Asthma Guidelines 2021

Diagnosis

People with asthma have **shortness of breath, cough, wheeze and chest tightness** variable in duration and intensity with variable airflow obstruction.

Symptoms are often worse at night and early morning and triggered by infections, exercise, allergen exposure, weather or irritants.

Wheeze must be confirmed by a healthcare professional.

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 (for airflow obstruction and reversibility). Reversibility of ≥ 200ml after 400mcg salbutamol (or corticosteroid treatment trials) is supportive and ≥ 400 ml strongly suggestive of asthma. NB 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 plus an increase in volume of 200ml** or more is regarded as a positive test. There is no evidence to support routine use of peak flow monitoring in diagnosis for children.

FeNO (fractional exhaled nitric oxide) testing. Levels ≥ 40ppb in a non-smoker support the presence of airway inflammation. A normal FeNO does not exclude asthma. (**Not currently available in primary care in Rotherham)**

A typical history with documented wheeze, atopic history and no features of other diagnoses would constitute **high probability of asthma** and support a trial of treatment.

Where there is an **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.**

Where asthma unlikely, **low probability of asthma**, pursue other diagnoses and/or refer.

See BTS/SIGN guideline chapter 3 **Diagnosis for further information, SIGN 158, July 2019**

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

Initiate treatment using the Adult and >12 Treatment Algorithm or Children < 12 Algorithm

Adjust treatment by moving up and down the Adult and >12 Treatment Algorithm or Children < 12 Algorithm

Review and manage

Provide a written personalised asthma action plan to monitor control (preferably using PEFR monitoring) appropriate to severity of the symptoms:

- **PEFR < 80% best** – consider increasing ICS (inhaled corticosteroids)
- **PEFR < 60% best** – start oral steroids and seek advice
- **PEFR < 40% best** – seek urgent medical attention

Symptom-based plans are generally preferable for children under 12. Children's asthma action plan

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 and time off work as a result of asthma

Check

- If patient has ever had hospital admissions due to asthma
- Number of salbutamol inhalers patient has issued in last year
- For course of oral steroids/antibiotics in the last 12 months
- For triggers and advise trigger avoidance

Patients who have had more than 6 salbutamol inhalers issued in the last 12 months, need further review and discussion at next medication review.

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

Check spacer use and maintenance. Spacers should be encouraged with MDI (metered dose inhaler) devices

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

Encourage patient to stop smoking and refer to appropriate stop smoking service and offer dietary/exercise advice for overweight patients.

Offer annual flu vaccine and pneumonia vaccine (where appropriate)

Assess and treat associated disease inc. GORD, rhinitis, consider checking for vitamin D deficiency if frequently exacerbating (self-care with over the counter medicines where appropriate)

Adjust treatment by moving up or down the algorithm. Consider step down of treatment if patient well controlled for 3-6 months

Lead Pharmacist for Respiratory, Sheffield CCG in conjunction with specialist respiratory colleagues at STH and SCH, Rotherham CCG.

Control

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.

Refer

Persistent poor control:

- Despite high dose ICS/LABA (long acting β agonist)
- ≥ 12 SABA (short acting β agonist) inhalers in the last 12 months despite primary care review
- More than 2 asthma attacks requiring oral steroids in the last 12 months
- Life-threatening asthma attack

Asthma diagnosis in doubt (red flags/indicators of other diagnoses)

Unexplained restrictive spirometry

Complex comorbidity preventing accurate assessment of asthma control

Suspected occupational asthma

Poor response to treatment

Non acceptance of diagnosis or persistence non-adherence

Unable to tolerate treatment

Poorly controlled asthma in pregnancy

When referring patients:

- Include information about compliance, prescription collection frequency and personal and family history of atopy
- Consider pre referral bloods such as IgE, FBC, U&E's and a chest x-ray
- Explain consent to share records with hospital with patient/carer

Alternative treatments are available in secondary care such as new biologic therapies which can be highly effective for patients with severe uncontrolled asthma

Pregnancy

Please refer to:

BTS/SIGN guideline: Asthma in pregnancy, chapter 12, SIGN 158, July 2019

Acute asthma

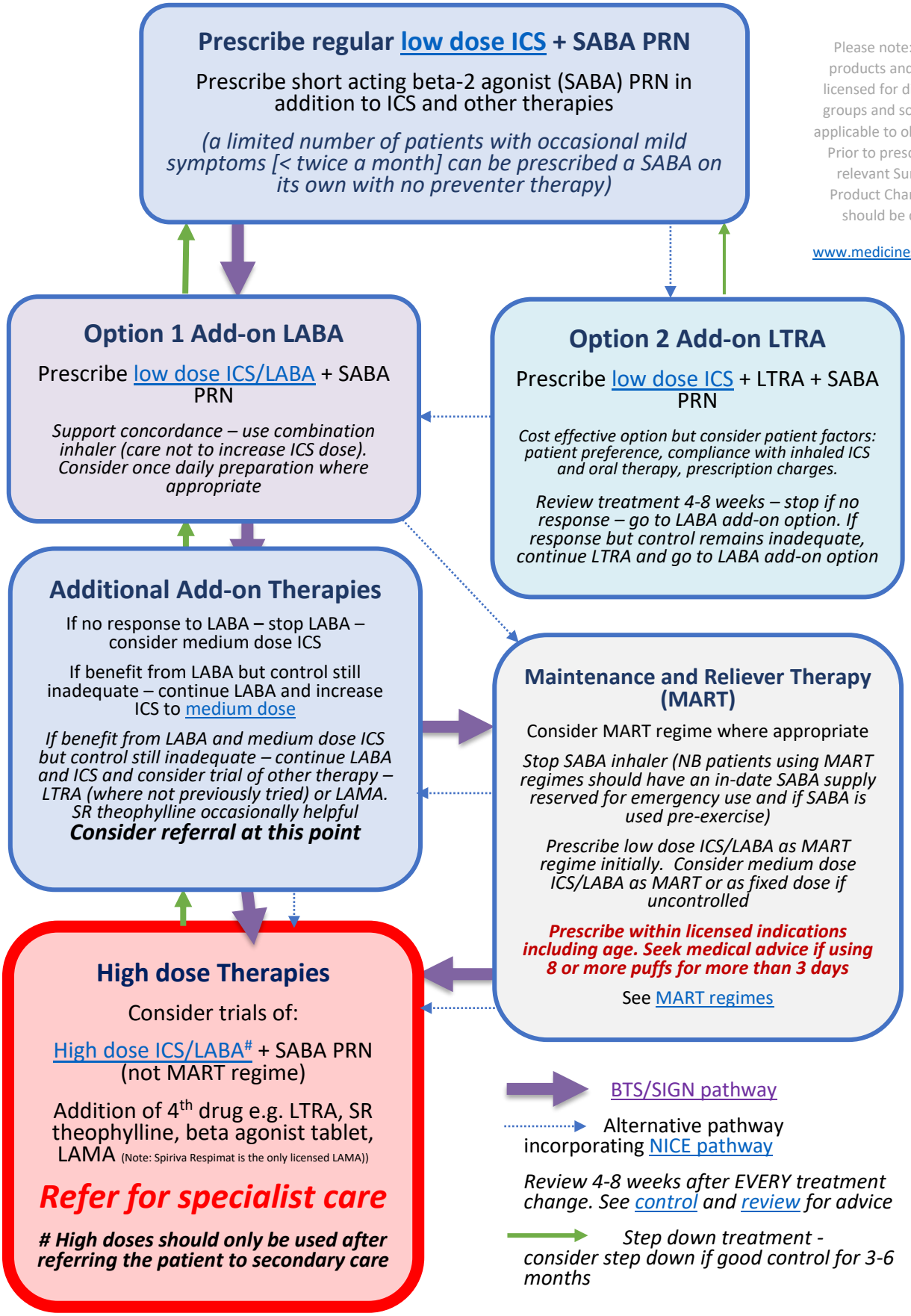
Please refer to:

BTS/SIGN guideline: Management of acute severe asthma in adults in general practice – algorithm page 164, Annex 3, SIGN 158, July 2019

BTS/SIGN guideline: Management of acute asthma in children in general practice – algorithm page 167, Annex 6, SIGN 158, July 2019

All patients should have salbutamol MDI + Volumatic for emergency use

Asthma Treatment Algorithm Adults and Children 12+



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Asthma Treatment Algorithm Children < 12

Prescribe regular very low (paediatric dose) dose ICS + SABA PRN

(or consider LTRA < 5 years if unable to take ICS)

Prescribe short acting Beta-2 agonist (SABA) PRN in addition to ICS and other therapies

(a limited number of patients with occasional mild symptoms [< twice a month] can be prescribed a SABA on its own with no preventer therapy

Initial Add-on

Prescribe very low (paediatric) dose ICS + SABA PRN

PLUS

Children ≥ 5 years – add inhaled LABA or LTRA

Children < 5 years – add LTRA*

Support concordance – use combination inhaler where appropriate (prescribe within licensed indications/ care not to

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

Under 2s – 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

Additional Add-on Therapies (≥ 5 years)

If no response to LABA – stop LABA – increase dose of ICS to low dose

If benefit from LABA but control still inadequate – continue LABA and increase ICS to low dose

If benefit from LABA and low dose ICS but control still inadequate – continue LABA and ICS and consider trial of other therapy – LTRA

High dose Therapies (≥ 5 years)

Consider trials of:

Medium dose # ICS/LABA + SABA PRN

Addition of 4th drug e.g. SR theophylline

Refer for specialist care

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

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

Please note: BTS 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

Prescribing Tips

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 warning card for:

- Patients using prolonged high doses (>1000mcg BDP (beclomethasone dipropionate) or equivalent in adults) including off label high doses and maximum inhaled doses in conjunction with oral corticosteroids
- Patients using ICS plus drugs that inhibit their metabolism e.g. cytochrome p450 inhibitors such as HIV protease inhibitors

Any patient who has been prescribed > 12 salbutamol inhalers in 12 months should be invited in for urgent review

Patients seen in A&E for asthma, need review by GP no later than two weeks after.

All asthmatics discharged from hospital post exacerbation should have a primary care review within 2 working days as per NICE QS 25

Consider fracture risk assessment (DEXA scanning) for asthma patients on high dose inhaled steroids and/or frequently requiring oral steroids

Inhaler Choice

Device choice should be guided by the patient's ability to use the device and other potential issues that may affect compliance e.g. spacer use/once daily vs twice daily dosing.

The choice may be determined by the drug or licensing considerations e.g. age

MDIs should be routinely prescribed with a spacer. This is particularly important for high dose ICS regimes

Combination inhalers are recommended where ICS and LABA are required

Prescribing by brand is recommended to ensure consistency of device supplied

Aim for device consistency across therapy to enhance patient compliance

How to use your inhaler | Asthma UK

MART Regimes

Consider 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

Stop regular SABA inhaler on repeat but ensure patient has in date supply for emergency use/pre exercise

Fostair 100/6 MDI with Aerochamber Plus, 1 puff twice a day (low dose) when required (to a maximum of 8 puffs in 24 hours) age 18+

Symbicort Turbohaler 200/6 1 puff twice a day (low dose) or 2 puffs twice a day (medium dose) and when required (to a maximum of 12 puffs in 24 hours) age 12+

Seek advice if using 8 or more puffs for > 3 days

Careful education of patients is required for this treatment strategy

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 treatment is reduced the patient should have their treatment reviewed within 4-8 weeks

Stepping down should be explained to the patient and the patient's personalised asthma action plan updated accordingly

Table of licensed doses for formulary choice inhaled corticosteroid containing preparations

(Inhalers have been placed according to British Thoracic Society (BTS) ICS dose classification and do not imply direct dose equivalence in every case)

ICS strength (as per BTS/SIGN terminology)		Formulary choice ICS	Licensed Age	Formulary choice ICS/LABA	Licensed Age
Very low dose (paediatric) Starting dose child < 12	**MDI**	Clenil modulite 50 – 2 puffs BD Clenil Modulite 100 - 1 puff BD Flixotide Evohaler 50 - 1 puff BD	2+ 2+ 4+	No licensed combination inhaler – use single ICS plus licensed salmeterol MDI	4+ (Serevent Evohaler) 12+ (Soltel)
	DPI	Pulmicort Turbohaler 100 - 1 puff BD	5+	Symbicort Turbohaler 100 – 1 puff BD	6+
Low dose Starting dose adult and child > 12	**MDI**	Clenil Modulite 100 - 2 puffs BD Flixotide Evohaler 50 - 2 puffs BD Flixotide Evohaler 125 - 1 puff BD	2+ 4+ 4+	Fostair MDI 100/6 - 1 puff BD Sirdupla MDI – no low dose preparation *Seretide Evohaler 50 - 2 puffs BD* [1]	18+ 18+ 4+
	DPI	Pulmicort Turbohaler 100 - 2 puffs BD Pulmicort Turbohaler 200 – 1 puff BD	5+	Symbicort Turbohaler 100/6 – 2 puffs BD Symbicort Turbohaler 200/6 - 1 puff BD Relvar Ellipta 92/22 - 1 puff OD [2] *Seretide Accuhaler 100 – 1 puff BD* [3]	6+ 12+ 12+ 4+
Medium dose	**MDI**	Clenil Modulite 200 - 2 puffs BD Flixotide Evohaler 50 – 4 puff BD Flixotide Evohaler 125 - 2 puffs BD	12+ 4+ 16+	Fostair MDI 100/6 - 2 puffs BD Sirdupla MDI 125/25 - 2 puffs BD *Seretide Evohaler 125/25 – 2 puffs BD* [4]	18+ 18+ 12+
	DPI	Pulmicort Turbohaler 200 - 2 puffs BD	5+	Symbicort Turbohaler 200/6 - 2 puffs BD Symbicort Turbohaler 400/12 - 1 puff BD Relvar Ellipta 92/22 – 1puff OD [2]	12+ 12+ 12+
High dose [5]	**MDI**	Clenil Modulite 250 - 2 puffs BD Flixotide Evohaler 250 – 2 puffs BD	18+ 16+	Fostair MDI 200/6 – 2 puffs BD Sirdupla MDI 250/25 – 2 puffs BD	18+ 18+
	DPI	Pulmicort Turbohaler 400 – 2 puffs BD	12+	Symbicort Turbohaler 400/12 - 2 puffs BD Relvar Ellipta 184/22 – 1 puff OD	18+ 12+

1. All age groups from 4+ (inc adults) requiring low dose ICS/LABA 2. Relvar 92/22 is considered to be low/medium dose ICS 3. Formulary choice age 4-12 years only 4. Formulary choice age 12-17 years only

5. Not for children 12 and under without specialist intervention/care for use in 12-17 years old without specialist intervention.

Always consult the relevant summary of product characteristics to confirm up to date licensing of individual products including age groups. www.medicines.org.uk/emc

For primary care prescribing choose products in a particular ICS strength classification if they are licensed for that age group.