Healthier Together
Improving health and care in Bristol, North Somerset and South Gloucestershire

BNSSG Asthma Guidelines: Children and Young People (CYP) 2022

Why the update?

BNSSG have made the decision to delay publication of new clinical guidance until the release of the British Thoracic Society/National Institute for Health and Care Excellence (BTS/NICE) joint guideline. BTS and NICE will be releasing a new joint asthma guideline which is due to be published in November 2023 that takes into consideration recent scientific literature and will recommend cost effective management of asthma. With an increasing focus on the environmental impact of respiratory medicine, as outlined in the NHS Green Plan, this guideline has been updated in the interim to create an emphasis on greener inhaler prescribing.

Inhaler selection & Environmental Considerations

Inhalers have a significant carbon footprint and make up ~3% of all NHS carbon emissions and 13% of direct patient care. In the UK a large proportion of our inhalers are pressurised metered dose inhalers (pMDIs) which contain hydrofluoroalkanes (HFA) propellants which are potent greenhouse gases. In January 2019, the NHS long-term plan proposed a 50% reduction in the greenhouse gas emissions from inhalers in 10 years. Using these simple steps when prescribing inhalers will help:

1. Focus on finding the right medication and device for each individual using shared decision making and ensure good inhaler technique. **Optimal asthma management** is the key goal.
2. Ask to **return all used or unwanted inhalers to community pharmacies or dispensaries** for disposal by incineration or re-cycling.
3. Avoid **Flutiform MDI**, **Symbicort MDI**, **Ventolin Evohaler MDI** and **generic Salbutamol MDI** which all have large carbon footprints. These have been removed from the BNSSG guidelines.
4. **DPIs** or **SMIs** should be offered **first line** where clinically appropriate. Find out how to check whether a patient is suitable for a DPI below
5. Click here for more guidance on how to reduce the environmental impact of inhalers. The Greener Practice guide is also helpful.

DPI suitability

Inspiratory Flow Guide			
	Easyhaler®	Turbohaler®	Ellipta®
'Hard and deep' inhalation			
	MDI®	Evohaler®	Clenil®
'Slow and steady' inhalation			

Some patients with poor inspiratory ability may struggle to use DPIs. Some children cannot produce adequate respiratory force, so may not manage DPIs until later primary years. If you are not sure, assess the patient's inspiratory ability by observing them inhaling. As always, inhaler technique is key and so should always be assessed and discussed whichever device is

Poor Asthma Control

Defined as (one or more of):

- Continued persistent chronic symptoms (most days for >3 months) or Childhood Asthma Control Test (C-ACT) score of ≤19
- Prescription of ≥6 salbutamol inhalers per year
- Persistent airflow obstruction (FEV1 <80% post bronchodilator)
- Recurrent severe exacerbations in the past year (≥2 per year requiring hospital admission or requiring high dose oral corticosteroids for at least 3 days)
- A single PICU admission in the past year

NB: National guidance recommends all CYP who have attended hospital (including an A&E admission) for an acute exacerbation should be reviewed within 48 hours

Key: SABA = Short-acting β2-agonist ICS = Inhaled corticosteroid OCS = Oral corticosteroid LABA = Long-acting β2-agonist LTRA = Leukotriene receptor antagonist

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Asthma Prescribing Guide Children aged ≤5 years old

Carbon Footprint Key Low Medium High	Inhaled SABA ***Can be used at <u>all</u> stages PRN*** ***NOT monotherapy*** ***Consider stepping up if using ≥3 doses a week***	Paediatric VERY LOW dose ICS	Paediatric LOW dose ICS **If remains uncontrolled, consider LTRA trial**
Metered dose inhaler (MDI) with a compatible spacer	**Salamol 100mcg/dose inhaler CFC free** 1-2 puffs via a spacer prn  Can give up to 10 puffs if acutely unwell as per Asthma Action/ Wheeze plan. If needs more than 10 puffs in four hours, refer to emergency services <u>License:</u> From 4 years old**	**Clenil Modulite® 50mcg/dose inhaler** 1 puff bd (off-label) or 2 puffs bd via a spacer <u>License</u>: 2-11 years old***  **Flixotide 50mcg/dose Evohaler®** (200mcg BDP equiv./day) 1 puff bd via a spacer <u>License</u>: From 4 years old 	**Clenil Modulite® 100mcg/dose inhaler** 2 puffs bd via spacer <u>License</u>: 2-11 years***  **Flixotide 50 mcg/dose Evohaler®** (400mcg BDP equiv./day) 2 puffs bd via spacer <u>License:</u> From 4 years 

*Not all products have a UK marketing authorisation for use at all dosages, or in all ages: if considering prescribing a product outside the terms of its marketing authorisation follow relevant professional guidance and take full responsibility for the decision. Obtain and document informed consent.
** The product license also states "Paediatric clinical studies conducted at the recommended dose, in patients < 4 years with bronchospasm associated with reversible obstructive airways disease, show that Salamol has a safety profile comparable to that in children ≥ 4 years, adolescents and adults."
***The product license only states "licensed in children" and does not specify an age range. The license holder has confirmed that Clenil was designed to be equivalent to CFC-containing inhalers and therefore the licensing closely matched that of the CFC-containing inhalers, which did not specify an age range. The paediatric guidelines that were in force at the time defined the age range for the term 'children' as 2-11 years of age.

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Asthma – Prescribing Guide Children aged 6-17 years old

Carbon Footprint Key Low Medium High	Very low dose ICS	Low dose ICS	VERY LOW dose ICS + LABA Increase ICS to 400mcg/day before adding in LABA	LOW dose ICS + LABA	MEDIUM dose ICS + LABA Provide steroid card If asthma remains uncontrolled refer to asthma specialist Consider trial of LTRA
Dry Powder Inhalers (DPI) First choice if clinically appropriate	**Flixotide 50mcg/dose Accuhaler®** (200mcg BDP equiv./day) 1 puff bd License: From 4 years old	**Flixotide 100mcg/dose Accuhaler®** (400mcg BDP equiv./day) 1 puff bd License: From 4 years old	**Symbicort 100/6 Turbohaler®** (100-200mcg BDP equiv./day) 1 puff bd, can be reduced to 1 puff od if symptoms under control License: From 6 years old **Seretide 100 Accuhaler®** (200mcg BDP equiv./day) 1 puff od if well controlled License: From 4 years old	**Symbicort 200/6 Turbohaler®** (400mcg BDP equiv./day) 1 puff bd License: From 12 years old **Seretide 100 Accuhaler®** (400mcg BDP equiv./day) 1 puff bd License: From 4 years old **#Relvar 92/22 Ellipta®** (1000mcg BDP equiv./day) 1 puff od License: From 12 years old	**Symbicort 200/6 Turbohaler®** (800mcg BDP equiv./day) 2 puffs bd License: From 12 years old **Seretide 250 Accuhaler®** (1000mcg BDP equiv./day) 1 puff bd License: From 12 years old **#Relvar 92/22 Ellipta®** (1000mcg BDP equiv./day) 1 puff od License: From 12 years old
				#Note: Relvar 92/22 has been designated as both a low and medium dose	
Meter Dose Inhalers (MDI) Second choice if DPI not appropriate	**Clenil Modulite®** 50mcg/dose 1 puff bd (off-label) to 2 puffs bd License: 2-11 years old **Flixotide 50mcg/dose Evohaler®** (200mcg BDP equiv./day) 1 puff bd License: From 4 years old	**Clenil Modulite®** 100mcg/dose inhaler 2 puff bd License: 2-11 years **Flixotide 50mcg/dose Evohaler®** (400mcg BDP equiv./day) 2 puffs bd License: From 4 years old	**Combisal® 25/50** (100mcg BDP equiv./day) 2 puffs od if symptoms under control License: From 4 years old	**Combisal® 25/50** (200mcg BDP equiv./day) 2 puffs bd License: From 4 years old	**Combisal® 25/125** (1000mcg BDP equiv./day) 2 puffs bd License: From 12 years old
Breath Actuated MDI Second choice if DPI not appropriate	**Qvar 50mcg/dose Easi-Breathe®** 1 puff bd License: From 12 years old	**Qvar 100mcg/dose Easi-Breathe®** 1 puff bd License: From 12 years old			

Salbutamol If needs more than 10 puffs in 4 hours, refer to emergency services License: From 4 years old	All patients who are **not** on a MART regimen should also be given a salbutamol inhaler for as needed use (PRN)	
	DPI	**Easyhaler® Salbutamol** 100mcg 1-2 puffs PRN **Ventolin Accuhaler®** 100mcg 1-2 puffs PRN
	MDI	Can give up to 10 puffs if acutely unwell as per Asthma Action/Wheeze plan **Salamol® Inhaler** 100mcg 1-2 puffs PRN **Airomir® Inhaler** 100mcg 1-2 puffs PRN

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Maintenance and Reliver Therapy (MART)

Consider this if patient has inadequate control and frequent use of reliever medication and/or previous exacerbations requiring medical intervention. Patients must have education on the use of the inhaler as MART, and clinicians must be confident patients understand how to use it appropriately. Patients should be advised to always have their inhaler available for rescue use. Salbutamol PRN is **not** required in addition to MART. Practices should monitor compliance and any dose-related adverse effects.

Provide a **steroid card**

Product for MART	Inhaler device	MART dosing	Max daily dose	Age restrictions
Symbicort 100/6	DPI Turbohaler	1 puff bd + PRN	12 puffs*	12 years +
Symbicort 200/6	DPI Turbohaler	1-2 puffs bd + PRN	12 puffs*	12 years +

*12 puffs daily can be used for a limited time but patients using >8 puffs/day need urgent clinic review

Leukotriene Receptor Antagonist (LTRA)

Consider trial of a LTRA if asthma control remains suboptimal after the addition of a LABA to low dose ICS and review the response to treatment in 4 to 8 weeks' time. If asthma remains uncontrolled on a low dose ICS and LTRA, stop the LTRA and refer to asthma specialist for further investigation

Drug	Dose	License
Montelukast chewable sugar free tablets	5mg in the evening	6-14 years old
Montelukast 10mg tablets	10mg in the evening	15 years old +
Montelukast 4mg granule sachets sugar free	ONE sachet in the evening	6 months-5 years
Montelukast 4mg chewable tablets sugar free	4mg in the evening	2 years – 5 years

Spacers

- Spacers should be used with all MDIs and encourage children >3 years old (with no additional needs) to use the mouthpiece instead of the mask.
- Spacers have been shown to improve lung drug deposition and reduce side effects
- They should be **cleaned monthly** and **replaced annually**
- Community pharmacists can provide spacers for all children using MDIs.

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Diagnosis

Ensure correct diagnosis. Consider spirometry from 5 years old

Refer to: BTS/SIGN Asthma Guidelines Quick Reference Guide 2019, P.2-6

Non-pharmacological Asthma Care

- Family smoking exposure and smoking cessation for parents
- Weight loss
- Breathing exercises

Medications

See inhaler table on next page

- ☑ Check compliance and inhaler technique **before** stepping up
- ☑ Right breathe website has good inhaler technique videos
- ☑ All inhalers **must** be prescribed by brand
- ☑ Ensure device consistency across therapy to enhance patient compliance
- ☑ Consider if **MART** regimen if more suitable
- ☑ Spacers should be used with **all** MDIs. See for more info above

Reviews

- At **every** review and **before** stepping up therapy check; peak inspiratory flow, asthma control, exacerbations, time off school, OCS use, inhaler technique, adherence, SABA reliance, trigger factors
- Consider the Beclometasone Dipropionate (BDP) equivalence of each inhaler before switching devices
- Consider Childhood Asthma Control Test when reviewing patients
- Always check adherence using dispensing records and Medication Adherence Rating Scale (MARS) questionnaire. For guidance on non-adherence, see the NICE guideline
- Every patient **must** have a Personalised Asthma Action Plan or Wheeze plans
- **Rhinitis** is a risk factor for increasing severity of asthma. Always consider allergen avoidance
- Consider stepping therapy **down** after ≥ 3 months complete asthma control

Refer to secondary care if:

- Any doubt about diagnosis
- Admission for asthma attack
- Continued uncontrolled asthma symptoms with good adherence
- Severe or life-threatening exacerbation
- Consideration of monoclonal antibody therapy (tertiary referral required)
- ≥2 courses of oral prednisolone in 12 months despite medical optimisation
- Reached maximum therapy available

Consider using Asthma Advice & Guidance (via e-RS) for subthreshold referral queries

BNSSG Medicines Optimisation team with Bristol Royal Hospital for Children.
Approved by BNSSG Area Prescribing and Medicines Committee December 2022.
Review December 2023

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