NHS
Suffolk and
North East Essex
Integrated Care Board

Management of asthma in children up to aged 2-17 years old

Diagnosis

- Consider typical symptoms – wheeze, sob, cough, esp. at night, triggers, atopy and variability
- Consider comorbidities contributing to symptoms (rhinitis, bronchiectasis, GORD, obesity, OS)
- History taking – consider family history, allergies, eczema
- Document audible wheeze on auscultation
- Consider air pollution – damp, mould, wood burner, pets, cigarette smoke. For housing advice and support click here for Suffolk and here for Essex
- If clinical picture is suggestive, consider the need for confirmation of evidence including:
    - Elevated FeNO measurement (≥ 35ppb suggests eosinophilic airway inflammation)
    - If available Spirometry with reversibility (though spirometry is commonly normal). Diagnose asthma if reversibility is greater than 12% from baseline or greater than 200 ml (or > 10% of predicted normal).
    - Serial PEF (esp. >20% diurnal variability, though generally only present in 30% of asthmatics). 2-week diary.
    - Total IgE count is ≥ 0.4 to look for raised eosinophils or raised specific IgE to House dust mite- if clinically suggestive of asthma but not confirmed by PEF

  Refer to paediatrics if diagnostic uncertainty remains after all other investigations.
- Assess asthma control using ACT Asthma Control Test
- Record evidence in patient notes why an asthma diagnosis was made. For children under 5, code as suspected asthma until at an age when diagnostic testing can be considered.

Seek specialist advice or referral if:

- Unexpected clinical findings (e.g. focal signs, abnormal voice or cry, dysphagia, inspiratory stridor)
- Poor response to monitored initiation of asthma treatment
- Symptoms present from birth or perinatal lung problem
- Severe upper respiratory tract infection
- Patient anxiety or need for reassurance
- Family history of unusual chest disease
- Severe/life-threatening asthma attack
- Persistent wet or productive cough
- Excessive vomiting or posseting
- Diagnosis is unclear
- Failure to thrive
- Nasal polyps

Stepping UP – Is this an acute exacerbation? Review severity: Severity & Management

Think **TTT** first, then move up to improve control if needed. Before initiating a new medication or stepping up, practitioners should check:

- Concordance with existing **Therapy** -ensure adequate education, training and parental supervision
- Inhaler **Technique** – also consider spacer mouthpiece/mask.
- **Trigger** factors – see 'Diagnosis' air pollution

If not getting expected response, confirm diagnosis. Seek advice in preference to continually escalating treatment.
After stepping up, it is recommended to review patient in 6-8 weeks and safety net sooner review if symptoms worsen
Any inhaler change should happen via a face-to-face appointment, discussion, ensuring competent use

Stepping DOWN – Move down to find and maintain lowest controlling therapy

- Complete control needs to be maintained for 12 weeks before stepping down
- ICS – Reduce ICS dose by 25 – 50%
- After stepping down, review in 12 weeks: step patient up again if symptomatic during this period
- Stepping down before 12 weeks of control can lead to exacerbations and hospital admissions

Spacer devices

- A spacer device must be given to all patients using an MDI
- Prescribe a spacer device that is compatible with the MDI
- Consider mask and mouthpiece. Correct sized mask. From aged 3-4 years old spacers can often be used without a mask.
- They should be cleaned monthly by taking it apart and washing in a mild detergent, before leaving to air-dry, the mouthpiece should be wiped clean before using
- They should be replaced every 12 months or sooner if signs of deterioration.

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Pharmacological Management

- Any inhaler initiation or change should happen via a face to face, appointment, discussion and ensure competent use.
- Children do not need to be started at step 1; they should be started on appropriate step based on their symptoms.
- If moving to step 3, advice and guidance pathway can be used to discuss if appropriate and if formal referral is necessary.

Children under 5 years of age

Code as suspected asthma until testing can confirm diagnosis

	Symptoms less than 3 times a week	Symptoms most days or waking with asthma once a week or more	Daily symptoms or waking with asthma once a week or more	Seek Specialist Care Management
Asthma regimen MDI	**Clenil Modulite® 100mcg MDI** 1 puffs bd **Salamol 100mcg MDI**	**Clenil Modulite® 100mcg MDI** 2 puffs bd	**Montelukast 4mg ON (6months – 5 years)** **Available as chewable tablets and granules. Consider granules if patient not able to manage tablets.**	

Trialling Clenil in <5yrs

Offer an 8–12-week trial of ICS then stop treatment and monitor the child's symptoms.

- If symptoms did not resolve during the trial period, consider an alternative diagnosis.
- If the symptoms resolved, then reoccurred within 4 weeks of stopping restart ICS
- If the symptoms resolved, then reoccurred after 4 weeks without, repeat 8–12-week trial.

Children aged 5-11 years of age

Dry powder inhalers (DPIs)

- Consider in patients >10 years.
- Ensure patients can achieve the required inspiratory flow rate using a training device or placebo inhalers.

	Symptoms less than 3 times a week	Symptoms most days or waking with asthma once a week or more	Daily symptoms or waking with asthma once a week or more	Daily symptoms or waking with asthma once a week or more	Seek Specialist Care Management
Asthma regimen DPI	**Budesonide Easyhaler® 100mcg DPI** 1puff bd **Salbutamol Easyhaler® 100mcg DPI**	**Budesonide Easyhaler® 100mcg DPI** 2 puffs bd	**Consider adding** **Montelukast tablets 5mg ON (6-11y)**	**Symbicort® Turbohaler 100/6 DPI** 1 puff bd	
MDI	**Clenil Modulite® 100mcg MDI** 1 puff bd **Salamol 100mcg MDI**	**Clenil Modulite® 100mcg MDI** 2 puffs bd	**Montelukast Chewable tablets 4mg ON (5y)**	**Combisal® 25/50 MDI** 2 puffs bd	

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Children aged 12-17 years of age

- **There are 2 options for asthma treatment: The NICE AIR/MART regimen or the traditional regimen which involves separate relievers and preventers for aged over 12 years**
- **Clinicians should initiate new patients over 12 years based on the 2024 NICE AIR/MART guidance if appropriate.**
- **To reduce carbon footprint dry powder inhalers (DPIs) are preferred over metered dose inhalers (MDIs)if suitable for the patient. In AIR/MART, all inhalers are DPIs**
- **Fostair NEXThaler can be considered in 16–17-year-olds, it is not currently licenced for this age group**

	Symptoms less than 3 times a week	Symptoms most days or waking with asthma once a week or more	Daily symptoms or waking with asthma once a week or more and where low dose MART is not sufficient	Daily symptoms or waking with asthma once a week or more where moderate dose MART is not sufficient	Seek Specialist Care management
AIR (anti-inflammatory reliever) **MART** (maintenance and reliever therapy) regimens **ICS/Formoterol**	**AIR** **As required in response to symptoms** **Symbicort® 200/6 DPI** **DuoResp Spiromax® 160/4.5 DPI** **Fobumix® 160/4.5 Easyhaler DPI**	**Low dose MART** **1 PUFF BD+PRN** **Symbicort® 200/6 DPI** Max 8-12 puff/day and 6 puffs per episode **DuoResp Spiromax® 160/4.5 DPI** Max 8-12 puff/day and 6 puffs per episode **Fobumix® 160/4.5 Easyhaler DPI** Max 8-12 puff/day and 6 puffs per episode	**Moderate Dose MART** **2 PUFFS BD+PRN** **Symbicort® 200/6 DPI** Max 8-12 puff/day and 6 puffs per episode **DuoResp Spiromax ® 160/4.5 DPI** Max 8-12 puff/day and 6 puffs per episode **Fobumix® 160/4.5 Easyhaler DPI** Max 8-12 puff/day and 6 puffs per episode ▲*Provide steroid emergency card* here	**Check Blood eosinophil count + FeNO if access** **If within normal limits Consider adding** **Montelukast tablets 10mg ON (15-17y) 5mg ON (12-14y)** **+/- Spiriva Respimat® 2 puffs daily** If **either** are raised **refer to specialist care**	
Traditional Asthma regimen DPI	**Budesonide Easyhaler® 100mcg DPI** 1 puff bd **No asthma patient should be on a blue reliever inhaler alone (NICE 2024)** **Salbutamol Easyhaler® 100mcg DPI**	**Budesonide Easyhaler® 100mcg DPI** 2 puffs bd	**Symbicort® 200/6 DPI** 1-2 puffs bd **DuoResp Spiromax® 160/4.5 DPI** 1-2 puffs bd **Fobumix® 160/4.5 Easyhaler DPI** 1-2 puffs bd	**Consider adding** **Montelukast tablets 10mg ON (15-17) 5mg ON (12-14)**	**Seek Specialist Care Management**
MDI	**Clenil Modulite® 100mcg MDI** 1 puff bd **Salamol 100mcg MDI**	**Clenil Modulite® 100mcg MDI** 2 puffs bd	**Combisal® 25/125 MDI** 1-2 puffs bd		

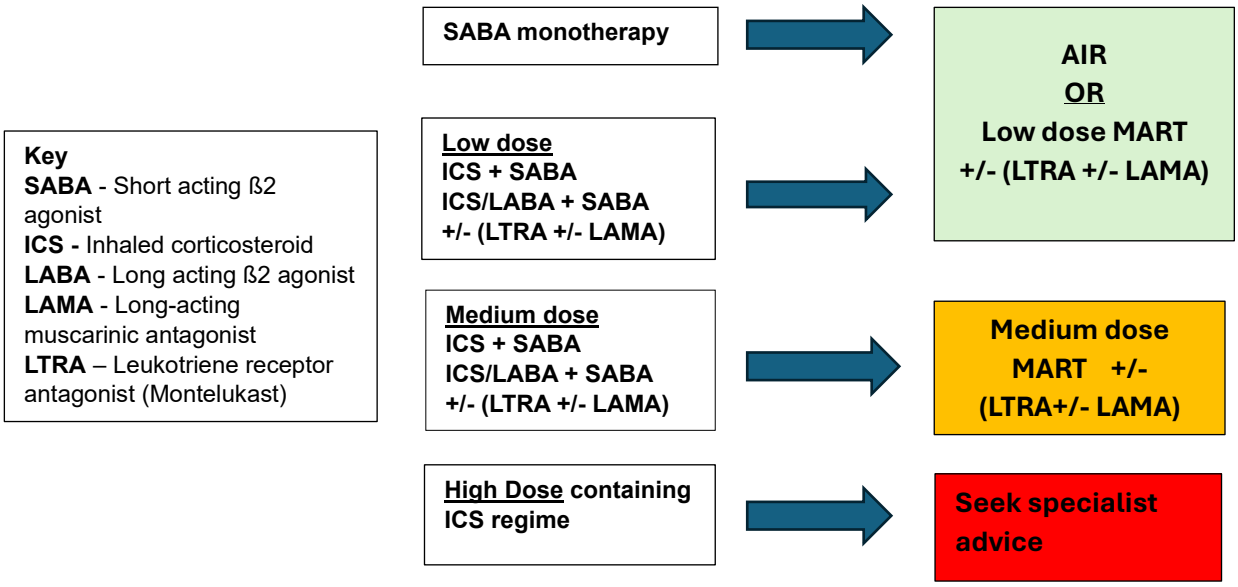
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Converting from traditional asthma regimen to AIR/MART regimen for children aged 12 years and over

If patients are not symptomatic and are happy on their current treatment pathway it is not recommended that they are switched unless they are on SABA monotherapy which must be switched. Any inhaler change should happen via a face-to-face appointment.

Please see here for inhaled corticosteroids doses



Maintenance and Reliever Therapy (MART)/ SABA free pathway

- A single inhaler both ICS and a fast-acting LABA, is used for both daily maintenance therapy and the relief of symptoms as required.
- AIR/MART is recommended and licenced for newly diagnosed asthmatics > 12 years and those whose symptoms are uncontrolled on maintenance only treatment with low dose ICS+LABA using SABA as reliever.
- MART can be considered in patients 10yrs or above but currently no inhalers are licenced for this age group.
- Ensure the patient can understand and comply with the MART regimen
- All MART inhalers in the guidance are DPI so a child must be able to use a DPI.
- Ensure the correct number of inhalers are prescribed as they will be using this for maintenance and reliever
- **A separate SABA inhaler should not be prescribed if a patient is on AIR/MART regimen**
- Ensure patient is educated around this regimen (Asthma + Lung UK)

Salbutamol

- **Patients on an AIR/MART regimen do not require a salbutamol inhaler**.
- Not recommended to add salbutamol to repeat prescriptions so use can be monitored.
- Ensure patients requesting more than 3 inhalers (not including multiple issues for school/home) in 12 months are reviewed.
- If multiple salbutamol inhalers are issued, please document reason in patient notes.
- If a patient is using a DPI preventer inhaler, consider DPI salbutamol as this uses the same technique.

Montelukast

- Counsel families on potential side effects including sleep disturbance, behaviour/mood change and abdominal pain.
- If sleep disturbance occurs but symptom control obtained, consider changing to AM administration

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Asthma reviews

- All patients should receive education about their condition ideally at diagnosis
- All children should receive annual reviews and growth should be monitored.
- Assess risk of exacerbations – factors to consider:
  - Previous exacerbations
  - Overuse of SABA (3 or more inhalers per year)
  - Adherence to preventers
  - Comorbidities: rhinitis, BMI, psychiatric illness
  - Impaired lung function
  - Evidence for uncontrolled inflammation (raised FeNO, and blood eosinophils)
- Every patient needs a Personalised Asthma Action Plan (PAAP) - found here
- Assess symptom control ACT Asthma Control Test
- Review exacerbation rate, prednisolone courses, admissions and time off work/school
- Review SABA reliance (consider AIR or MART)
- Check PEF
- Inhalers
  - Check technique - how inhaler technique video here
  - Prescribe by brand to ensure device continuation.
  - Review the environmental impact, favouring DPIs and using Salamol MDI as preferred MDI SABA
  - Ensure device consistency across therapy to enhance adherence
- Consider stepping asthma therapy **down** after at least 12 weeks of good asthma control.
- If asthma control is poor:
  - Recheck diagnosis
  - Check adherence with therapy, inhaler technique and smoking status
  - Review asthma triggers especially environmental factors, damp and mould, occupation
  - Check FeNO, eosinophil count (if high check IgE consider secondary care referral)
  - Consider comorbidities:
    - Rhinitis
    - BMI and Obstructive Sleep apnoea
    - GORD
    - Bronchiectasis/ bacterial infection
    - Dysfunctional pattern of breathing
- Offer smoking cessation advice/support (including parents who smoke) and weight loss support. Feel Good Suffolk access here and Essex Wellbeing Service access here
- Encourage flu vaccination
- Any patients who have had 2 oral steroid courses in 1 year should be referred to secondary care for review.
- All asthmatics discharged from hospital post exacerbation should be seen by a GP/practice asthma nurse **within 1 week**

Remission

If no asthma symptoms and patient is on minimal dose for over 12 months. Consider the following:

- 12 years and older - move to AIR
- 5 to 12 years stop medication and arrange objective testing if symptoms recur
- under 5 years stop the medication

Environmental Considerations/Greener prescribing

The NHS long-term plan proposed a 50% reduction in the greenhouse gas emissions from inhalers by 2030 through reducing use of MDIs.

- A DPI should be favoured if it is suitable for the patient. The choice should be made on an individual basis between the clinician and patient.
- We do not advocate 'blanket switching' of patients from MDIs to DPIs.
- The favoured salbutamol MDI is Salamol, due to its relatively low carbon footprint compared to other preparations.
- Patients should be encouraged to return inhalers to their pharmacy for incineration More carbon emissions are released when inhalers, even empty ones, are disposed of in a landfill site compared to incineration.

For further information on lower carbon impact see further resources here