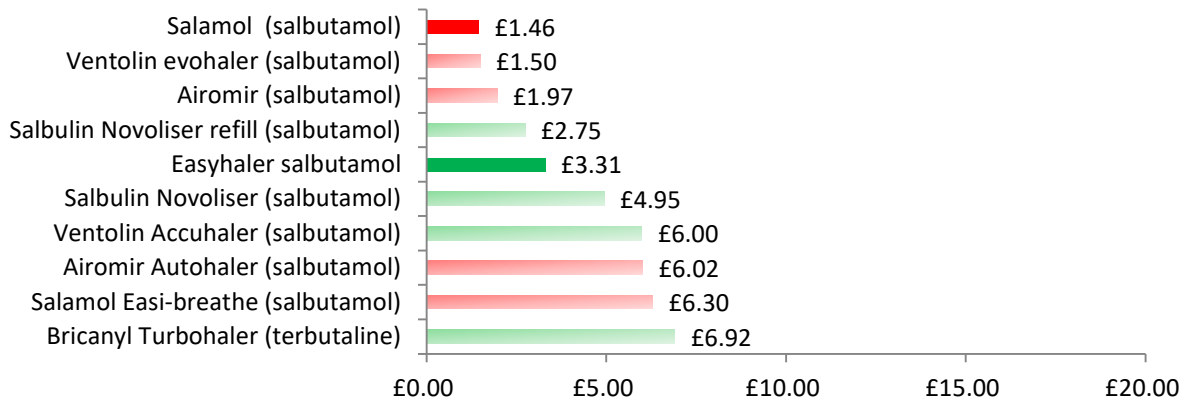
1. BTS/SIGN Guideline for the management of asthma 2019. (Available from: <https://www.brit-thoracic.org.uk/quality-improvement/guidelines/asthma/>) [accessed February 2021]
2. Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2020. (Available from: <https://ginasthma.org/gina-reports/>) [accessed February 2021]
3. NICE Guideline NG80, 2020. Asthma: diagnosis, monitoring and chronic asthma management. (Available from: <https://www.nice.org.uk/guidance/ng80>) [accessed February 2021]
4. Royal College of Physicians. Why asthma still kills: the National Review of Asthma Deaths (NRAD) Confidential Enquiry report. London: RCP, 2014. (Available from: <https://www.asthma.org.uk/globalassets/campaigns/nrad-full-report.pdf>) [accessed February 2021]
5. RightBreathe Inhaler Prescribing Information. (Available from: <https://www.rightbreathe.com/>) [accessed February 2021]

Appendix:

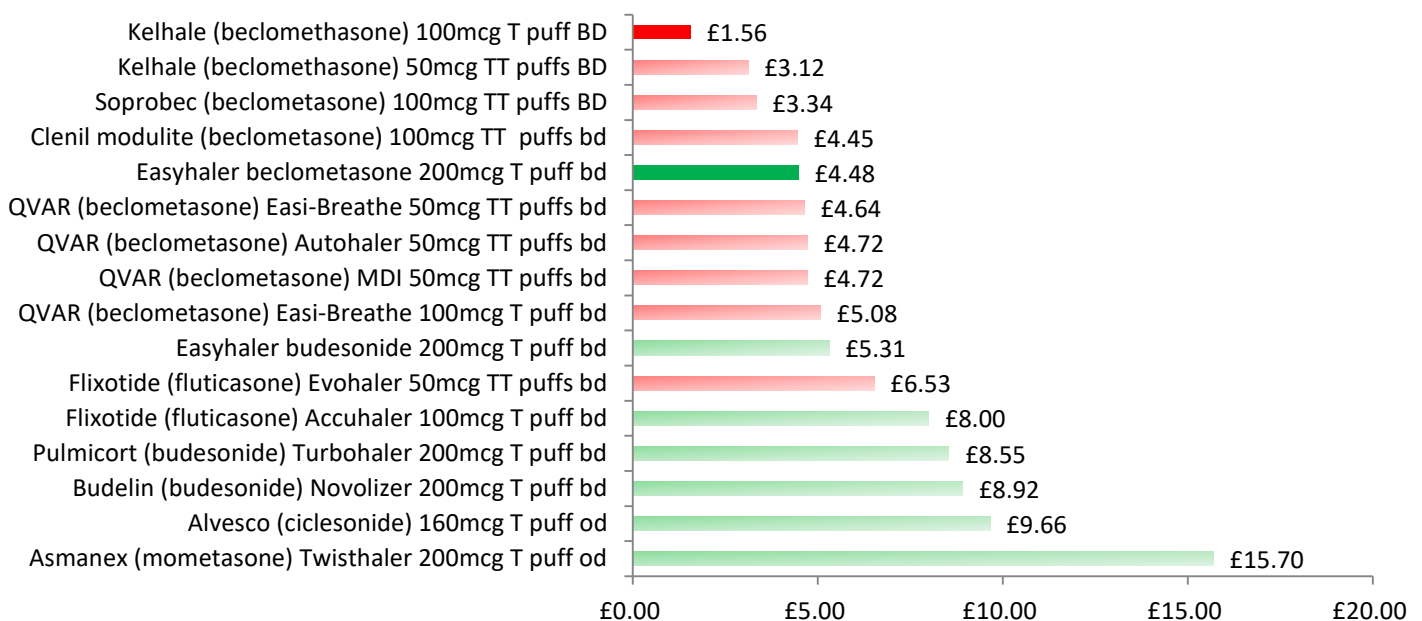
- The following charts provide a cost comparison to aid decision making when the formulary recommended first-choice inhalers (page 1) are not suitable
- Prices correspond to 30 days' treatment (SABA prices correspond to 200 doses of salbutamol 100mcg or 100 doses of terbutaline 500mcg)



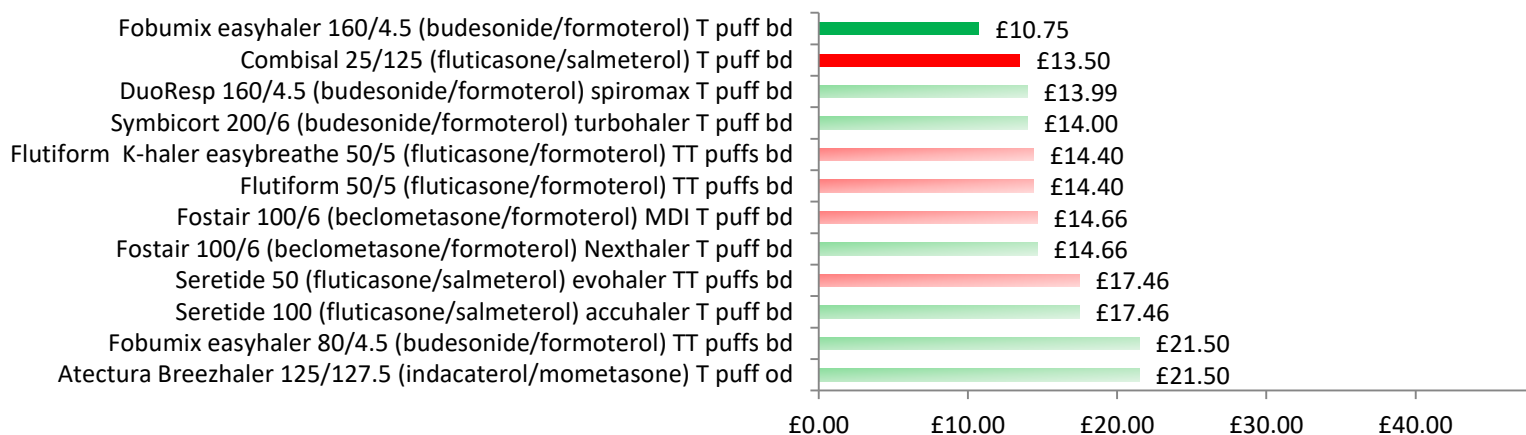
Short acting β_2 agonist as required



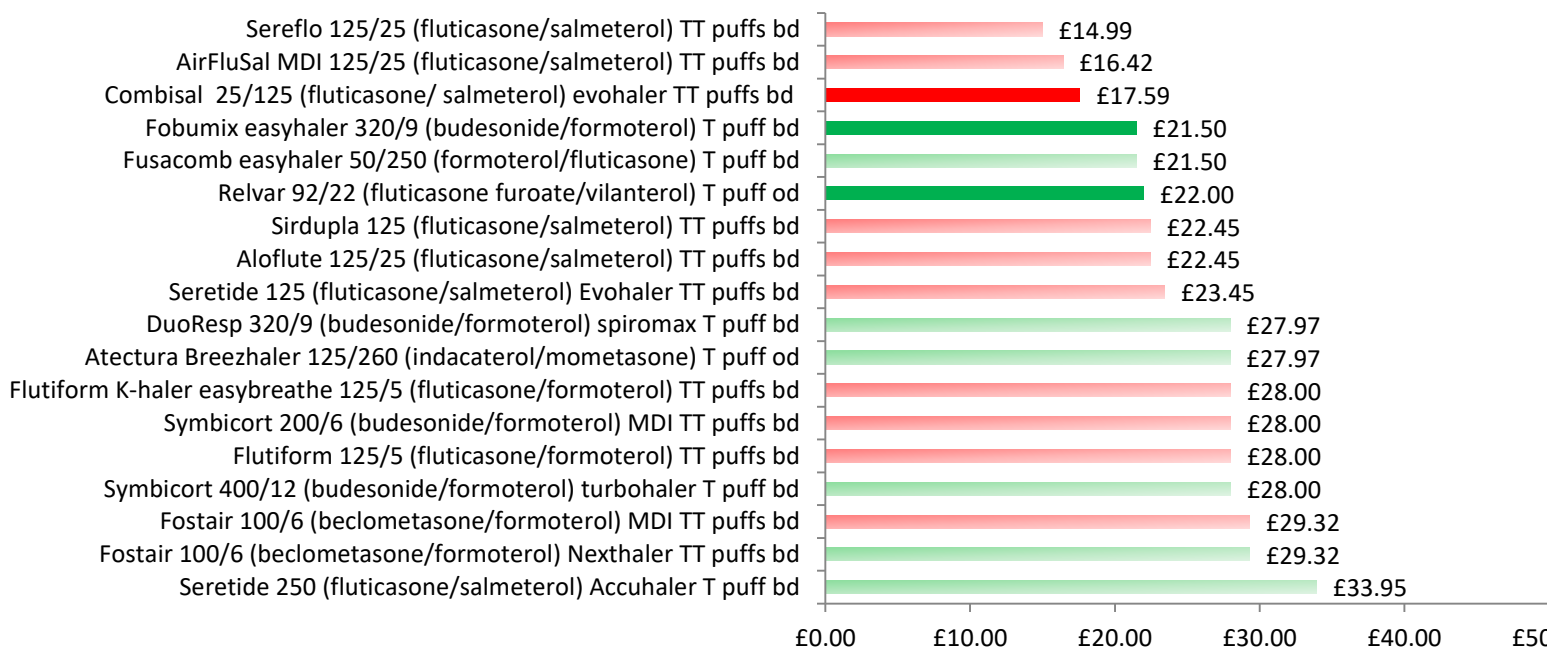
Initial Therapy: Regular low-dose ICS (BDP equiv. 400mcg/day)



Initial add-on therapy: LABA + ICS (BDP equiv. 400mcg/day)



Additional add-on therapy: LABA + ICS (800mcg BDP/day)



High-dose therapies: LABA + ICS (> 800mcg BDP/day)

