Barnsley Asthma Guideline 2024

Acute asthma

Please refer to:
BTS/SIGN guideline: Management of acute asthma for guidance on the management of acute asthma in adults and children

Pregnancy

Please refer to:
BTS/SIGN guideline: Asthma in pregnancy

Multilingual Asthma Videos

Please visit the link to access a range of asthma patient videos in multiple languages

With thanks to Dr Llinos Jones and Mid Yorks NHS Trust for this resource

What is asthma and how to treat it?

This video helps to explain to people with asthma what asthma is and how treatments work.
With thanks to Greener Practice for this resource

Diagnosis

See BTS/SIGN chapter 3 Diagnosis and NICE NG80 for further information

Key symptoms shortness of breath, cough, wheeze (confirmed by HCP), chest tightness

Variability duration, intensity, airflow obstruction.

Timing often worse at night and early morning

Triggers including infections, exercise, allergen exposure, weather or irritants

Record and code:

- Triggers
- Atopic history
- Family history
- Occupational exposure
- Smoking history
- Quality assured spirometry including reversibility testing
- Peak flow

Use spirometry to confirm diagnosis or if diagnosis is unsure.

Reversibility of ≥ 200ml after 400mcg salbutamol (or corticosteroid treatment trials) is supportive and ≥ 400 ml strongly suggestive of asthma. **Normal spirometry does not exclude asthma**

2-week peak expiratory flow rate (PEFR) diary showing 20% diurnal variation on ≥ 3 days in a week is an alternative to identify reversibility

In children 5+ an improvement in FEV_1 of 12% or more is regarded as a positive test.

NICE recommends the use of PEFR in children when diagnosis is unclear/intermediate probability of asthma

FeNO (fractional exhaled nitric oxide) testing. Levels ≥ 40ppb in a non-smoker (>35ppb in schoolchildren) support the presence of airway inflammation. **A normal FeNO does not exclude asthma.**

High probability of asthma a typical history with documented wheeze, atopic history and no features of other diagnoses. Consider trial of treatment

Intermediate probability of asthma (diagnosis unsure) pursue investigations as above. Consider; watchful waiting if asymptomatic, commencement of treatment with assessment of response (particularly if airway obstruction present) or referral to secondary care

Low probability of asthma asthma unlikely - pursue other diagnoses and/or refer

Where treatment is initiated, start at a level appropriate to initial severity. Review any treatment initiated at 4-8 week

At diagnosis explain the nature of airways inflammation in asthma and that the aim of treatment is to reduce inflammation. For the best outcomes initiate ICS at diagnosis. (consider montelukast < 5 if unable to take ICS)

Review and management

Review patients annually

Provide a written personalised asthma action plan (PAAP)

See Personalised Asthma Action Plans for further information.

Assess symptoms using RCP 3 questions, asthma control test (ACT) and frequency of reliever use

Features of poor control include:

- Daytime symptoms ≥ 3 times a week
- Night-time awakening ≥ 1 per week
- The use of reliever medication ≥ 3 times per week
- Asthma attacks ≥ 1 per year

Assess lung function e.g. PEFR

Document frequency and severity of any asthma attacks

Check if patient has ever had hospital admissions due to asthma

Check for courses of oral steroids/antibiotics in the last 12 months

Check how many reliever/rescue (SABA) inhalers have been issued in the previous 12 months (address any discrepancy between this and patient reported use)

Check for triggers and advise trigger avoidance where possible

Discuss features of poor control and check the patient understands their treatment

Check adherence and inhaler technique and demonstrate good technique.

See videos How to use your inhaler | Asthma UK

Consider DPI where appropriate. Patient decision aid: Inhalers for asthma (nice.org.uk)

Check spacer use and maintenance. Encourage spacers with MDIs.

Minimise numbers/types of inhaler devices and ensure prescribing is by brand and formulary choice.

Encourage smoking cessation and refer to appropriate stop smoking service (NHS Stop Smoking Service - Yorkshire Smokefree and offer dietary/exercise advice for overweight patients. Consider referral to Weight Management Programme - Barnsley Premier Leisure (bpl.org.uk)

Offer annual flu vaccine, pneumonia vaccine, covid vaccine (where appropriate)

Assess and treat co-morbidities including GORD, rhinitis, vit D deficiency

Step treatment up or down where appropriate. (Review at 4-8 weeks)

Consider step down of treatment if patient well controlled for 3-6 months

Ask patient about concerns or questions

All patients should have anti-inflammatory medication to treat asthma. (ICS unless <5 where you may consider montelukast if unable to take ICS)

Aiming for Complete Control – Good Respiratory Care is Green Respiratory Care

Complete control is defined as:

- No daytime symptoms
- No night-time awakening due to asthma
- No need for rescue medication
- No asthma attacks
- No limitations on activity including exercise
- Normal lung function (in practical terms FEV_1 and/or PEFR > 80% predicted or best
- Minimal side effects from medication

Aim to achieve early control and maintain control by increasing treatment as necessary and decreasing treatment when control is good

- Use lowest effective doses to achieve control
- Record a "best" PEFR in patient's record. If this is not possible record a predicted PEFR.
- Check inhaler technique at every opportunity

Address SABA over reliance – anyone using ≥ 3 SABA inhalers in 12 months is potentially over reliant - THINK ASTHMA RIGHT CARE!

As per GINA - For the best outcomes ICS-containing controller treatment should be initiated as soon as possible after diagnosis

Personalised Asthma Action Plans (PAAPs)

For Adults: Provide a written personalised asthma action plan (PAAP) preferably using PEFR (peak expiratory flow rate) monitoring appropriate to severity of the symptoms:

- PEFR >80% best – no change needed continue with current maintenance treatment
- PEFR 60-80% best – options include increased therapy by MART regime, or increasing ICS total dose substantially for 7-14 days e.g. by quadrupling total ICS dose – consider providing an additional ICS inhaler to take during exacerbations (if already on ICS/LABA or not recommending increased MART therapy).
- PEFR 50-60% best – start oral steroids and seek advice
- **PEFR < 50% best – seek urgent medical attention**

Best PEFR is the highest value blown during a 2-week period when asthma control is good. Repeat this periodically (e.g. every 5 years) as age will impact PEFR

For Children: Symptom-based plans are generally preferable for children (Children's personalised asthma action plan)

For Children 12-16 use PEFR within the PAAP where appropriate.

Include advice in self-management plans for all adults and children highlighting they must contact a healthcare professional for a review if their asthma control deteriorates

When to Refer

Persistent poor control:

- Despite high dose ICS/LABA (inhaled corticosteroid/long acting β agonist)
- ≥ 3 SABA (short acting β agonist) inhalers in the last 12 months despite primary care review inc. adherence and technique check
- ≥ 2 asthma attacks requiring oral steroids in the last 12 months
- Life-threatening asthma attack/ admission for asthma attack

When referring patients

- Include information about adherence
- Number of courses of oral steroids used in last 12 months
- Consider pre referral bloods such as IgE, FBC and a chest x-ray

Any of:

- Asthma diagnosis in doubt (red flags/indicators of other diagnoses)
- Suspected occupational asthma
- Poor response to asthma treatment
- Reached maximum treatment
- Non acceptance of diagnosis or persistent non-adherence
- Unable to tolerate treatment
- Poorly controlled asthma in pregnancy
- Breathing pattern disorder suspected

Treatment Algorithm 1 – Flexible Regimen (for Adults and Children 12+)

GINA and locally preferred approach Step up if control not achieved → consider step down if appropriate

START HERE for mild asthma with infrequent symptoms

START HERE if symptoms most days or waking with asthma once a week

AS NEEDED ANTI-INFLAMMATORY (Low dose BUDESONIDE/FORMOTEROL) RELIEVER (AIR)

1 puff PRN (up to 8 puffs daily - rarely 12 puffs) age 12+/age 18+

This step is intended for infrequent symptoms – regular use indicates step up is required

Patients using 4 or more puffs/day persistently require review – step up or add on treatment may be required

Seek urgent medical advice if you are unwell or needing 8 or more puffs a day

Low dose ICS/FORMOTEROL (MART)

Fobumix® Easyhaler 160/4.5 1 puff BD and PRN (up to 8 puffs daily - rarely 12 puffs) age 12+

Fostair® 100/6 NEXThaler or Luforbec® pMDI 1 puff BD and PRN (up to 8 puffs daily) age 18+

(Symbicort® 200/6 Turbohaler* 1 puff BD and PRN (up to 8 puffs daily - rarely 12 puffs) age 12+ second line budesonide/formoterol DPI)

Seek medical advice if using additional rescue doses (above usual maintenance dose) persistently

Seek urgent medical advice if you are unwell or needing 8 or more puffs a day

Medium Dose ICS/FORMOTEROL (MART)

Fobumix® Easyhaler 160/4.5 2 puffs BD and PRN (up to 8 puffs daily - rarely 12 puffs) age 12+

Fostair® 100/6 NEXThaler or Luforbec® pMDI 2 puffs BD and PRN (up to 8 puffs daily) age 18+

(Symbicort® 200/6 Turbohaler* 2 puffs BD and PRN (up to 8 puffs daily - rarely 12 puffs) age 12+ second line budesonide/formoterol DPI)

Seek medical advice if using additional rescue doses (above usual maintenance dose) persistently

Seek urgent medical advice if you are unwell or needing 8 or more puffs a day

High Dose ICS/LABA (Not MART) or add on

Consider trial of high dose ICS/LABA + SABA PRN (**not MART regime**)

Consider additional add on therapy if not previously tried

Refer for specialist care

High doses should only be used after referring the patient to secondary care

All patients on high dose ICS should receive a Steroid Emergency Card

SABA and Flexible Regimens

*In some occasional instances, patients using flexible dosing regimes may have an in-date SABA pMDI (plus spacer) reserved for **emergency use only**, however for MOST patients flexible dosing regimens should be SABA free*

For emergency treatment of acute asthma, a patient may take up to 6 puffs of ICS/formoterol at any one time (1-minute intervals) – if 6 puffs do not relieve symptoms seek urgent medical advice

Maintenance and Reliever Therapy (MART)

Stop SABA inhaler and remove from repeats

Important - See MART Regimes – further information

Seek medical advice if using additional rescue doses (above usual maintenance dose) persistently

Additional Information for Flexible Regimens

This flexible regimen is based on recommendations from 2023 GINA Report, Global Strategy for Asthma Management and Prevention

Evidence is with budesonide-formoterol DPI, usually 200/6mcg metered dose (160/4.5mcg delivered dose). Not all budesonide/formoterol inhalers currently have a licence to be used as a reliever alone without regular maintenance doses. **Refer to the relevant SPC for further information.**

Consider Montelukast#

Age 15+ 10mg OD

Age 12-14 chewable tab 5mg OD

Do not give montelukast 10mg tabs to children < 15 years of age

Consider patient factors: patient preference, compliance with inhaled ICS and oral therapy, prescription charges.

Review treatment at 4-8 weeks – stop if no response. Step up inhaled therapy if required

If response seen but control remains inadequate, continue montelukast and step-up inhaled therapy

Consider trials of add on therapy

Montelukast# – see above

LAMA

If MART used - add Spiriva® Respimat®.

For high dose regimes add Spiriva® Respimat® or change to closed triple ICS/LABA/LAMA with asthma licence (Trimbow® pMDI).

If LAMA considered for age <18, please refer patient to SCH

Caution Montelukast – Reminder of the risk of neuropsychiatric reactions

Treatment Algorithm 2 - Traditional Regimen (For Adults and Children 12+)

Step up if control not achieved → consider **step down** if appropriate ⇢

Additional Information

Treatment Algorithm 2 is a traditional pathway where patients use a maintenance inhaler (ICS or ICS/LABA) either once or twice daily PLUS SABA PRN as rescue/reliever inhaler

The treatment algorithms are interchangeable, and it is always appropriate to consider if a patient is currently using the right regimen for them

Treatment Algorithm 1 – Flexible Regimen is the GINA and locally preferred approach where appropriate

LOW DOSE ICS

Plus SABA PRN as RESCUE/RELIEVER inhaler

Consider as needed anti-inflammatory reliever if compliance to regular ICS dosing may be poor or for mild infrequent symptoms – see Algorithm 1 Flexible Regimen

LOW DOSE ICS/LABA

Plus SABA PRN as RESCUE/RELIEVER inhaler

Consider once daily preparation where appropriate
Consider MART regime - see Algorithm 1 Flexible Regimen

MEDIUM DOSE ICS/LABA

Plus SABA PRN as RESCUE/RELIEVER inhaler

Consider once daily preparation where appropriate
Consider MART regime – see Algorithm 1 Flexible Regimen

HIGH DOSE ICS/LABA

Consider trial of high dose ICS/LABA + SABA PRN

Consider additional add on therapy if not previously tried

Refer for specialist care

High doses should only be used after referring the patient to secondary care

All patients on high dose ICS should receive a Steroid Emergency Card

Consider Montelukast#

Age 15+ 10mg OD

Age 12-14 chewable tab 5mg OD

Do not give montelukast 10mg tabs to children < 15 years of age

Consider patient factors: patient preference, compliance with inhaled ICS and oral therapy, prescription charges.

Review treatment at 4-8 weeks – stop if no response. Step up inhaled therapy if required

If response seen but control remains inadequate, continue montelukast and step-up inhaled therapy

Consider trials of add on therapy

Montelukast# – see above

LAMA

Add Spiriva® Respimat® or change to closed triple ICS/LABA/LAMA with asthma licence (Trimbow® pMDI)

If LAMA considered for age <18, please refer patient to SCH

SABA

SABA should NOT be used alone for treatment of asthma. All patients should have anti-inflammatory treatment in the form of ICS or ICS/LABA

If a patient is requiring > 2 SABA in 12 months their asthma is likely to be uncontrolled and they require a review

For emergency treatment of acute asthma a patient may take up to 10 puffs of SABA at any one time (1-minute intervals) – if 10 puffs do not relieve symptoms seek urgent medical advice as per PAAP

Caution Montelukast – Reminder of the risk of neuropsychiatric reactions

Inhaler chart

DEVICE TYPE: AEROSOL/MDI – Large CO2 Footprint. Slow and steady breath, suitable for use with spacer and those with poor inspiratory effort. Dexterity required.
DEVICE TYPE: **DPI – smaller CO2 footprint** Hard and deep breath, suitable for those with sufficient inspiratory effort, some devices require less dexterity.

Device	SABA	Low dose ICS	Low dose ICS/LABA	Med dose ICS/LABA	High dose ICS/LABA	+LAMA (single or triple)
DPI	***Easyhaler Salbutamol 100mcg 1-2 puffs prn** £3.31 for 200 dose 173gCO2eq* based on 2 puff daily for 28 days Not extra fine particle Aged 4+	***Easyhaler Budesonide 100mcg 2puffs bd** 200 dose £4.96 364gCO2eq* Age 6+	***Fobumix Easyhaler 160/4.5 1puffs bd** or **MART** 60 or 120 dose £10.03 226gCO2eq* Age 12+ **First line budesonide/formoterol DPI**	***Fobumix Easyhaler 160/4.5 2puffs bd** or **MART** 120 dose £20.07 452gCO2eq* Age 12+ **First line budesonide/formoterol DPI**	***Fobumix Easyhaler 320/9 2puffs bd** 2 x 60 dose £40.13 903gCO2eq* Age 12+ max dose 12-18 1pbd	**Spiriva Respimat 2.5mcg** **2puffs once a day** 60 dose £21.47 With inhaler 728gCO2eq or refill cartridge only 112gCO2eq Age 6+ Despite 6+ license refer to specialist to consider if for age <18
DPI		**Pulmicort Turbohaler 100mcg 2puffs bd** 200 dose £7.98 784gCO2eq Age 5+	**Symbicort Turbohaler 200/6 1puff bd** or **AIR** or **MART** 120 dose £13.06 373gCO2eq Age 12+ (second line budesonide/formoterol DPI)	**Symbicort Turbohaler 200/6 2puffs bd or AIR or MART** 120 dose £26.13 747gCO2eq Age 12+ (second line budesonide/formoterol DPI)	**Symbicort Turbohaler 400/12 2puffs bd** 60 dose £52.27 1960gCO2eq Age 18+ (12+ max dose 1pbd)	
Extra fine DPI			***Fostair NEXThaler 100/6 1puffs bd** or MART 120 dose £13.69 830gCO2eq Age 18+	***Fostair NEXThaler 100/6 2puffs bd** or MART 120 dose £27.37 830gCO2eq Age 18+	***Fostair NEXThaler 200/6 2puffs bd** 120 dose £27.37 830gCO2eq Age 18+	
Once daily DPI	**Ventolin Accuhaler 200mcg 1puff prn £**3.60 272gCO2eq if 1 puff daily Age 4+	**Flixotide Accuhaler 100mcg 1puff bd** 60 dose £3.75 Not once daily 777gCO2eq Age 4+	**Relvar Ellipta 92/22 1puff od** 30 dose £20.53 703 gCO2eq Age 12+	**Relvar Ellipta 184/22 1puff od** 30 dose £27.53 703 gCO2eq Age 12+		
MDI	**Salamol CFC-free MDI 1-2puffs prn** 200 dose £1.46 3416gCO2eq if 2 puff daily	**Soprobec 100mcg 2puffs bd** 200 dose £2.70 7871gCO2eq*	**Combisal 50/25 2puffs bd** 120 dose £12.60 19620gCO2eq Age 4+	**Airflusal pMDI 125/25 2puffs bd** 120 dose £15.33 19620gCO2eq Age 18+	**Airflusal pMDI 250/25 2puffs bd** 120 dose £19.15 19620gCO2eq Aged 18+	***Trimbow MDI 87/5/9** 120 dose £41.53 13256gCO2eq* Aged 18+
Extra fine particle MDI	**Salamol Easi-breathe 200d 1-2puffs prn** £6.30 not extra fine 3427gCO2eq if 2 puffs daily	**Kelhale 50mcg 2 puffs bd** 200 dose £2.91 9726gCO2eq Age 18+	***Luforbec 100/6 1-2puffs bd** or MART 120 dose £13.05 10658gCO2eq* Age 18+	***Luforbec 100/6 2puffs bd** or MART 120 dose £13.05 10658gCO2eq* Aged 18+	***Luforbec 200/6 2puffs bd** 120 dose £13.05 13347gCO2eq* Age 18+	***Trimbow MDI 172/5/9** 120 dose £41.53 13237gCO2eq* Aged 18+

- **Choice of preparation should be driven by patient choice, device acceptability and consideration of carbon footprint.**
- **NICE inhaler patient decision aid is available to assist with regards environmental impact:** Patient decision aid: Inhalers for asthma (nice.org.uk)
- Check inhaler technique and compliance with particular device using In-check DIAL at annual review. If a patient is unable to use a particular device satisfactorily, then an alternative device should be sought.
- Spacers should be washed out with hot soapy water weekly and left to dry not wiped. They should be replaced annually.

Costs are for 28 days treatment. Carbon footprint shown in gCO2eq per 28 days * = carbon neutral using offsets as certified by the Carbon Trust. all reference Mims online March 2024

MART Regimes – Further Information

Consider MART if inadequate asthma control + frequent need for reliever inhaler, if concordance is a problem or if simplifying the number of inhalers/prescriptions may be helpful. MART regimes can aid compliance and improve asthma control

Stop regular SABA inhaler on repeat. Some patients using MART regimes may have an in-date SABA pMDI (plus spacer) reserved for emergency use only if considered necessary (most patients should be SABA free)

Careful education of patients is required for this treatment strategy. Although the licence states maximum dose up to 8/12 puffs daily, patients should be informed that if such high doses are required their asthma is not well controlled and they require a review (see further advice below)

Only Symbicort Turbohaler and Fobumix Easyhaler have a MART licence for children 12+. There are no MART regimes licensed for children < 12

MART regimes are NOT licensed for high dose ICS. Higher strength products e.g. Symbicort® 400/12, Luforbec® 200/6 and Fostair® 200/6 are NOT licensed for MART

Low dose MART regimes

Fobumix® Easyhaler 160/4.5 1 puff BD and PRN (up to 8 puffs daily –rarely 12 puffs)
Fostair® 100/6 NEXThaler or Luforbec pMDI 1 puff BD and PRN (up to 8 puffs daily)
(Symbicort® 200/6 Turbohaler 1 puff BD and PRN (up to 8 puffs daily - rarely 12 puffs)
second line budesonide/formoterol DPI)

Medium dose MART regimes

Fobumix® Easyhaler 160/4.5 2 puffs BD and PRN (up to 8 puffs daily -rarely 12 puffs)
Fostair® 100/6 NEXThaler or Luforbec pMDI 2 puffs BD and PRN (up to 8 puffs daily)
(Symbicort® 200/6 Turbohaler 2 puffs BD and PRN (up to 8 puffs daily – rarely 12 puffs)
and second line budesonide/formoterol DPI)

Patients should seek non urgent advice if using additional rescue doses (above usual maintenance dose) persistently – these patients may require a review of maintenance medication

Patients should seek urgent medical advice if acutely unwell due to asthma or needing 8 or more puffs in a day

For emergency treatment of acute asthma a patient may take up to 6 puffs (1 puff at a time at 1-minute intervals)– if 6 puffs of ICS/formoterol inhaler do not relieve symptoms seek urgent medical advice

Cautions and Considerations

Smoking can decrease the effects of ICS - continue to encourage smoking cessation at every opportunity
Remind patients to rinse their mouth after using ICS
Issue a Steroid Emergency Card for patients on prolonged high dose ICS see Appendix 1 of Sheffield Formulary Respiratory System for further advice
Any patient who has been prescribed > 12 salbutamol inhalers in 12 months should be invited in for **urgent** review; however 3+ SABA inhalers in 12 months could indicate poor control and these patients are at risk of asthma attack and should have a review of treatment
All patients discharged from hospital post asthma exacerbation should have a primary care review within 2 working days as per NICE QS 25
Consider fracture risk assessment (DEXA scanning) for patients on high dose inhaled steroids and/or frequently requiring oral steroids
Caution montelukast – Reminder of the risk of neuropsychiatric reactions

Stepping down ICS

High doses of ICS may cause long term harm, if a patient is well controlled and stable then consider reducing the dose
It is suggested that doses can be reduced by 25-50% every 3 months for stable patients, although 50% of patients will need to step up again
After ICS is reduced the patient should have their treatment reviewed within 4-8 weeks
Any decision to step down should be made with the patient and the patient's personalised asthma action plan updated

Treatment Algorithm - Children <12

Step up if control not achieved → consider step down if appropriate ⇢

Important Information

For children < 12 MART regimes are not licensed

Referral criteria for children under 2 -the threshold for seeking expert opinion should be lowest in these children

Monitor growth (height and weight centile) of children with asthma on an annual basis

Any child on medium dose ICS or above should be under the care of a specialist paediatrician for the duration of treatment

Please note:

Different products and doses are licensed for different age groups and some are not licensed for use in children at all. Prior to prescribing, the relevant Summary of Product Characteristics should be checked. www.medicines.org.uk/emc

BTS/SIGN classification for ICS strengths have been used in this guideline. The starting doses for children are considered the very low dose (paediatric) doses, stepping up to low dose ICS then medium dose ICS (only after secondary care referral). High dose ICS strengths should not be used for children under 12 without specialist intervention

VERY LOW DOSE (paediatric dose) ICS

Plus SABA PRN as RESCUE/RELIEVER inhaler

(Or consider montelukast# < 5 years if unable to take ICS)

Montelukast# for <12

Child 6 months-5 years
4mg OD (chewable tablet or granules sachet)

Child 6-14 years
5mg OD (chewable tablet)

< 5 years

ADD montelukast#
4mg OD (chewable tablet or granules)

Refer for specialist care

All children < 5 years should be referred for specialist care if uncontrolled at this point

≥ 5 years

LOW DOSE ICS or add montelukast#

SABA PRN as RESCUE medication only

LOW DOSE ICS/LABA (≥ 5 years)

SABA PRN as RESCUE medication only

Use combination inhaler where appropriate (prescribe within licensed indications/ care not to increase ICS dose)

MEDIUM DOSE ICS/LABA (≥ 5 years)

SABA PRN as RESCUE medication only

Refer for specialist care

Medium doses should only be used after referral of patient to secondary care.

Use combination inhaler where appropriate (prescribe within licensed indications/ care not to increase ICS dose)

Consider Montelukast#

If not previously tried or already taking

Child 6-14 years
5mg OD (chewable tablet)

Caution Montelukast – Reminder of the risk of neuropsychiatric reactions

Barnsley Inhaler Choice Guide for Children <12

pMDI plus spacer remains the preferred delivery method for most children under 12 years – prescribe appropriate spacer

SABA	Very Low dose ICS (Usual starting dose)	Low dose ICS	Low dose ICS/LABA	Medium dose ICS/LABA
Salamol pMDI 100mcg (+spacer) 1-2 puffs PRN 	**Flixotide Evohaler 50 mcg pMDI (+spacer)** 1 puff BD Age 4+ 	**Flixotide Evohaler 50 mcg pMDI (+spacer)** 2 puffs BD Age 4+ 	**Combisal 25/50 mcg pMDI (+spacer)** 2 puffs BD Age 4+ 	Refer for specialist care Higher strength products are available but are not licensed < 12 years
	Soprobec 50 mcg pMDI (+spacer) 2 puffs BD 	**Soprobec 100 mcg pMDI (+spacer)** 2 puffs BD 		
Easyhaler Salbutamol 100mcg DPI* 1-2 puffs PRN Age 4+ 	**Easyhaler Budesonide 100 mcg DPI*** 1 puff BD Age 6+ 	**Easyhaler Budesonide 100mcg DPI*** 2 puffs BD Age 6+ 	**Easyhaler Fobumix 80/4.5 mcg DPI*** 2 puffs BD Age 6+ (not as MART) 	
	Pulmicort Turbohaler 100 mcg DPI* 1 puff BD Age 5+ 	**Pulmicort Turbohaler 100 mcg DPI*** 2 puffs BD Age 5+ 	**Symbicort Turbohaler 100/6 mcg DPI*** 2 puffs BD Age 6+ (not as MART) 	Refer for specialist care Higher strength products are available but are not licensed < 12 years
Additional Comments SABA monotherapy is NOT recommended. Use SABA as rescue medication only	**Additional Comments** For beclometasone with dose counter choose Clenil	**Additional Comments** For beclometasone with dose counter choose Clenil	**Additional Comments** Combisal 25/50 is licensed from 4+ but should only be used in children 5+ as part of this algorithm	**Additional Comments**

See Table of active ingredients for drug contents of each inhaler

*Dry powder options have been included in this table for situations where you may wish to transition a child onto a DPI before the age of 12. An appropriate age to consider a change to DPI is towards the end of primary school/transition to secondary school (age 11/12)

Inhaler Choice

- **pMDI plus spacer remains the preferred delivery method for most children under 12 years.**
- For ANY child when considering a DPI you MUST ensure they have the appropriate inspiratory effort
- An appropriate time to consider a change to DPI is towards the end of primary school/transition to secondary
- Check inhaler technique
- **Prescribe pMDIs with appropriate spacer** (Aerochamber Plus Flow-Vu); reinforce the importance of using it (see Spacer Guide)
- Prescribe by brand
- Use combination inhalers

Glossary of Terms and Abbreviations

ACT	Asthma Control Test
BD	Twice daily
BTS	British Thoracic Society
DPI	Dry powder inhaler
FBC	Full blood count
FeNO	Fractional exhaled nitric oxide
FEV_1	Forced expiratory volume in 1 second
GINA	Global Initiative for Asthma
HCP	Health care professional
ICS	Inhaled corticosteroid
IgE	Immunoglobulin E
ICS/LABA	Inhaled corticosteroid/long-acting β agonist combination inhaler
LAMA	Long-acting muscarinic antagonist
MART	Maintenance and reliever therapy
NICE	National Institute for Health and Care Excellence
OD	Once daily
PAAP	Personalised asthma action plan
PEFR	Peak expiratory flow rate
pMDI	Pressurised metered dose inhaler
PRN	When required
SABA	Short-acting β agonist
SIGN	Scottish Intercollegiate Guidelines Network
SMI	Soft mist inhaler
Triple	Combination inhaler with inhaled corticosteroid/ long-acting β agonist/long-acting muscarinic antagonist

Table of active ingredients

Airflusal pMDI	Fluticasone propionate + Salmeterol Xinafoate
Combisal pMDI	Fluticasone propionate + Salmeterol Xinafoate
Easyhaler Budesonide	Budesonide
Easyhaler Salbutamol	Salbutamol
Flixotide Accuhaler	Fluticasone propionate
Flixotide Evohaler	Fluticasone propionate
Fobumix Easyhaler	Budesonide + formoterol
Fostair NEXThaler	Fine particle beclometasone + formoterol
Kelhale pMDI	Fine particle beclometasone
Luforbec pMDI	Fine particle beclometasone + Formoterol
Pulmicort Turbohaler	Budesonide
Relvar Ellipta	Fluticasone furoate + vilanterol
Salamol pMDI	Salbutamol
Salamol Easi-breathe	Salbutamol
Soprobec pMDI	Beclometasone
Spiriva Respimat	Tiotropium
Symbicort Turbohaler	Budesonide + formoterol
Trimbow pMDI	Fine particle beclometasone + formoterol + glycopyrronium
Ventolin Accuhaler	Salbutamol

Adapted for Barnsley July 2024, with thanks, from Sheffield Asthma Guideline 2023. Approved at July 2024 Barnsley APC, Review date: July 2027