## **Barnsley Asthma Guideline 2024**







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#### 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, <u>asthma control test (ACT)</u> 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<sub>1</sub> 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 <u>ASTHMA RIGHT CARE</u>!

As per <u>GINA</u> - 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 (<u>Children's personalised asthma action plan</u>) 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:

- $\bullet \quad \text{Despite high dose ICS/LABA (inhaled corticosteroid/long acting } \beta \text{ agonist)}\\$
- $\geq$  3 SABA (short acting  $\beta$  agonist) inhalers in the last 12 months despite primary care review inc. adherence and technique che
- ≥ 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 consider step down if appropriate



START HERE for mild asthma with infrequent symptoms

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

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

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

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

### **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

### Low dose ICS/FORMOTEROL (MART)

Fobumix® Easyhaler 160/4.5 1 puff BD and PRN (up to 8 puffs daily - rarely 12 puffs) age 18+ 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+ and second line budesonide/formoterol DPI in adults))

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 18+ 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+ and second line budesonide/formoterol DPI in adults)

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

#### 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 reauired

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<sup>®</sup> or change to closed triple ICS/LABA/LAMA with asthma licence (Trimbow® pMDI).

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

### **Treatment Algorithm 2 - Traditional Regimen**



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

#### 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 stepup inhaled therapy

#### **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 (1minute intervals) – if 10 puffs do not relieve symptoms seek urgent medical advice as per PAAP

### **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 trials of add on therapy

Montelukast# – see above

#### LAMA

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

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

#### 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 200 dose £3.31	*Easyhaler Budesonide 100mcg 2puffs bd 200 dose £4.96 364gCO2eq* Age 6+	*Fobumix Easyhaler 160/4.5  1puffs bd  or MART 60 dose £10.03  226gCO2eq*  Age 18+  First line budesonide/formoterol DPI	*Fobumix Easyhaler 160/4.5  2puffs bd or  MART 120 dose £20.07  452gCO2eq*  Age 18+		*Fobumix Easyhaler 320/9 2puffs bd 2 x 60 dose £40.13 903gCO2eq* Age 18+	Spiriva Respimat 2.5mcg 2puffs once a day
DPI 12+ years	173gCO2eq*  28 days based on 2 puff daily  Not extra fine particle	Pulmicort Turbohaler 100mcg 2puffs bd 200 dose £7.98 784gCO2eq Age 5+	Symbicort Turbohaler 200/6 1puff bd or reliever or MART 120 dose £13.06 373gCO2eq Age 12+ (second line budesonide/formoterol DPI in adults)	Symbicort Turl 2puffs MART 120 d 747gCt Age	<b>bd or</b> ose £26.13 O2eq	Symbicort Turbohaler 400/12 2puffs bd 60 dose £52.27 1960gCO2eq Age 18+ (12+ max dose 1pbd)	60 dose £21.47  With inhaler 728gCO2eq  or refill cartridge only  112gCO2eq
Extra fine DPI	Aged 4+		*Fostair NEXThaler 100/6 1puffs bd or MART 120 dose £13.69 830gCO2eq Age 18+	*Fostair NEXT 2puffs bd or dose £27.37 Age	MART 120 830gCO2eq	*Fostair NEXThaler 200/6 2puffs bd 120 dose £27.37 830gCO2eq Age 18+	Age 6+  Despite 6+ license refer
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+	1puff od		Ivar Ellipta 184/22 1puff od 30 dose £27.53 703 gCO2eq Age 12+	to specialist to consider if for age <18	
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	Airflusal pMDI bd 120 dose 19620g0 Age	£15.33	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 or MART 120 10658gC Aged	dose £13.05 CO2eq*	*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 has 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)
12+ and second line budesonide/formoterol DPI in adults))

#### **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) 12+ and second line budesonide/formoterol DPI in adults)

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 <u>Appendix 1 of Sheffield Formulary Respiratory System</u> 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 consider step down it appropriate conside

### **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)

< 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#

Montelukast\* for <12

Child 6 months-5 years

4mg OD (chewable

tablet or granules sachet)

Child 6-14 years

5mg OD (chewable tablet)

> If not previously tried or already taking

Child 6-14 years 5ma 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

pivibi pius spacer remains the preferred delivery method for most children under 12 years – <u>prescribe appropriate spacer</u>					
SABA	Very Low dose ICS (Usual starting dose)	Low dose ICS	Low dose ICS/LABA	Medium dose ICS/LABA	See <u>Table c</u> active
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	Refer for specialist care Higher strength products are available but are not licensed < 12 years	ingredients for drug contents of each inhale
Salandi CIC-Fee Salandi Saland	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+			*Dry powder option have been included this table for situations where yo
Age 41	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	may wish to transition a child onto a DPI before the age of 12. An appropriate age to consider a
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	change to DPI is towards the end of primary school/transition to secondary school (ag 11/12)
	<u>-</u>	Inhaler Choice elivery method for most childr MUST ensure they have the app		<ul><li>Prescribe by brand</li><li>Use combination</li></ul>	

- 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)

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<sub>1</sub> 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