North East London (NEL) Primary Care Children and Young People (CYPs) Asthma Prescribing Guidance

This policy will impact on:	NHS North East London primary care clinicians
Approved by:	North East London Formulary and Pathways Group (FPG)
Ratified by:	NHS North East London's (NEL) System Prescribing and Medicines Optimisation (SyPMO) Board
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Review date:	30th September 2028 (or sooner if required)

Revision history

Version	Date	Change
2.1	November 2025	Updated to reflect licensing change of Symbicort Turbohaler 100/6 in children aged 6–11 years.

Contents:

Abbreviations	
ACT	Asthma Control Test
AIR	Anti-inflammatory Reliever
BD	Twice Daily
DPI	Dry Powder Inhaler
FeNO	Fractional Exhaled Nitric Oxide
ICS	Inhaled corticosteroid
LAMA	Long-acting muscarinic antagonist
LABA	Long-acting beta 2 agonist
MART	Maintenance and Reliver Therapy
Mcg	Micrograms
MDI	Metered Dose Inhaler
PAAP	Personalised asthma action plan
SABA	Short acting beta 2 agonist

The inhaler choice is not limited to the illustrated treatment algorithms below and a broader choice is available on the Respiratory Chapter in the Medicines Optimisation NEL Portal as well as on pg. 16-25 of this guidance.

NEL Primary care management of asthma in children aged under 5 (Adapted from **BTS, NICE and SIGN guideline on asthma**)

NHS North East London

Take into account and try to address the possible reasons for uncontrolled asthma before starting or adjusting medicines for asthma. For example: alternative diagnoses or comorbidities; suboptimal adherence; suboptimal inhaler technique; passive smoking (including e-cigarettes); seasonal factors; environmental factors (such as air pollution and indoor mould exposure)

Symptom relief

Maintenance therapy

Children under 5 with suspected asthma and symptoms indicating need for maintenance therapy or severe acute episodes of difficulty breathing and wheeze

Consider 8-to-12-week trial of twice daily paediatric low-dose ICS + SABA → *__MDI__ Soprobec® 50mcg OR Clenil® 50mcg Two puffs twice a day — With a SABA

*__All MDIs should be prescribed with an age-appropriate spacer device with mask.__

If symptoms do not resolve during the trial

Check inhaler technique and adherence, whether there is an environmental source of their symptoms and review if an alternative diagnosis is likely

Refer the child to a specialist in asthma care if none of these explain treatment failure

If symptoms resolve during the trial

Consider stopping ICS and SABA treatment after 8 to 12 weeks and review symptoms after a further 3 months

If symptoms recur after review or acute episode requires systemic corticosteroids or hospitalisation

If Asthma is uncontrolled

Restart regular ICS. Begin at a paediatric low dose and titrate up to a paediatric moderate dose if needed

1. Paediatric low-dose ICS - *__MDI__ Soprobec® 50mcg OR Clenil® 50mcg Two puffs twice a day
2. Paediatric moderate-dose ICS - *__MDI__ Soprobec® 100mcg OR Clenil® 100mcg Two puffs twice a day

With a SABA

If Asthma is uncontrolled

Consider a further trial without treatment after reviewing the child within 12 months

Consider an LTRA in addition to the ICS for a trial of 8 to 12 weeks, then stop if ineffective or side effects → *__MDI__ Soprobec® 100mcg OR Clenil® 100mcg Two puffs twice a day **+ LTRA** – Montelukast 4mg once daily, in the evening — With a SABA

Stop the LTRA and refer the child to a specialist in asthma care for further investigation and management

Management of Asthma - A stepwise approach aims to stop symptoms quickly and to improve peak flow. Treatment should be started at the level most appropriate to initial severity of asthma. The aim is to achieve early control and to maintain it by stepping up treatment as necessary and decreasing treatment when control is good. Possible reasons for uncontrolled asthma (such as alternative diagnoses or co-morbidities, suboptimal adherence or inhaler technique, active or passive smoking, and psychosocial, seasonal, or environmental factors) should be taken into account or addressed before starting or adjusting treatment. The response should be reviewed 8 to 12 weeks after starting or adjusting asthma treatment.

Uncontrolled asthma: Any exacerbation requiring oral corticosteroids **or** frequent regular symptoms (such as using reliever inhaler 3 or more days a week or night-time waking 1 or more times a week)

MDI, metered dose inhaler; **ICS**, inhaled corticosteroid; **LTRA**, leukotriene receptor antagonist; **SABA**, short-acting beta$_2$ agonist.

NEL Primary care management of asthma in children aged 5 to 11 years (Adapted from BTS, NICE and SIGN guideline on asthma)

NHS North East London

Consider and try to address the possible reasons for uncontrolled asthma before starting or adjusting medicines for asthma.
For example: alternative diagnoses or comorbidities; suboptimal adherence; suboptimal inhaler technique; active or passive smoking (including e-cigarettes); psychosocial factors; seasonal factors; environmental factors (such as air pollution and indoor mould exposure)

Symptom relief
MART
Maintenance therapy

Newly diagnosed asthma in children aged 5 to 11 years

Offer twice-daily paediatric low-dose ICS → **MDI** Soprobec® 50mcg OR Clenil® 50mcg Two Puffs twice daily → With a SABA

If Asthma is uncontrolled

Consider MART regimen

*MART via MDI is not licensed for children aged 5–11, and use should only be considered by healthcare professionals trained to Tier 3 level or above per the National Capabilities Framework. Any patients on a MART regime should have corresponding personalised asthma action plan (PAAP). This plan should outline the number of doses they can have the maximum dose they can have at any one time and the maximum total dose they can have in a 24-hour period. Advise to seek an urgent medical review if they are regularly using close to their maximum doses

Prescribe a spacer (without mask) annually with all MDIs. Reinforce inhaler technique at every review

Dry Powder Inhaler (DPI) Suitability in Children
DPI devices should not be considered for younger children due to the requirement for a deep and fast inspiratory effort, which they are often unable to achieve.

In older children, DPI devices may be considered only after:

- A formal assessment confirms the child can generate sufficient inspiratory flow (e.g. using an In-Check™ device).
- The child demonstrates correct inhaler technique with the specific DPI device.
- A shared decision-making consultation is held with the child and their parent/carer to ensure understanding and agreement.
- MART Licensed from 6years - **DPI** Symbicort® 100/6 Turbohaler One puff twice daily (maintenance) + Two puffs for relief (maximum 8 puff in total/24hrs, max 4 at any one time)

YES

Consider paediatric low-dose MART*

MDI Symbicort® 100mcg/3mcg
One puff twice daily (maintenance)
+ Two puffs for relief (maximum 8 puff in total/24hrs, max 4 at any one time)

If Asthma is uncontrolled

Consider increasing to paediatric moderate-dose MART*

MDI Symbicort® 100mcg/3mcg
Two puff twice daily (maintenance)
+ Two puffs for relief (maximum 8 puff in total/24hrs, max 4 at any one time)

If Asthma is uncontrolled

There is no role for the use of SABA in a MART PAAP. The one exception to this is if the child/young person is in a situation where their MART inhaler is not available (e.g. in school) treatment should be with SABA in the conventional way

NO

Consider adding an LTRA to twice daily paediatric low-dose ICS for a trial period of 8 to 12 weeks. Stop if ineffective or side effects → With a SABA → **LTRA** 5yrs Montelukast 4mg Once in the evening, 6-11yrs Montelukast 5mg Once in the evening

If Asthma is uncontrolled

Offer twice daily paediatric low-dose ICS/LABA combination (with or without an LTRA) → **MDI** Combisal® 50mcg/25mcg or Flutiform® 50mcg/5mcg One puff twice daily → With a SABA

If Asthma is uncontrolled

Offer twice daily paediatric moderate-dose ICS/LABA combination (with or without an LTRA) → **MDI** Combisal® 50mcg/25mcg or Flutiform® 50mcg/5mcg Two puffs twice daily → With a SABA

If Asthma is uncontrolled

Refer the child to a specialist in asthma care

Management of Asthma - A stepwise approach aims to stop symptoms quickly and to improve peak flow. Treatment should be started at the level most appropriate to initial severity of asthma. The aim is to achieve early control and to maintain it by stepping up treatment as necessary and decreasing treatment when control is good. Possible reasons for uncontrolled asthma (such as alternative diagnoses or co-morbidities, suboptimal adherence or inhaler technique, active or passive smoking, and psychosocial, seasonal, or environmental factors) should be taken into account or addressed before starting or adjusting treatment. The response should be reviewed 8 to 12 weeks after starting or adjusting asthma treatment.

Uncontrolled asthma: Any exacerbation requiring oral corticosteroids or frequent regular symptoms (such as using reliever inhaler 3 or more days a week or night-time waking 1 or more times a week)

MDI, metered dose inhaler; **DPI**, dry powdered inhaler; **ICS**, inhaled corticosteroid; **LABA**, long-acting beta$_2$ agonist; **LTRA**, leukotriene receptor antagonist; **MART**, maintenance and reliever therapy (using ICS/formoterol combination inhalers); **SABA**, short-acting beta$_2$ agonist.

NEL Primary care management of asthma in Adolescents aged 12 to 17 years

(Adapted from **BTS, NICE and SIGN guideline on asthma)**

NHS North East London

Consider and try to address the possible reasons for uncontrolled asthma before starting or adjusting medicines for asthma.
For example: alternative diagnoses or comorbidities; suboptimal adherence; suboptimal inhaler technique; active or passive smoking (including e-cigarettes); psychosocial factors; seasonal factors; environmental factors (such as air pollution and indoor mould exposure)

Symptom relief
MART
Maintenance therapy

Existing diagnosis of asthma on the treatment pathway recommended by previous NICE and BTS/SIGN guidelines

When changing from low- or Moderate-dose ICS (or ICS/LABA combination inhaler) plus supplementary therapy to MART, consider whether to stop or continue the supplementary therapy based on the degree of benefit achieved when first introduced

SABA only

With a SABA — If asthma is uncontrolled on low-dose ICS; low-dose ICS/LABA; low-dose ICS plus LTRA; or low-dose ICS/LABA plus LTRA

Consider

With a SABA — If asthma is uncontrolled on moderate-dose ICS; moderate-dose ICS/LABA; moderate-dose ICS plus LTRA and/or LAMA; moderate-dose ICS/LABA plus LTRA and/or LAMA

Consider

If asthma is uncontrolled on high-dose ICS

Refer a specialist in asthma care

Newly diagnosed asthma in adolescents aged 12 to 17

Offer low-dose ICS/formoterol combination inhaler to be taken as needed (AIR therapy)

MDI *Symbicort® 100/3 Two puffs when required

DPI Symbicort® 200/6 or DuoResp Spiromax® 160/4.5 One puff when required

If highly symptomatic or there are severe exacerbations, offer low-dose MART

If Asthma is controlled, consider stepping down

If Asthma is uncontrolled, offer

Low-dose MART

MDI Symbicort® 100/3 Two puffs once or twice daily (maintenance)
+ Two Puffs for symptom relief, max 24 in one day, max 12 at any one time

DPI Symbicort® 100/6 Turbohaler One puff twice daily (maintenance) or Symbicort® 200/6 Turbohaler or Duoresp® Spiromax 160/4.5 One Puff once or twice daily (maintenance)

+ One Puff for symptom relief, max 12 in one day, max 6 at any one time

If Asthma is uncontrolled, offer

Moderate-dose MART

MDI Symbicort® 100/3 Four puffs twice daily (maintenance)
+ Two Puffs for symptom relief, max 24 in one day, max 12 at any one time

DPI Symbicort® 200/6 Turbohaler or Duoresp® Spiromax 160/4.5 Two Puffs twice daily (maintenance)
+ One Puff for symptom relief, max 12 in one day, max 6 at any one time

If Asthma is uncontrolled, despite good adherence

Check FeNO level, if available, and blood eosinophil count

If either is raised → **Refer to a specialist in asthma care**

If neither is raised

Consider a trial of either LTRA or LAMA used in addition to moderate-dose MART for 8 to 12 weeks unless there are side effects. At the end of the trial:
- if asthma is controlled, continue the treatment
- if control has improved but is still inadequate, continue the treatment and start a trial of the other medicine (LTRA or LAMA)
- if control has not improved, stop the LTRA or LAMA and start a trial of the alternative medicine (LTRA or LAMA

If Asthma is uncontrolled,

SMI Spiriva Respimat 2.5mcg Two puffs once daily
LTRA 12-14yrs Montelukast 5mg Once in the evening, 15-17yrs Montelukast 10mg Once in the evening

Any patients on an AIR or MART regime should have corresponding personalised asthma action plan (PAAP).
This plan should outline the number of doses they can have the maximum dose they can have at any one time and the maximum total dose they can have in a 24-hour period. Patients should be advised to seek an urgent medical review if they are regularly using close to their maximum doses.

There is no role for the use of SABA in an AIR or MART PAAP. The one exception to this is if the child/young person is in a situation where their MART inhaler is not available (e.g. in school) treatment should be with SABA in the conventional way

Prescribe a spacer (without mask) annually with all MDIs. Reinforce inhaler technique at every review

Uncontrolled asthma: Any exacerbation requiring oral corticosteroids **or** frequent regular symptoms (such as using reliever inhaler 3 or more days a week or night-time waking 1 or more times a week)

*Off label use. The decision to use the device must be made in collaboration with the family/young person based on an informed discussion

MDI, metered dose inhaler; **DPI**, dry powdered inhaler; **SMI**, soft mist inhaler; **ICS**, inhaled corticosteroid; **LABA**, long-acting beta$_2$ agonist; **LAMA**, long-acting muscarinic receptor antagonist; **LTRA**, leukotriene receptor antagonist; **MART**, maintenance and reliever therapy (using ICS/formoterol combination inhalers); **SABA**, short-acting beta$_2$ agonist; **AIR**, anti-inflammatory reliever therapy (using ICS/formoterol combination inhalers).

Background

In November 2024, NICE, in collaboration with the British Thoracic Society (BTS) and the Scottish Intercollegiate Guidelines Network (SIGN), published a comprehensive update to its asthma guideline – now named **NG245: Asthma: diagnosis, monitoring and chronic asthma management**[1]. This replaced the previous paediatric-specific guidance (NG80, 2017) and integrated relevant BTS/SIGN recommendations, reflecting a major overhaul in approach. The national guidance places emphasis on anti-inflammatory reliever therapy (AIR), objective diagnostics, environmental action, and self-management dovetails strongly with NEL's goals: environmental justice, equitable care in schools, greener prescribing, and robust respiratory governance. By weaving NG245 into local systems, NEL ICS can reinforce its commitment to reducing asthma admissions, cutting health inequalities, and achieving a net-zero carbon footprint—delivering on its vision for children's respiratory health across North East London.

Fingertips data reveals Asthma prevalence for 2023/24 in the London region as being consistently lower than the national average. NEL ICB although slightly higher than other London ICBs, still reports lower asthma prevalence (4.8%) than the national average.

Key updates

- AIR: SABA-only regimens are no longer recommended—even in mild cases. Replaced by Anti-inflammatory reliever (AIR) therapy. This is an ICS-formoterol combination inhalers used as-needed for symptom relief for over 12s MART (Maintenance and Reliever Therapy) is now the mainstay and preferred for ongoing management. This a is ICS-formoterol combination inhalers used as-needed for symptom relief and for maintaining inflammation control.
- Low-dose MART for mild/moderate symptoms.
- Moderate-dose MART for persistent symptoms.

- MART approach offers significant benefits for patients by simplifying asthma management and reducing reliance on and reducing reliance on SABA, thereby promoting better long-term control and adherence. Some of the benefits include:
  - ✓ Reducing the overreliance on SABA inhalers
  - ✓ One inhaler device for both preventer and reliever
  - ✓ Formoterol has a rapid onset of action that is comparable to salbutamol
  - ✓ The patient gets the inhaled steroid needed to treat the inflammation causing the asthma symptoms at the same time as immediate relief from their symptoms.
  - ✓ MART reduces the need to rely on a blue salbutamol or terbutaline inhaler.
  - ✓ AIR and MART reduce the risk of severe exacerbations.
  - ✓ MART results in fewer exacerbations and hospital admissions

A New Way to Manage Your Asthma: Understanding MART and AIR Inhalers – Video infographic describing the benefits of AIR and MART

A NEL guidance note has been developed to support the implementation of the Medicines and Healthcare Regulatory Agency (MHRA) Drug Safety Alert published on 24th April 2025[2]:SABA: reminder of the risks from overuse in asthma and to be aware of the changes asthma prescribing guidelines to further support pharmacological management of asthma. Medicines Guidelines- Respiratory – North East London

The National Capabilities Framework for Professionals who care for Children and Young People with Asthma

The National Capability Framework[3] for Asthma Care (especially in children and young people) is designed to ensure that **all professionals involved in asthma care** meet clearly defined standards of knowledge and skill—depending on their role. It provides a tiered structure for clinical competence, from awareness to expert level. When linked with NICE NG245, the National Capability Framework (NCF) helps operationalise the guidance by ensuring that clinicians across the system can deliver the updated care pathways. The framework is divided into 5 tiers. A tier describes the level of care a person may be expected to deliver to a child or young person with asthma. The more involved the care, the higher the level of tier. The tiers are not profession specific but rather describe a level of asthma care an individual may deliver to a child or young person. Individuals should look at their own role and choose the tier most appropriate to the care they deliver. For the purposes of this guidance, the framework at level 2-3 would be most relevant for those who work in primary care.

CYP Asthma Capability Framework Tiers:

Tier	Level of care	Example profession	Knowledge and skills
1	Signposting	• Social care • Education staff • Childcare providers • Leaders of children's clubs • GP receptionists • Health Care Assistants	Basic awareness of asthma, its management, inhaler use and basic modifiable risk factors. Able to signpost families to resources.
2	Supporting prescribed care	• Practice, School, Community, and ward nurses • Health visitors • Community pharmacist • AHPs • Ambulance staff	Greater understanding of the principles of asthma management and able to deliver prescribed care both routinely and in an emergency. Able to view asthma as a chronic condition and identify risk factors for poor control
3	Assessment and prescribing of care	• General Practitioners • Emergency department doctors • Paediatricians • Doctors in training • Nurses with a special interest • Clinical pharmacist	Able to diagnose, assess and manage acute and chronic asthma. Able to address the factors that contribute to poor control
4	Assessment and prescribing for the more difficult to treat asthmas	• Paediatricians with special interest • Advanced nurse practitioners	In depth knowledge of asthma and the differentials and able to diagnose, assess and manage the more difficult to treat asthmatic. Able to work with wider teams to support all aspects of management and transition
5	Managing the difficult and severe asthmas	• Tertiary paediatrician • AHP member of the asthma MDT	Specialist knowledge and skills to diagnose, assess and manage the most severe and difficult to treat asthmatics

Asthma: diagnosis, monitoring, and chronic asthma management

Initial clinical Assessment

Clinical history: Obtain a structured clinical history in patients with suspected asthma. Specifically, check for:

- reported wheeze, noisy breathing, cough, breathlessness or chest tightness, and any variation (for example, worse during the night or early morning, or seasonal) in these symptoms
- any triggers that make symptoms worse
- a personal or family history of asthma or allergic rhinitis

1. Symptoms to suggest alternative diagnoses (see the tables on alternative diagnoses in wheezy children4 and alternative diagnoses in adults in the BTS/SIGN British guideline on the management of asthma SIGN 158[5])
2. Do not confirm a diagnosis of asthma without a suggestive clinical history and a supporting objective test. Code as "suspected asthma" until the diagnosis is confirmed[3]

   If the diagnosis of asthma is confirmed, record the basis for this in the patient's medical records, alongside the coded diagnostic entry[1.]

Differential Diagnoses

Acute asthma symptoms are mimicked by other conditions such as:

- Croup
- Bronchiolitis
- Pneumonia
- Anaphylaxis
- Cardiac failure
- Anxiety/Dysfunctional breathing/Vocal cord dysfunction

Chronic asthma symptoms are mimicked by other conditions such as:

- Aspiration (Acid reflux, dysphagia, laryngeal cleft/tracheooesophageal fistula)
- Extrinsic airway compression (lymphadenopathy, vascular ring)
- Intrinsic airway narrowing (airway malacia, cardiac failure)
- Chronic lung disease (interstitial lung disease, bronchiectasis)

These differential diagnoses should be considered when evaluating asthma presentations or treatment response (or lack thereof).

Physical examination: Examine people with suspected asthma to identify expiratory polyphonic wheeze and signs of other causes of respiratory symptoms but be aware that even if examination results are normal, the person may still have asthma.

Structured clinical assessment: A structured clinical assessment in conjunction with the BTS algorithm cited below can assign children to broad categories of validity of asthma diagnosis and thus guide treatment approach.

- **Elicit a history** of recurrent episodes of wheeze, cough, breathlessness, and chest tightness that can vary over time.
- **Measure peak flow** AND provide a diary to assess diurnal variation, or correlation of symptoms with peak flow values.
- **Quantify subjective symptoms** via the ACT

- **Document true wheeze** as noted by health professionals (as well as parental-reported).
- **Document family/personal history** of atopic conditions.
- **Check for comorbidities/alternative diagnoses/modifiable risk factors** (symptoms and signs may include non-response to salbutamol (acute) or to inhaled steroid (long term).

Red flags for alternative diagnosis

- Persistent wet cough
- Low weight for height
- X-ray changes
- Stridor/Absence of wheeze
- Prominent vomiting history
- Choking with feeding
- Finger clubbing
- Significant other infections

Initial treatment and objective tests for acute symptoms at presentation

If presenting with recurrent symptomatic symptoms - a trial of treatment should be instigated while awaiting formal testing

1. If objective tests for asthma cannot be done immediately for people who are acutely unwell or highly symptomatic at presentation, carry them out when acute symptoms have been controlled, and advise people to contact their healthcare professional immediately if they become unwell while waiting to have objective tests
2. Be aware that the results of spirometry and FeNO tests[6] may be affected in people who have been treated with inhaled corticosteroids (the test results are more likely to be normal)
3. NEL diagnostic service arrangements: There are currently no FeNO testing service arrangements in NEL

Monitoring and self-management of all patients[1]:

All adults, young people, and children with diagnosed or suspected asthma must have:

- ❖ A personalised asthma action plan (PAAP) which includes treatment regime, triggers, warning signs and who to contact when they need help
- ❖ Regular (at least annual) asthma reviews which are conducted by appropriately trained healthcare professionals. At these:
  - ➢ Consider using age-appropriate validated tools e.g. Asthma Control Test (ACT)
  - ➢ Confirm adherence to prescribed treatment and review inhaler technique
  - ➢ Identify any risk associated with short-acting beta-agonist (SABA) overuse
  - ➢ A review/update of their asthma action plan
- Record smoking/vaping status of everyone at home, and referral to smoking cessation if appropriate
  - ❖ Access to education and self-management programmes/information. This includes working alongside schools and community workers to ensure support in all settings.

Asthma & Wheeze NEL Booklet – ALL languages – North East London

Diagnosing Asthma in children <5 years

In children aged under 5 years of age it is difficult to make a firm diagnosis because of lack of testing; however, this should not prevent initiation of treatment if based on a structured clinical history and examination suggesting the diagnosis and a positive response to an 8–12-week course of ICS. There is robust evidence for medication safety in this age group. Usually, objectives should be used to confirm the tests when the child reaches the age of 5 and then annually if unsuccessful.

- In CYP over 5 years of age, a diagnosis of asthma is made based on a structured clinical history and examination and positive objective testing, ideally with FeNO or spirometry
- Where there are difficulties in accessing FeNO and/or spirometry, objective tests can be conducted using peak expiratory flow rate or measurement of blood eosinophils. A positive response to an 8-week trial of ICS can be acceptable as an objective test providing the symptomatic response is recorded and documented by means of a validated questionnaire such as the paediatric ACQ or paediatric ACT
- Parents/guardians should be encouraged to share a diagnosis of asthma with the child's school or pre-school
- Referral to secondary care should be made where there is diagnostic doubt or there is a poor response to appropriate therapy

Table 1. Main differential diagnosis of pre-school asthma

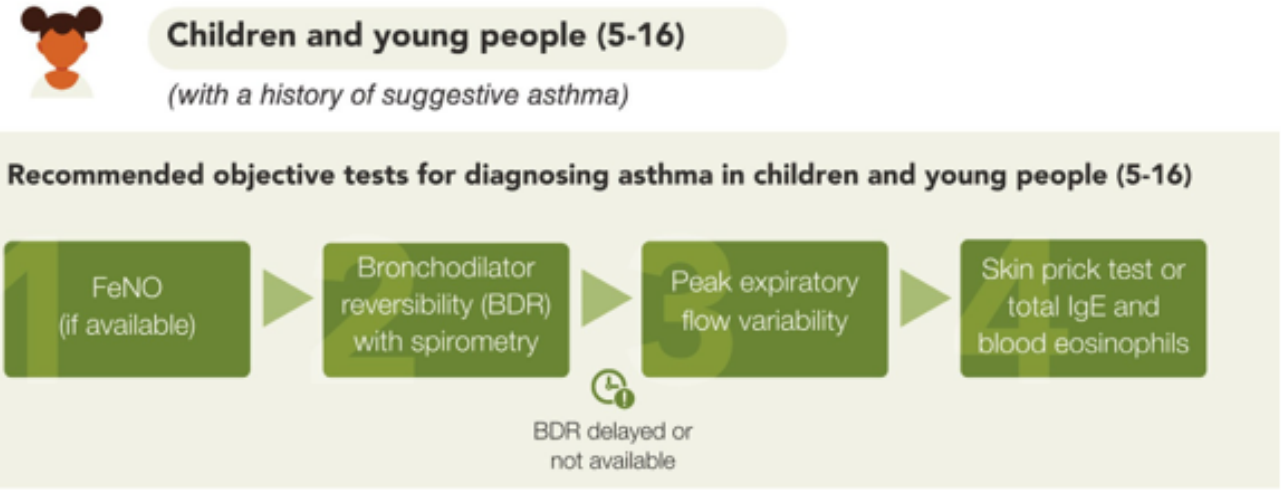
Condition	Features
Recurrent viral infection (most common)	Recurrent wheeze, cough associated with viral infections only (no symptoms in between)
Pertussis	Protracted paroxysms of coughing often with vomiting and/or stridor
Persistent bacterial bronchitis	Persistent wet cough, poor response to asthma medications, can be associated with basal crackles
Tuberculosis	Persistent symptoms, fever, enlarged lymph nodes, contact, potential contact with someone with tuberculosis
Cystic fibrosis	Cough starting neonatally, failure to thrive, loose greasy stools
Congenital heart disease	Cyanosis when feeding, failure to thrive, tachycardia, cardiac murmur
Foreign body aspiration	Episodes of abrupt cough and/or breathlessness
Gastro-oesophageal reflux	Cough when feeding and vomits easily after feeds
Tracheomalacia (congenital narrowing trachea)	Noisy breathing (inspiratory and/or expiratory) when eating or crying often present from birth

Pharmacological management in children under 5 years of age

Usage of SABA alone should only be used in the context of a first acute wheeze episode- ongoing symptoms always require a preventer. Clinicians should also note that wheezy infants (< 2 years) do not respond to bronchodilators despite evidence of functioning β-adrenoceptors. This is because the predominant aetiology, bronchiolitis, is characterised by small airway oedema and increased mucus, for which β2-agonists are ineffective: https://pmc.ncbi.nlm.nih.gov/articles/PMC1544602/

Objective tests for diagnosing asthma in adults, young people, and children aged 5 to 16 with a history suggestive of asthma

Figure 1. BTS/SIGN/NICE.
Recommended objective tests for confirming asthma in children and young people (aged 5–16)



Fractional exhaled nitric oxide (FeNO)	Measure FeNO in children with a history suggestive of asthma. Diagnose asthma (providing characteristic symptoms are present) if FeNO levels are >35 ppb.
Spirometry	If the FeNO level is not raised or FeNO testing is not available, diagnose asthma via reversibility testing with spirometry. An increase in forced expiratory volume in 1 second post-bronchodilator (e.g., 400 µg salbutamol) by 12% or more from baseline or >10% predicted normal.
Peak expiratory flow rate (PEFR)	If spirometry is delayed (or unavailable), measure PEFR twice daily for 2 weeks. Diagnose asthma if PEFR variability is more than 13%.
Blood eosinophils and IgE - Skin prick testing	If asthma is not confirmed by FeNO or bronchodilator reversibility, either perform skin prick testing or immunoglobulin E (IgE) level and eosinophil count. Diagnose asthma if there is evidence of sensitisation or a raised IgE level and a raised blood eosinophil level of more than 0.5×109 per litre.
Specialist input	If there is still doubt in diagnosis, refer to a paediatric respiratory specialist.

Adopted from Primary Care Respiratory Society | Charity Number 1098117, Company Number 4298947

The tests above should be used to aid diagnosis alongside history taking

1. Measure the FeNO level in children with a history suggestive of asthma. Diagnose asthma if the FeNO level is 35 ppb or more[1]

- If the FeNO level is not raised, or if FeNO testing is not available, measure Bronchodilator reversibility (BDR) with spirometry. Diagnose asthma if the FEV_1 increase is 12% or more from baseline (or if the FEV_1 increase is 10% or more of the predicted normal FEV_1)[1]
- If spirometry is not available or it is delayed, measure peak expiratory flow (PEF) twice daily for 2 weeks. Diagnose asthma if PEF variability (expressed as amplitude percentage mean) is 20% or more

2. If asthma is not confirmed by FeNO, BDR or PEF variability but still suspected on clinical grounds, either perform skin prick testing[7] to house dust mite or measure total IgE level and blood eosinophil count.
    - Exclude asthma if there is no evidence of sensitisation to house dust mite on skin prick testing or if the total serum IgE is not raised
    - Diagnose asthma if there is evidence of sensitisation or a raised IgE level and the eosinophil count > $0.5x10^7$

N.B. Besides asthma, several other conditions and factors can cause elevated FeNO levels. These include allergic rhinitis, chronic rhinosinusitis, nasal polyps, atopy (the tendency to develop allergic diseases), and certain viral infections. Additionally, environmental factors like air pollution and nitrate-rich foods can also contribute to increased FeNO[8]

Decreasing maintenance therapy

- At annual review discuss with the patient with asthma (or their family or carer, if appropriate) the potential risks and benefits of decreasing their maintenance therapy when their asthma has been well controlled on their current maintenance therapy
    1. When decreasing maintenance therapy:
    - Consider the child's trigger exposure and time of the year
    - Stop or reduce dose of medicines in an order that considers the clinical effectiveness when introduced, side effects and the patient's preference.
    - Allow at least 8 to 12 weeks before considering a further treatment reduction
    - **Do not step down to SABA monotherapy**

- If considering step-down treatment for people aged 12 and over who are using low-dose maintenance inhaled corticosteroid (ICS) plus a short-acting $beta_2$ agonist (SABA) as needed or low-dose MART, step down to low-dose ICS/formoterol combination inhaler as needed (as-needed AIR therapy)
- Agree with the patient (or their family or carer if appropriate) how the effects of decreasing maintenance therapy will be monitored and reviewed, including self-monitoring and follow-up with a healthcare professional within 5 days if required
- Review and update the patient's asthma action plan when decreasing maintenance therapy

Monitoring Asthma Control

- Once asthma is diagnosed, patients (and carers) should be provided with a PAAP (Personalised asthma action plan) tailored to their symptom patterns, triggers, and treatment plan.
- Individualised Care: PAAPs ensure that patients understand:
    - ✓ What daily treatment to take
    - ✓ How to recognise worsening symptoms
    - ✓ What actions to take during deterioration
    - ✓ When to seek emergency help

- **Ongoing Monitoring:** The guideline recommends regular reviews using tools like the Asthma Control Test (ACT). PAAPs should be updated during these reviews to reflect any medication changes or new triggers.
- **Education and Inhaler Technique**: NG245 and PAAPs both highlight the need to regularly review **inhaler technique**, check **treatment adherence**, and ensure patient

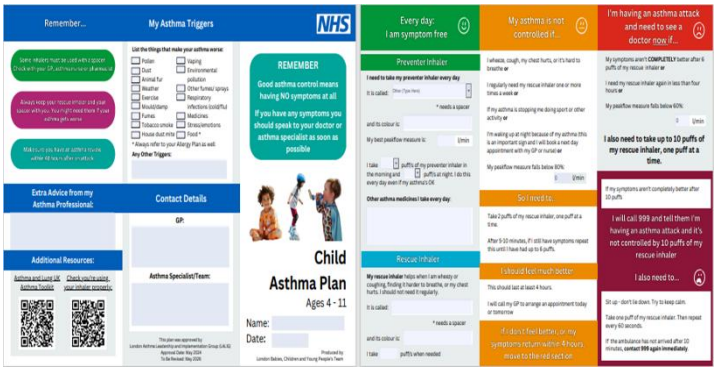
understanding—all documented within the action plan. Ensure that patients with pMDIs have an age-appropriate spacer provided.

- **Child and Young Person Focus**: For children, PAAPs support parents and schools in responding consistently to symptoms, aligning with the guideline's age-specific monitoring strategies.

Personalised Asthma Action Plans (PAAPs)

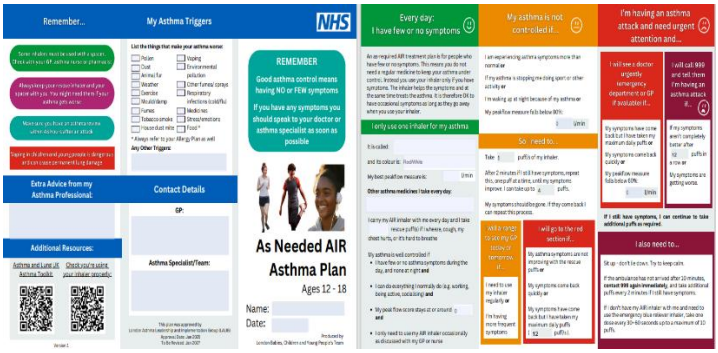
NEL has adapted PAAPs which have been approved by LALIG (London Asthma Leadership and Implementation Group) – these versions can be found here along with versions available in multiple languages [Medicines Guidelines- Respiratory – North East London]

NEL 4-11yrs Personalised Asthma Action Plan



NEL 12-18yrs Personalised Asthma Action Plan

AIR Personalised Asthma Action Plan



MART Personalised Asthma Action Plan

North East London (NEL) Paediatric Respiratory Inhaler Formulary

Introduction

This formulary has been developed with stakeholders across NEL to support consistent high-quality respiratory care when used in conjunction with the NEL paediatric guidelines The list includes associated carbon footprint and device type listed alongside with links to the product specifications and video links for inhaler technique demonstrations. Please prescribe only by brand and device.

Types of inhalers and other devices:

- All Dry Powder Inhalers (DPIs) have a lower carbon footprint but require patients to have a deep and fast inspiratory effort technique (of various degrees, depending on device) to use them optimally. DPIs are generally suitable in older children
- Metered Dose Inhalers (MDIs) currently have a higher carbon footprint due to the propellent used in MDI canisters. MDI devices however will be suitable for patients who are unable to take deep and fast inspiratory breaths rendering DPI devices unsuitable.
- MDI and Soft Mist Inhalers (SMI) devices require a slow steady breath to inhale their medication optimally.
- Use an In-check dial® device to assess inspiratory flow rate where possible. In-check dial devices may be ordered via this link and the one-way inspiratory disposable mouthpieces are available to order, for example via this link.
- Spacers should be used with pMDIs to optimise inhaler technique and enhance drug deposition.

Prescribing multiple inhalers: When separate inhalers are required, select devices that require the same inspiratory technique for the patient to optimise their technique.

Inhaler switching: Patients who are currently stable on any non-formulary inhalers should not be switched without a face-to-face consultation if this requires a change of device or regime. All patients should be reviewed and be part of a shared decision-making consultation before any changes to inhaler prescribing takes place[9,10].

Nebulised medicines: Are NOT recommended outside of acute/inpatient hospital care (i.e. during an exacerbation) and therefore are not included in the tables contained within this formulary. They may be required in other indications e.g. cystic fibrosis. Please see MHRA drug safety alert: Nebulised asthma rescue therapy in children: home use of nebulisers in paediatric asthma should be initiated and managed only by specialists - GOV.UK

Key and abbreviations

1	First-line option (may be started in primary or secondary care)
2	Second-line/not routinely used option (may be started in primary or secondary care after first-line option has been considered inappropriate or unsuitable)
A1	Amber 1 - Suitable for initiation in primary care, only following specialist recommendation
	Low carbon footprint inhaler
	Medium carbon footprint inhaler
	High carbon footprint inhaler
pMDI	Pressurised metered dose inhaler
DPI	Dry powder inhaler
SMI	Soft mist inhaler
BDP	Beclometasone dipropionate
MART	Maintenance and reliever therapy
AIR	Anti-Inflammatory Reliever
ICS	Inhaled corticosteroid
ICS/LABA	Inhaled corticosteroid and Long-acting beta-$_2$ agonist combined inhaler
LAMA	Long-acting muscarinic antagonist
SABA	Short acting beta-$_2$ agonist

Check DM+D or Drug tariff for most up to date price	
*	Asterisk to refer to off-label/unlicensed table on page 10
£	Products costing <£10 per inhaler
££	Products costing between £10-£25 per inhaler
£££	Products costing >£25 per inhaler

Spacers

All brands of spacer/holding chamber devices are on formulary and accepted to be prescribed across NEL.
To find a full list of spacer devices please refer to the latest drug tariff (under part IXA – appliance – spacer/holding chamber devices)
Below represents examples of the most commonly prescribed inhalers in NEL.

Device name and accepted age range	Image	Comments/features
Aerochamber plus flow-vu anti-static		Compatible with most pMDI devices Prescribe a facemask version only if patients are unable to use a mouthpiece version, and for younger children under 5 years of age. Clinicians should use their clinical judgement on selecting a suitable mask/spacer size. **Prescribe a compatible spacer for use in ALL patients using pMDI devices** – check RightBreathe for spacer-inhaler compatibility. **Replace annually** or sooner if needed Easychamber provide whistling sound feedback if inspiratory flow is too fast. (This feature is only available in adult sizes for the Aerochamber Plus spacer – without flow-vu). **Instructions for using a spacer with a mask for a baby or child** **Instructions for using a spacer for tidal breathing and single breath and hold for a child without a mask** *See off-label/unlicensed table
• With small mask – infant (0-12 months*)		
• With medium mask – child (1-5 years)		
• Youth (no mask) (> 5 years)		
• Adult (no mask) (> 12 years*)		
Easychamber		
• With infant mask (0-24 months)		
• With child mask (2-6 years) • Include mouthpiece picture		
• With adult mouthpiece (> 6 years)		

ICS – Inhaled Corticosteroids

Active ingredients	Inhaler brand name/type	Status	Image	Licensing relevant to asthma	Further information
Beclometasone dipropionate	**Soprobec** pMDI 50mcg, **£** 100mcg, **£** *200mcg **££** (200 doses)	1 High Carbon Footprint		Asthma all age groups *see off-label table	**NO dose counter** MDI inhaler technique video with mask MDI inhaler technique video without mask Tidal Breathing **Prescribe spacer**
Beclometasone dipropionate	**Clenil Modulite** pMDI 50mcg, **£** 100mcg, **£** *200mcg **££** (200 doses)	1 High Carbon Footprint		Asthma all age groups * see off-label table	**Includes dose counter** MDI inhaler technique video with mask MDI inhaler technique video without mask Tidal Breathing **Prescribe spacer**
Budesonide	**Pulmicort Turbohaler** DPI 100mcg **££** (200 doses) 200mcg **££** (100 doses)	1 Low Carbon Footprint		Asthma ≥ 5yrs old	**Includes dose counter** Turbohaler Inhaler technique video

ICS/LABA - Inhaled Corticosteroid/ Long-Acting Beta$_2$ Agonist

Active ingredients	Inhaler brand name/type	Status	Image	Licensing relevant to asthma	Further information
Budesonide and formoterol	**Symbicort Turbohaler** DPI 100 mcg/6 mcg **£££** (120 doses)	1 Low Carbon Footprint		Asthma: Fixed dose and MART≥6 yrs	**Includes dose counter** **Turbohaler Inhaler technique video**
Budesonide and formoterol	**Symbicort Turbohaler** DPI 200 mcg/6 mcg **£££** (120 doses)	1 Low Carbon Footprint		Asthma fixed dose and MART: ≥12 yrs ≥12 yrs reliever therapy in mild asthma (AIR)	**Includes dose counter** **Turbohaler Inhaler technique video**
Budesonide and formoterol	**Symbicort** pMDI 100 mcg/3 mcg **££** (120 doses)	1 High Carbon Footprint		Asthma fixed dose and MART: ≥12 yrs * see off-label table	**Includes dose counter** **MDI inhaler technique video with mask** **MDI inhaler technique video without mask** **Tidal Breathing** **Prescribe spacer**
Budesonide and formoterol	**DuoResp Spiromax** DPI 160 mcg/ 4.5 mcg **£££** (120 doses)	1 Low Carbon Footprint		Asthma: fixed dose ≥ 12 yrs MART: ≥ 12 yrs * see off-label table ≥12 yrs reliever therapy in mild asthma (AIR)	**Includes dose counter** **Spiromax Inhaler technique video**

ICS/LABA - Inhaled Corticosteroid/ Long-Acting Beta2 Agonist

Active ingredients	Inhaler brand name/type	Status	Image	Licensing relevant to asthma	Further information
Fluticasone propionate and salmeterol	**Combisal** pMDI 50 mcg/25 mcg **ff** (120 doses)	2 High Carbon Footprint		Asthma fixed dose ≥4 yrs old	**NO dose counter** MDI inhaler technique video with mask MDI inhaler technique video without mask Tidal Breathing **Prescribe spacer**
Fluticasone propionate and salmeterol	**Combisal** pMDI 125 mcg/25 mcg **ff** 250 mcg/25 mcg **ff** (120 doses)	2 High Carbon Footprint		Asthma fixed dose ≥12 yrs old * see off-label table	**NO dose counter** MDI inhaler technique video with mask MDI inhaler technique video without mask Tidal Breathing **Prescribe spacer**
Fluticasone propionate and formoterol	**Flutiform** pMDI 50 mcg/5 mcg **ff** (120 doses)	2 High Carbon Footprint		Asthma fixed dose ≥ 5 yrs old	**Includes dose counter** MDI inhaler technique video with mask MDI inhaler technique video without mask **Prescribe spacer**
Fluticasone propionate and formoterol	**Flutiform** pMDI 125 mcg/5 mcg **fff** (120 doses)	A1 High Carbon Footprint		Asthma fixed dose ≥ 12 yrs old	**Includes dose counter** MDI inhaler technique video with mask MDI inhaler technique video without mask Tidal Breathing **Prescribe spacer**

ICS/LABA - Inhaled Corticosteroid/ Long-Acting Beta2 Agonist

Active ingredients	Inhaler brand name/type	Status	Image	Licensing relevant to asthma	Further information
Fluticasone furoate and vilanterol	**Relvar Ellipta** DPI 92 mcg/22 mcg **ff** 184 mcg/22 mcg **fff** (30 doses)	A1 Low Carbon Footprint		Asthma fixed dose ≥12 yrs old	**Includes dose counter** **Ellipta Inhaler technique video**

LAMA - Long-Acting Muscarinic Receptor Antagonist

Active ingredients	Inhaler brand name/type	Status	Image	Licensing relevant to asthma	Further information
Tiotropium	**Spiriva Respimat** SMI 2.5mcg **ff** (60 doses)	1 Low Carbon Footprint		Asthma ≥ 6yrs old	**Includes dose counter** **Respimat inhaler technique video**

SABA - Short-Acting Beta$_2$ Agonist

Active ingredients	Inhaler brand name/type	Status	Image	Licensing relevant to asthma	Further information
Salbutamol	**Salamol** pMDI 100mcg **£** (200 doses)	1 Medium Carbon Footprint		≥ 4yrs old * see off-label table	**NO dose counter** MDI inhaler technique video with mask MDI inhaler technique video without mask Tidal Breathing **Prescribe spacer**
Salbutamol	**Salamol Easi-breathe** breath-actuated pMDI 100mcg **£** (200 doses)	A1 Medium Carbon Footprint		≥ 4yrs old * see off-label table	**NO dose counter** Easi-Breathe inhaler technique video **Spacers cannot be used with this device**
Terbutaline	**Bricanyl Turbohaler** DPI 500mcg **£** (120 doses)	2 Low Carbon Footprint		Asthma all age groups	**Includes dose counter** Turbohaler Inhaler technique video

*Off-label/ Unlicensed details	
Product	
Spacers	The age recommendations for commonly used infant spacers, such as Aerochamber Plus Flow-Vu® anti-static with small mask is 0-18 months. Local specialists have requested that the age range offered for the infant type of spacer is for infants 0-12 months of age. The age recommendation for the small adult spacer is 5 years and over, however due to a difference in resistance between the youth spacer and adult, to guide clinicians, the adult spacer has been recommended in this formulary for age 12 and over.
Beclometasone (**Soprobec** 200 microgram and **Clenil** 200 microgram pMDI)	The 200-microgram strength inhaler is licensed for age 16 years and over, however may be prescribed for younger children on specialist recommendation.
Budesonide and formoterol (**DuoResp Spiromax** 160/4.5 microgram	Licensed for MART in children >12 yrs. Use in children <12 years may be considered and is accepted in appropriately assessed individuals.
Symbicort pMDI 100/3 microgram	Licensed for MART in children >12 yrs. Use in children <12 years may be considered and is accepted in appropriately assessed individuals. Use in children >12 years for AIR may be considered and is accepted in appropriately assessed individuals.
Fluticasone propionate and salmeterol (**Combisal** 125/25 microgram **pMDI)**	The 125/25 microgram strength inhaler is licensed for age 12 and over, however may be prescribed for younger children on specialist recommendation.
Salbutamol (**Salamol pMDI** and **Salamol Easi-breathe breath-actuated pMDI**)	The Summary of Product Characteristics (SPC) states that salbutamol is licensed for use in children > 4 years of age. However, in the SPC it also states that paediatric clinical studies conducted at the recommended dose in patients < 4 years with bronchospasm associated with reversible obstructive airways disease, show that Salbutamol CFC-Free Inhaler has a safety profile comparable to that in children ≥ 4 years, adolescents, and adults. Use is established and accepted in children under 4 years of age.

References:

1: National Institute for Health and Care Excellence. (2023). Update information. NICE. Retrieved February 12, 2025, from https://www.nice.org.uk/guidance/ng245/chapter/Update-information

2: Medicines and Healthcare products Regulatory Agency (MHRA). *Short-acting beta 2 agonists (SABA) (salbutamol and terbutaline): reminder of the risks from overuse in asthma and to be aware of changes in the SABA prescribing guidelines*. Drug Safety Update, 24 April 2025. Available at: GOV.UK Drug Safety Update

3: NHS England. (2025). *National capabilities framework for professionals who care for children and young people with asthma*. https://www.e-lfh.org.uk/wp-content/uploads/2025/05/National_Capabilities_Framework_2025.pdf

4: NHS Greater Glasgow and Clyde. Alternative diagnoses in wheezy children. Right Decisions. Retrieved February 12, 2025, from https://rightdecisions.scot.nhs.uk/asthma-pathway-bts-nice-sign-sign-244/diagnosis/alternative-diagnoses-in-wheezy-children/

5: NHS Greater Glasgow and Clyde. Alternative diagnoses in adults. Right Decisions. Retrieved February 12, 2025, from https://rightdecisions.scot.nhs.uk/asthma-pathway-bts-nice-sign-sign-244/diagnosis/alternative-diagnoses-in-adults/

6: Medicines and Healthcare products Regulatory Agency. (2020, March). Montelukast: Reminder of the risk of neuropsychiatric reactions. GOV.UK. Retrieved February 12, 2025, from https://www.gov.uk/drug-safety-update/montelukast-reminder-of-the-risk-of-neuropsychiatric-reactions

7: National Institute for Health and Care Excellence. (2023). Recommendations: Uncontrolled asthma. NICE. Retrieved February 12, 2025, from https://www.nice.org.uk/guidance/ng245/chapter/recommendations#uncontrolled-asthma

8: Asthma + Lung UK. (n.d.). *Objective testing for asthma diagnosis in adults*. https://www.asthmaandlung.org.uk/healthcare-professionals/adult-asthma/diagnosis-testing/objective-testing

9: Blanket" switching of inhaler types: Why is this a bad idea? | Primary Care Respiratory Society

10: PCRS Position Statement - Inhaler Switching | Primary Care Respiratory Society