

Barnsley Asthma Guideline for adults - including algorithm and inhaler chart

Symptoms of asthma

Take a structured clinical history checking for: wheeze, cough or breathlessness and any daily or seasonal variation in these symptoms, any triggers that make symptoms worse, a personal or family history of atopic disorders, chest tightness, asthma triggers, diurnal variation (Do not use symptoms or history alone to diagnose asthma without examination or objective tests).

Examination confirming wheeze or other signs of symptoms should be performed by healthcare professional. If symptoms present then treat immediately and perform objective tests either immediately or after acute symptoms are controlled.

Check for occupational asthma;

[algorithm-a-initial-clinical-assessment-for-adults-young-people-and-children-with-suspected-asthma-pdf-4656176749 \(nice.org.uk\)](https://www.nice.org.uk/guidance/algorithm-a-initial-clinical-assessment-for-adults-young-people-and-children-with-suspected-asthma-pdf-4656176749)

A typical clinical assessment including recurrent episodes of symptoms (attacks), wheeze heard by a healthcare professional, historical record of variable airflow obstruction and a positive history of atopy and without any features to suggest an alternative diagnosis has a high probability of asthma.

In patients with a **high probability** of asthma:

- Record the patient as likely to have asthma and commence a carefully monitored initiation of treatment.
- Assess the patient's status with a validated symptom questionnaire ideally corroborated by lung function tests (FEV₁ at clinic visits or by domiciliary serial peak flows to capture times with/without symptoms)
- With a good symptomatic and objective response to treatment, confirm the diagnosis of asthma and record the basis on which the diagnosis was made. If response is poor or equivocal, check inhaler technique and adherence, arrange further tests and consider alternative diagnoses.

Patients who have some, but not all, of the typical features of asthma on an initial structured clinical assessment or who do not respond well to a monitored initiation of treatment have an **intermediate probability** of asthma.

For patients with an **intermediate probability** of asthma:

- Spirometry, with bronchodilator reversibility as appropriate, is the preferred initial test for investigating intermediate probability of asthma in adults.
- In adults and children with an intermediate probability of asthma and airways obstruction identified through spirometry, undertake reversibility tests and/or a monitored initiation of treatment assessing the response to treatment by repeating lung function tests and objective measures of asthma control.

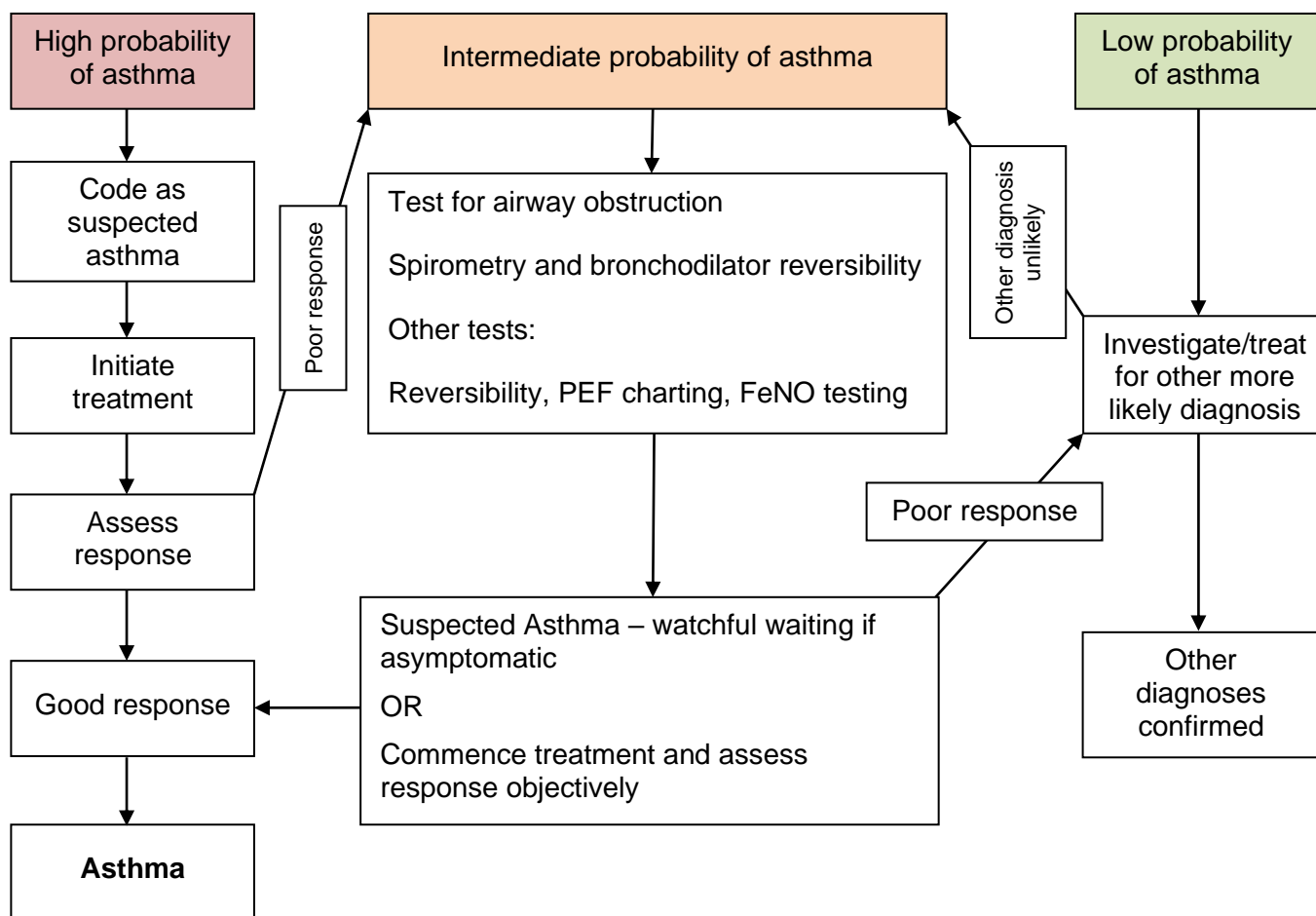
Patients who do not have any of the typical features on initial structured clinical assessment or who have symptoms suggestive of an alternative diagnosis have a **low probability** of asthma. If there is a low probability of asthma and/or an alternative diagnosis is more likely, investigate for the alternative diagnosis reconsidering asthma if the clinical picture changes or an alternative diagnosis is not confirmed.

Diagnostic Algorithm

Presentation with respiratory symptoms: wheeze, cough, breathlessness, chest tightness

Structured Clinical Assessment

- Recurrent episodes of symptoms • symptom variability • absence of symptoms of alternative diagnosis • recorded observation of wheeze • personal history of atopy • historical record of variable PEF or FEV1



Objective tests

- Fractional Exhaled Nitric Oxide (FeNO) – Regard a FeNO level of over 40 parts per billion as a positive test for a non-smoker
- Spirometry – Obstructive spirometry if FEV1/FVC less than 70% can be considered a positive test for airway obstruction.
- Offer a Bronchodilator Reversibility (BDR) test with obstructive spirometry (FEV1/FVC ratio less than 70%). Regard an improvement in FEV1 of 12% or more, together with an increase in volume of 200 ml or more, as a positive test
- Peak Expiratory Flow Variability - Monitor peak flow variability for 2 to 4 weeks in adults if BDR and/or FeNO unavailable or not conclusive. Regard a value of more than 20% variability as a positive test.

For all objective tests a negative result does not exclude asthma.

[algorithm-c-objective-tests-for-asthma-in-adults-aged-17-and-over-pdf-4656176751 \(nice.org.uk\)](https://www.nice.org.uk/guidance/algorithm-c-objective-tests-for-asthma-in-adults-aged-17-and-over-pdf-4656176751)

Monitoring/Management

Offer an asthma self-management programme, comprising a written personalised action plan and education. This should include approaches for minimising indoor and outdoor pollution exposure.

See NICE guidance on personalized action plans.

See [adult-asthma-action-plan.pdf](#) for example.

Monitor asthma control at every review by using The Royal College of Physicians 'Three Questions'.

Poor control indicated by:

- Daytime symptoms ≥ 3 times a week
- Night time awakening ≥ 1 per week
- Use of reliever ≥ 3 times per week
- Asthma attack ≥ 1 per year

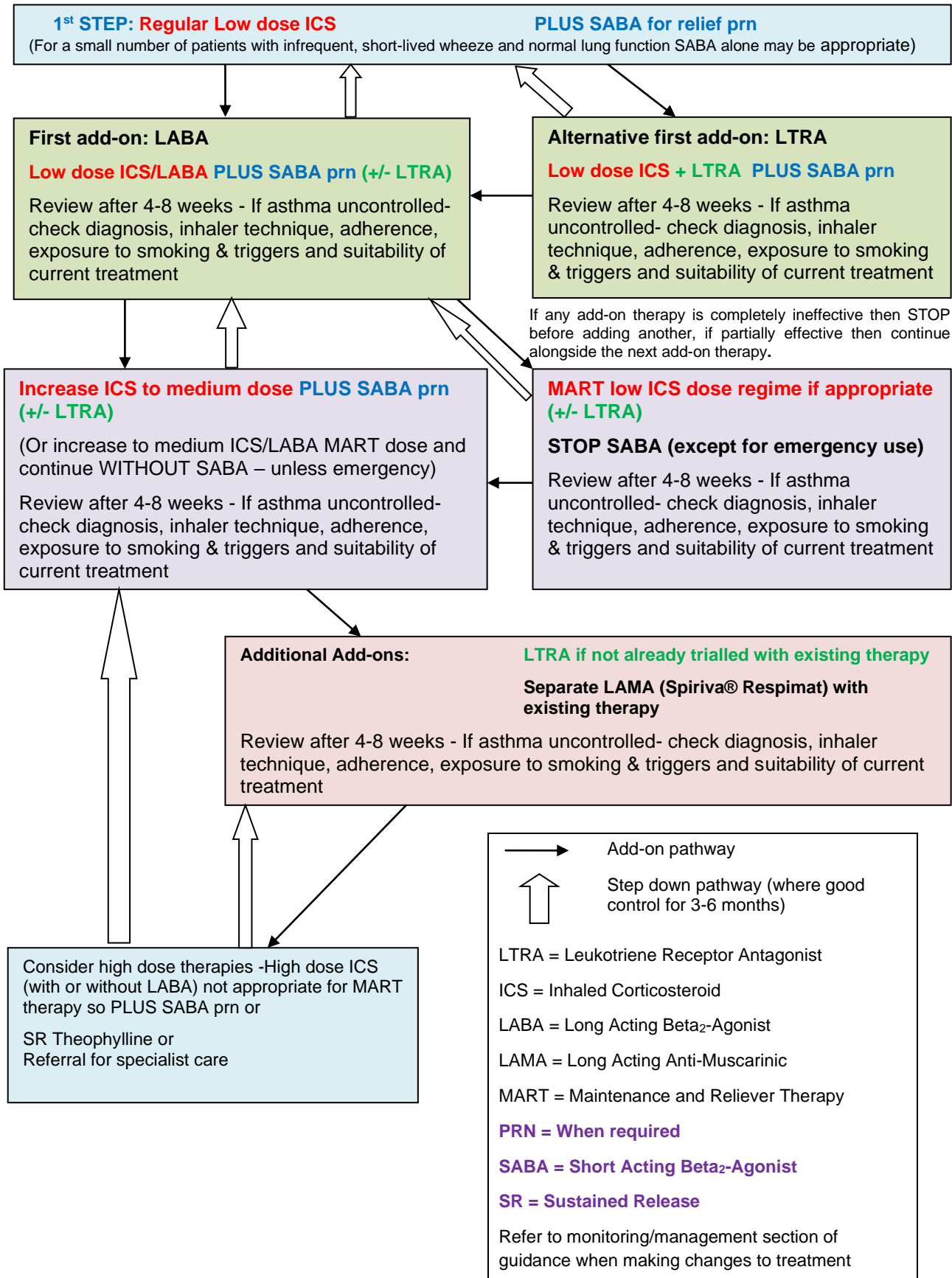
Positive responses should prompt further assessment such as confirming adherence to prescribed treatment, reviewing inhaler technique using in-check dial (inhaler technique should be checked at every review), reviewing if treatment needs to be changed, asking about occupational asthma, consider using a validated questionnaire such as the Asthma Control Questionnaire or Asthma Control Test, consider using spirometry or peak flow variability testing.

Check for hospital admissions due to asthma, courses of antibiotics or oral steroids, check for triggers and discuss trigger avoidance, encourage stop smoking, vaccination and advise on exercise/dietary advice for overweight patients, minimise number of inhaler devices and encourage spacer use with MDI, see videos to aid inhaler technique check [How to use your inhaler | Asthma UK](#). Check for Steroid Emergency Card where appropriate both for patients using oral corticosteroids and for high dose inhaled corticosteroids. Pharmacological review of treatments at each review. Address factors that increase the risk of Asthma attack and poor control such as steroid use in the last twelve months and poor adherence to Inhaled Corticosteroids.

Asthma Treatment Algorithm for Adults

After diagnosis based on NICE and/or BTS/SIGN guidelines criteria:

Prescribe by BRAND NAME to ensure consistent supply of inhaler.



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	Medium dose ICS/LABA	High dose ICS/LABA
MDI	Salamol CFC-free MDI 1-2puffs prn 200 dose £1.46 1361gCO2eq	Clenil Modulite 100mcg 2puffs bd 200 dose £7.42 12210gCO2eq	Combisal 50/25 2puffs bd 120 dose £13.50 19620gCO2eq	Airflusal 125/25 2puffs bd 120 dose £16.42 19620gCO2eq	Airflusal 250/25 2puffs bd 120 dose £20.52 19620gCO2eq
Extra fine particle MDI	Salamol Easi-breathe 200d 1-2puffs prn £6.30 not extra fine 1361gCO2eq	Kelhale 100mcg 1puffs bd 200 dose £5.20 12210gCO2eq	Fostair 100/6 1-2puffs bd or MART 120 dose £29.32 19620gCO2eq	Fostair 100/6 2puffs bd or MART 120 dose £29.32 19620gCO2eq	Fostair 200/6 2puffs bd 120 dose £29.32 19620gCO2eq
DPI	Easyhaler Salbutamol 100mcg 1-2 puffs prn 200 dose £3.31 Not extra fine particle	Easyhaler Budesonide 100mcg 2puffs bd 200 dose £8.86 Not extra fine particle	Fobumix Easyhaler 160/4.5 1puffs bd or MART 60 dose £10.75 242gCO2eq	Fobumix Easyhaler 160/4.5 2puffs bd or MART 120 dose £21.50 484gCO2eq	Fobumix Easyhaler 320/9 2puffs bd 2 x 60 dose £43.00 484gCO2eq
Extra fine DPI	150gCO2e per 28 days based on 1puff daily	195gCO2eq	Fostair NEXThaler 100/6 1-2puffs bd or MART 120 dose £29.32 2250gCO2eq	Fostair NEXThaler 100/6 2puffs bd or MART 120 dose £29.32 2250gCO2eq	Fostair NEXThaler 200/6 2puffs bd 120 dose £29.32 2250gCO2eq
Once daily DPI	Ventolin Accuhaler 200mcg 1puff prn 60 dose £3.60 280gCO2eq	Flixotide Accuhaler 100mcg 1puff bd 60 dose £8.00 Not once daily 1125gCO2eq	Relvar Ellipta 92/22 1puff od 30 dose £22 525 gCO2eq	Relvar Ellipta 184/22 1puff od 30 dose £29.50 525 gCO2eq	

Notes

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 \(nice.org.uk\)](https://www.nice.org.uk/patient-decision-aid/inhalers-for-asthma)

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.

Other treatment considerations:

Control Acid reflux,

Treat vitamin D deficiency,

Treat allergic Rhinitis

LTRA option is Montelukast 10mg tablets, One daily. Theophylline option is Uniphyllin Continus – various strengths.

LAMA option is Spiriva Respimat 2.5mcg 2puffs od, prescribe refills issuing inhaler only every six months

Costs are for 28 days treatment, reference Mims online May 2021, Carbon footprint shown in gCO2eq per 28 days.