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NHS

Guidelines on the management of asthma in adult patients

Authored by members of the NCL Inhaler Sustainability Group

This guideline was approved by the North Central London Medicines Clinical Reference Group on 14/07/2025

Please send any queries or feedback to nclicb.medsoptimisation@nhs.net

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Diagnosis of Asthma

Diagnosis: Do not confirm a diagnosis of asthma without a suggestive clinical history and a supporting objective test

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Obtain a structured clinical history in suspected asthma, and specifically check for:

1. Reported **clinical symptoms** of wheeze, noisy breathing, cough, breathlessness or chest tightness, and any variation (for example, worse during the night or early morning, or seasonal) in these symptoms (consider the RCP 3Qs for asthma – see box to the right)
2. **Triggers** that make symptoms worse: enquire specifically upon other atopic conditions such as hay-fever and eczema, upper airway problems and the environment both indoors and outdoors.
3. **Family history** of asthma or allergic rhinitis.
4. **Smoking** and occupational history
5. **Code as suspected asthma** until the diagnosis is confirmed.
6. ***If the diagnosis of asthma is confirmed****, record the basis for this in the person's medical records, alongside the coded diagnostic entry.*

Royal College of Physicians 3 Questions for Asthma

No to all questions consistent with controlled asthma

In the last month	YES	NO
"Have you had difficulty sleeping because of your asthma symptoms (including cough)?"	☐	☐
"Have you had your usual asthma symptoms during the day (cough, wheeze, chest tightness or breathlessness)?"	☐	☐
"Has your asthma interfered with your usual activities (e.g. housework, work, school, etc)?"	☐	☐

Consider alternative diagnoses for asthma and relevant co-morbidities, such as COPD and bronchiectasis

Pathway for diagnosing asthma (modified from NICE NG245)

Modified from NICE guidance NG245

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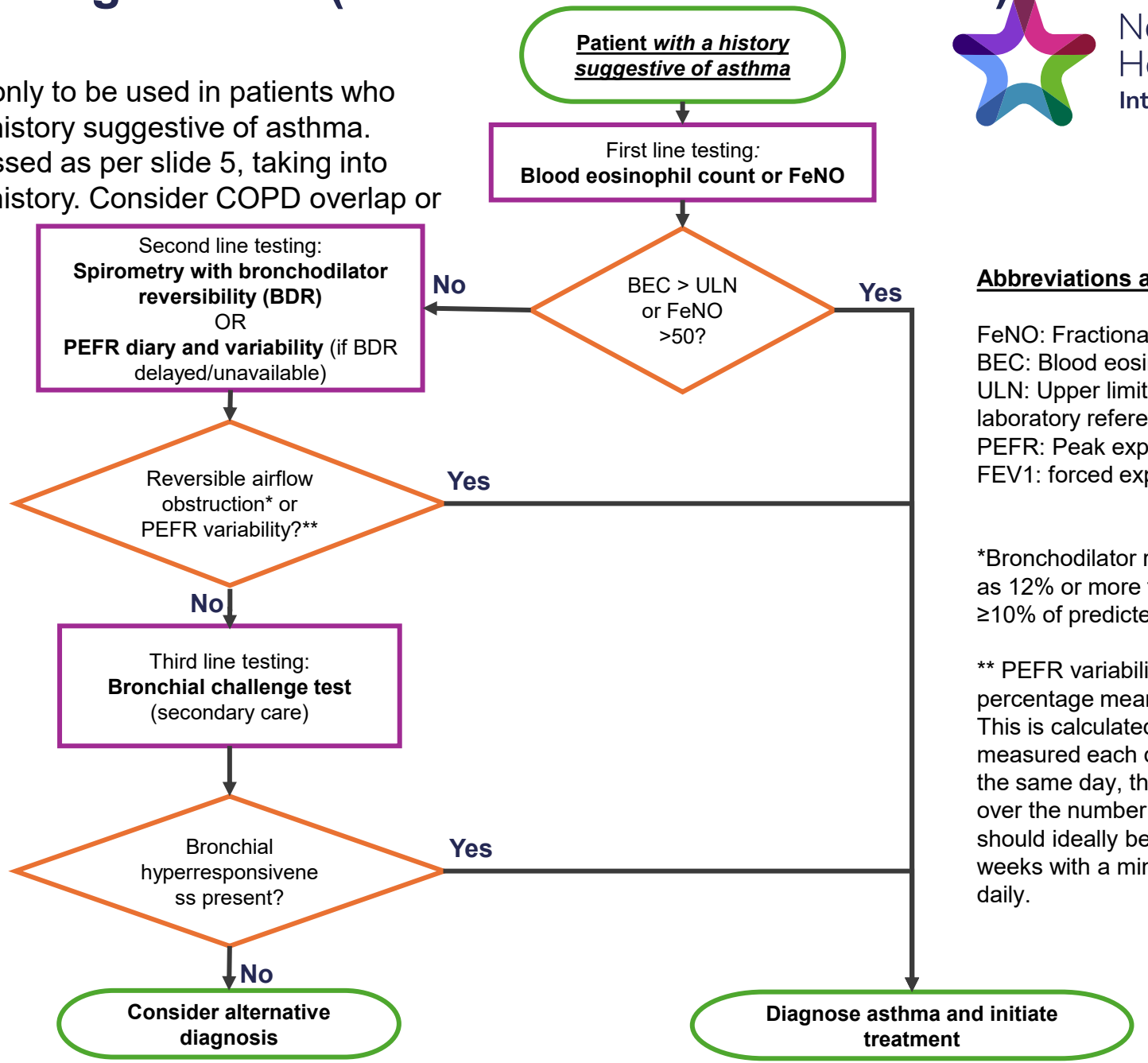
Please note that this algorithm is only to be used in patients who have been assessed and have a history suggestive of asthma. Please ensure the patient is assessed as per slide 5, taking into account tobacco / other smoking history. Consider COPD overlap or other diagnoses as appropriate.



Abbreviations and Definitions:

FeNO: Fractional exhaled nitric oxide
BEC: Blood eosinophil count
ULN: Upper limit of normal, as defined by laboratory reference range
PEFR: Peak expiratory flow rate
FEV1: forced expiratory volume in 1 second

*Bronchodilator reversibility in FEV1 is defined as 12% or more from baseline and ≥200mls OR ≥10% of predicted normal FEV1

** PEFR variability defined as amplitude percentage mean of 20% or more.
This is calculated by subtracting the lowest value measured each day from the highest value on the same day, then averaging this difference over the number of days included. A PEFR diary should ideally be kept over a minimum of 2 weeks with a minimum of two measurements daily.

Asthma Checklist: Assess, Adjust and Review

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Assess
• Symptom control and modifiable risk factors
• Comorbidities
• Inhaler technique and adherence
• Patient's goals and preferences
Adjust (management based on assessments)
• Treatment of modifiable risk factors and comorbidities (examples include GORD, nasal polyps, allergic rhinitis, obesity, smoking, adherence and inhaler technique)
• Relevant non-pharmacological strategies
• Adjustment of medication up/down
• Education and skills training
Review
• Symptoms
• Exacerbations
• Adverse effects
• Lung function
• Comorbidities
• Patient satisfaction

Making every contact count – checklist for patient reviews

- ❑ Every patient should have a **Personal Asthma Action Plan**, with inhaler therapy optimised to the individual.
- ❑ Ask every asthmatic if they smoke and offer immediate referral for treatment of **tobacco dependence and behavioural support**
- ❑ Routinely **check inhaler technique** *(make sure those using a pMDI are always offered a spacer)*
- ❑ Review diagnosis and proactively 'step down' therapy whenever clinically appropriate
- ❑ Check the patient has been using their inhaled therapy as prescribed before changing therapy.
- ❑ Provide steroid safety cards for all eligible patients (see information on steroid safety cards)
- ❑ If the patient is still struggling with asthma control, consider referring them to the severe specialist asthma services.

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Treatment options for asthma in adults

STEP 1: AIR (Anti-inflammatory Reliever) therapy

- The 2024 NICE/BTS/SIGN guideline recommends initiation of asthma treatment with **AIR, a licensed low-dose ICS/LABA inhaler used as needed**, instead of SABA monotherapy.
- These recommendations were made as compared with ICS/LABA, SABA alone was found to have the poorest clinical outcomes (in terms of exacerbations, lung function and asthma control).
- The LABA (formoterol) element is fast acting, achieving similar relief to that of a SABA. The presence of an ICS achieves a prolonged relief of airway inflammation.
- AIR therapy is suitable as initial treatment in adult patients who have symptoms less than 4-5 days a week. SABAs are not required in addition to AIR therapy even during acute episodes.
- ***If asthma remains uncontrolled*** *(i.e., using reliever ≥3 days per week, symptomatic ≥3 days per week or waking with symptoms once a week) or patients present with a severe exacerbation, switch to MART regimen.*

Inhaler options on the NCL Joint Formulary

Symbicort Turbohaler 200/6

Budesonide/Formoterol dry powder inhaler

AIR: 1 dose when required (usual max 8-12 doses daily)

Do not use the 100/6 or 400/12 devices

Carbon footprint: LOW DPI

E S C A L A T I O N

STEP 2: Maintenance and Reliever Therapy (MART)

- **MART is a treatment escalation from AIR, with inhalations of ICS/LABA taken on a regular basis as well as when required**.
- Consider stepping down to as-needed AIR therapy at a later date if asthma symptoms improve and become controlled.
- If asthma remains uncontrolled on low-dose MART, increase to moderate dose MART.
- Patients requiring excessive doses of MART outside of an acute worsening should have a prompt medical review.

Inhaler options on the NCL Joint Formulary

Symbicort Turbohaler 200/6

Budesonide/Formoterol dry powder inhaler

Lose dose MART: 1 dose twice daily **and** 1 dose when required (usual max 8-12 doses daily)
Moderate dose MART: 2 doses twice daily **and** 1 dose when required (usual max 8-12 doses daily)

Do not use the 100/6 or 400/12 strength devices

Carbon footprint: LOW DPI

Fostair NEXThaler 100/6

Beclometasone/ Formoterol inhaler

Low dose MART: 1 dose twice daily, and 1 dose when required (up to max 8 doses daily)
Moderate dose MART (off-label): 2 doses twice daily **and** 1 dose when required (usual max 8-12 doses daily)
Do not use the 200/6 strength device

Carbon footprint: LOW DPI

pMDI alternative: Fostair 100/6 (used with a spacer) pressurised metered dose inhaler (pMDI) is available for patients unable to use a dry powder device
AIR therapy (off-label): 1 dose when required (max 8 doses daily)
Low dose MART: 1 dose twice daily, and 1 dose when required (up to max 8 doses daily)
Moderate dose MART (off-label): 2 doses twice daily and 1 dose when required (usual max 8-12 doses daily)

Treatment options

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Dry Powder Inhalers (DPI) are the preferred option when starting asthma inhaled treatment - provided the patient can use the device correctly

Patients should be started on metered dose inhalers (MDIs) **only after** their inhaler technique has been checked, deemed unsatisfactory for DPI use and documented on the patient's health record.

Check inhaler technique at every opportunity:

Primary Care Respiratory Society (PCRS) and Asthma + Lung UK offer support and guidance on inhaler devices and effective technique.

Can my patient…

1. Inhale deeply and steadily?

AND

2. Hold their breath for 5-10 seconds?

YES
use DPI

Prescribe:

- **STEP 1 – AIR:**
Symbicort DPI Turbohaler 200/6

- **STEP 2 – MART:**
Symbicort DPI Turbohaler 200/6 **or**
Fostair DPI NEXThaler 100/6

NO
use MDI +

Prescribe:

- **STEP 1 – AIR:**
Fostair MDI 100/6

Carbon footprint: HIGH

- **STEP 2 – MART:**
Fostair MDI 100/6

Carbon footprint: HIGH

Treatment escalations – consider liaison with secondary care

Patient unstable on MART despite good adherence

→ **test for FeNO and blood eosinophil count**

Blood Eosinophil Count >ULN or FeNO >50?

YES → If either of these are raised, refer to a specialist in asthma and consider discussion via advice & guidance.

NO → Consider initiating an 8-12 trial of a long-acting muscarinic antagonist (LAMA) such as Spiriva Respimat® in addition to their moderate dose MART (triple therapy of an ICS, LABA and LAMA given in more than one device is termed "open-triple therapy")

NICE guidance suggests a leukotriene receptor antagonist (LTRA, such as montelukast) as an alternative to a LAMA – this could be considered for patients with nasal polyps or exercise-induced asthma (but exercise caution in patients with a history of mental health problems and inform patients that montelukast has been associated with behavioural changes, depression and suicidal ideation).

Asthma controlled?

YES → **Continue treatment**

NO → If the patient remains uncontrolled despite optimised inhalers and unsuccessful trial periods of LAMA or LTRA, refer them to a specialist in asthma for further evaluation and management.

→ **Patient seen by specialist; options include use of a "closed triple" device (such as Enerzair or Trimbow) or biologic therapy**

Note: whenever starting a new medicine for asthma, **refer the patient to their community pharmacy to enrol on the new medicines service**, where they will be reviewed for compliance, adherence, adverse effects, and to offer advice.

Options on the NCL Joint Formulary:

LAMA Inhaler for "open-triple" therapy

Combination of moderate-dose MART device with Spiriva Respimat
(Tiotropium inhaler)

Choose a moderate-dose MART regimen (here)
And add in Spiriva Respimat
2.5 micrograms device: 2 doses OD

Carbon footprint: LOW

SMI

Moderate dose MART device +

LTRA tablets

Montelukast tablets

Adult dose:
10mg once daily in the evening

"Closed" triple-therapy Inhalers

Usually, specialist recommended after failure of MART therapy, prescribed with "as required" salbutamol

Options include:
- **Enerzair: 1 dose OD**
- **Trimbow (medium or high dose inhalers): 2 puffs BD**

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Further information and advice

Steroid safety cards in adults with asthma prescribed ICS or systemic steroids[5–7]

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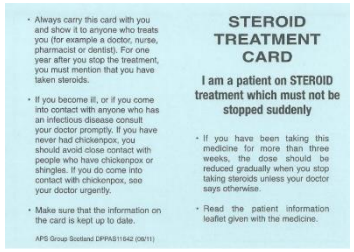
	Steroid TREATMENT card	Steroid EMERGENCY card
		
Purpose	To make patients aware of the risks involved with high-dose or prolonged courses of corticosteroids and to record details of the prescriber, drug, dosage, and duration This should be provided by the initiating clinician/centre, but check on every patient contact that the patient has a treatment card	For patients with or at risk of developing adrenal insufficiency from exogenous steroids for whom missed doses, illness or surgery put them at risk of adrenal crisis This should be provided by the prescribing clinician and the dispensing pharmacist should check that the patient has an emergency card
When to provide a steroid safety card	**Supply** a steroid treatment card to patients on: • High dose ICS (>1000micrograms BDP/day equivalence) • Oral corticosteroids for >3 weeks or >4 short courses in one year **Consider** supplying a steroid treatment card to patients on medium dose ICS (≥ 400micrograms to <1000micrograms BDP equivalence). Risks increase with concomitant use of intranasal and/or topical corticosteroids, or with medicines that inhibit metabolism of corticosteroids (cytochrome p450 inhibitors, such as ritonavir, itraconazole or ketoconazole)	**Supply** a steroid emergency card to patients: • On high dose ICS (>1000micrograms BDP/day equivalence) • On prednisolone 5mg/day or equivalent for ≥4 weeks across all administration routes (oral, inhaled, topical or intranasal) • Patients taking >40mg prednisolone or equivalent for >1 week or repeated courses of short oral doses • Patients taking an oral glucocorticoid within 1 year of stopping long-term therapy • Patients with established or suspected primary adrenal insufficiency (e.g., Addison's disease, congenital adrenal hyperplasia etc) • Patients with established or suspected diagnosis of adrenal insufficiency due to hypothalamo-pituitary disease who are on permanent glucocorticoid replacement therapy or require glucocorticoids during illness or stress such as surgery See more information via the NPSA alert and advice from SPS/Society for Endocrinology
How to obtain	Primary care: PCSE online portal Secondary care can order from the Xerox online portal	Primary care: PCSE online portal Secondary care can order from the Xerox online portal

Optimising inhaler therapy

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The NCL Inhaler Sustainability Group encourages the use of inhalers with a lower carbon footprint where clinically appropriate.
Any change in therapy should be undertaken on an individual patient basis after review of their overall asthma management.
The information on this page is a suggested strategy for identifying patients who would benefit from an asthma review. This includes those who are overprescribed SABA reliever therapy, as this could mask progression of the underlying disease and can contribute to increasing the risk of severe and potentially life-threatening asthma exacerbation (see MHRA alert here).

IDENTIFY – search for patients who will benefit from an asthma review

- ❑ Suggested search strategy: Asthmatic patients (without COPD) prescribed >6 SABA devices per annum OR SABA without a concomitant prescription for a corticosteroid.

REVIEW – Consider factors which may result in uncontrolled asthma

- ❑ Discuss the rationale for the number of SABA pMDIs requested (additional devices might be requested without over reliance on reliever therapy); check symptom frequency (episodes per week, and whether it occurs at night)
- ❑ Determine the patient's current or historical use of inhaled maintenance therapy (e.g., ICS)
- ❑ Discuss whether the patient is compliant with their medication, and adherent to their management plan
- ❑ Check the patient's inhaler technique and whether they use a spacer
- ❑ Discuss whether the patient finds their pMDI easy to use
- ❑ Check for modifiable risk factors, such as exposure to irritants or smoking (in which case, offer immediate referral for treatment of tobacco dependence and behavioural support)
- ❑ Check if the patient has any allergies (Note: DPIs in this guideline contain small amounts of lactose. Whilst the content is usually too small to cause problems in most lactose-intolerant patients, it's advisable to consider lactose content in patients with severe lactose allergy)
- ❑ Use the opportunity to check that the patient is up to date with their flu and COVID-19 vaccinations

ENVIRONMENTAL IMPACT – Describe the issues around carbon footprint and impact on the environment from inhalers

- Have a discussion with the patient around the carbon footprint of inhalers in general
- Use the NICE patient decision aid to discuss the inhaler options available to the patient, the difference in carbon footprint between devices and the potential impact from switching therapy
- Inform the patient that all used or expired inhalers should be taken to a pharmacy where it will be disposed of appropriately

DECIDE – Based on the consultation, discuss appropriate treatment options with the patient

- Consider the patient's views on their treatment and impact of their inhaler on the environment
- Consider if the patient has stable or unstable asthma
- In the case of uncontrolled asthma, or SABAs used without an ICS, consider whether the patient's treatment can be changed to AIR or MART therapy (see the example clinical scenarios provided on the next page)
- Share video demonstrations to help improve the patients' inhaler technique (e.g., Asthma + Lung UK has produced videos for every device)
- After dose or device changes, review within 8 weeks post change to check compliance and asthma control

Example clinical scenarios (see above for full consultation advice)

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Patient requires their SABA inhaler ≥3 times per week (uncontrolled asthma) Patient has not received maintenance therapy with an inhaled corticosteroid before	Patient requires their SABA pMDI on ≥3 times per week (uncontrolled asthma) Patient is currently using an ICS containing inhaler	Patient requires their SABA pMDI <3 times per week and not at night (well controlled asthma) Does not have good inhaler technique	Patient requires their SABA pMDI on ≥3 times per week, despite being on a triple-therapy combination inhaler (uncontrolled asthma) Has good inhaler technique
This patient would benefit from escalating their asthma therapy a low dose MART regime (e.g. Symbicort 200/6 or Fostair 100/6 - 1 dose BD + PRN) • Demonstrate correct technique and ask if the patient finds it easy to use and practical • Consider the type of device the patient wishes to use and ensure the patient can remain compliant with their treatment	This patient would benefit from escalating their asthma therapy to a MART regime: • If previously on a low dose ICS, use a low dose MART regimen (e.g. Symbicort 200/6 or Fostair 100/6 - 1 dose BD + PRN) • If previously on a moderate dose ICS, use a moderate dose MART regimen (e.g., Symbicort 200/6 – 2 doses BD + PRN) • Demonstrate correct technique and ask if the patient finds it easy to use and practical • Consider the type of device the patient wishes to use and ensure the patient can remain compliant with their treatment	This patient would benefit from a review to optimise their inhaler therapy to AIR therapy, and to optimise their choice of device which might be easier for them to use (e.g. Symbicort 200/6 or Fostair 100/6 - 1 dose PRN) • Check dexterity and inspiratory capacity. • If dexterity issues with a pMDI but has good inspiratory flow rate, consider a DPI • If dexterity issues but has poor inspiratory flow rate, consider an aid to administer a pMDI and a spacer device	This patient would benefit from a review to optimise their inhaler therapy and to consider further pharmacological options. • Refer the patient to their local secondary care provider for a full asthma review. • The secondary care team will review pharmacological and non-pharmacological options, including inhaler therapies, oral therapies and biologics.

After dose or device changes, review within 8 weeks post change to check compliance and asthma control

References and abbreviations

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Abbreviations:
AIR: Anti-inflammatory Reliever
MART: Maintenance and Reliever Therapy
pMDI: Pressurised Metered Dose Inhaler
DPI: Dry Powder Inhaler
SMI: Soft Mist Inhaler
BAI: Breath-Actuated Inhaler
SABA: Short-Acting Beta2 Agonist
ICS: Inhaled Corticosteroid
LABA: Long-Acting Beta2 Agonist
LTRA: Leukotriene Receptor Antagonist
BDP: Beclometasone Dipropionate (where used, this denotes the equivalent BDP dose relative to the steroid administered in the dose advised)
OD: Once daily
BD: Twice daily

References:

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Additional resources

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Greener Practice: How to reduce the carbon footprint of inhaler prescribing
https://s40639.pcdn.co/wp-content/uploads/Reducing-Carbon-Footprint-of-Inhaler-Prescribing-v3.3.2.pdf

AAC pathway for uncontrolled asthma in adults
https://www.oxfordahsn.org/our-work/asthma-biologics-toolkit/aac-consensus-pathway-for-management-of-uncontrolled-asthma-in-adults/

How to use this guide

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Brand name
Note: ALWAYS prescribe by brand name AND inhaler type

Generic name

For inhalers containing an ICS:
Steroid potency, described in terms of beclomethasone dipropionate (BDP) equivalence where data is available

Device strength and dose

Carbon footprint:
Labelled as either LOW or HIGH

LOW carbon footprint items are preferred choices in NCL where it is clinically appropriate to use.

HIGH carbon footprint pMDIs contain a propellant which carry a higher carbon footprint relative to dry powder inhalers. These are suitable for use where patients are more suited to a pMDI (e.g., if they have poor inspiratory effort, or have better inhaler technique with a pMDI than other devices)

Example inhaler monograph

Fostair Nexthaler

Beclometasone/ Formoterol inhaler

Low dose (BDP 500mcg/day):
100/6 micrograms device: 1 dose BD

Medium dose (BDP 1000mcg/day):
100/6 micrograms device: 2 doses BD

Photo of device

Carbon footprint: LOW | **DPI**

Type of device:

pMDI = pressurised metered dose inhaler, which uses a propellant
BAI = breath-actuated inhaler, which also contains a propellant
SMI = soft mist inhaler, which contains a liquid but no propellant
DPI = dry powder inhaler, which contains no propellant

For a full list of abbreviations in this guideline, see here

The Adult Asthma CRG is formed of members from the NCL Inhaler Sustainability Group:
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