Bath and North East Somerset, Swindon and Wiltshire Together

CYP Asthma

Dr Seb Gray

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NICE National Institute for Health and Care Excellence

British Thoracic Society

Healthcare Improvement Scotland | SIGN

NICE guideline

Asthma: diagnosis, monitoring and chronic asthma management (BTS, NICE, SIGN)

NICE guideline
Published: 27 November 2024

www.nice.org.uk/guidance/ng245

Bath and North East Somerset, Swindon and Wiltshire Together

Asthma Guidance for Children & Young People (CYP) in Bath & Northeast Somerset, Swindon & Wiltshire (BSW)

Dr Seb Gray, Paediatric Consultant (Salisbury NHS FT) & CYP Asthma Lead for BSW ICB
Miss Anne Whiting, CYP Physiotherapist, ACP & non-medical prescriber (Salisbury NHS FT)

January 2025

Bath and North East Somerset,
Swindon and Wiltshire Together

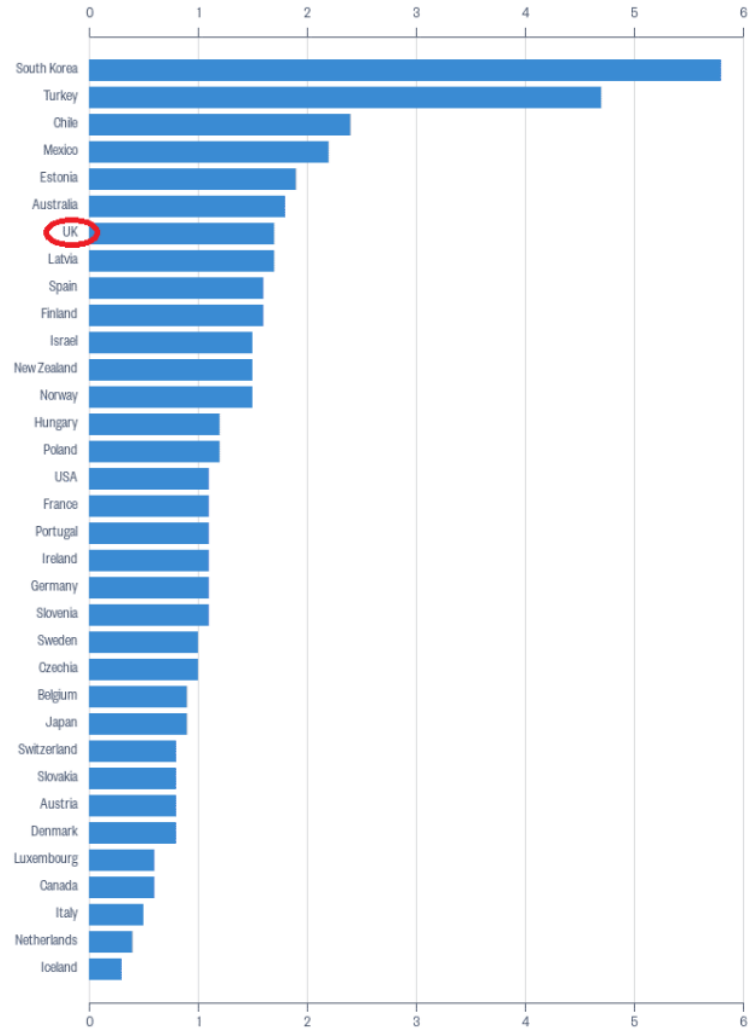
How good are we at managing asthma in the UK?

Age-standardised death rate for asthma in OECD countries

figure.nz

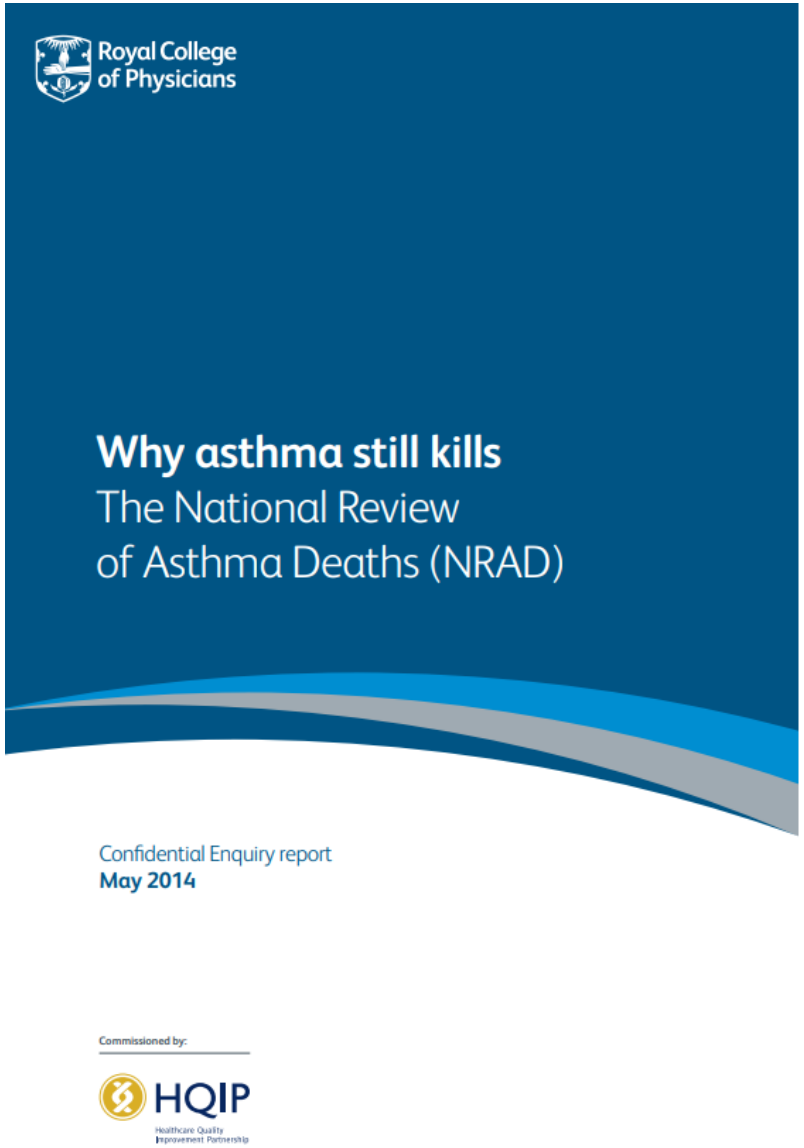
2012, rate per 100,000 population

Provider: OECD



46% of deaths were avoidable

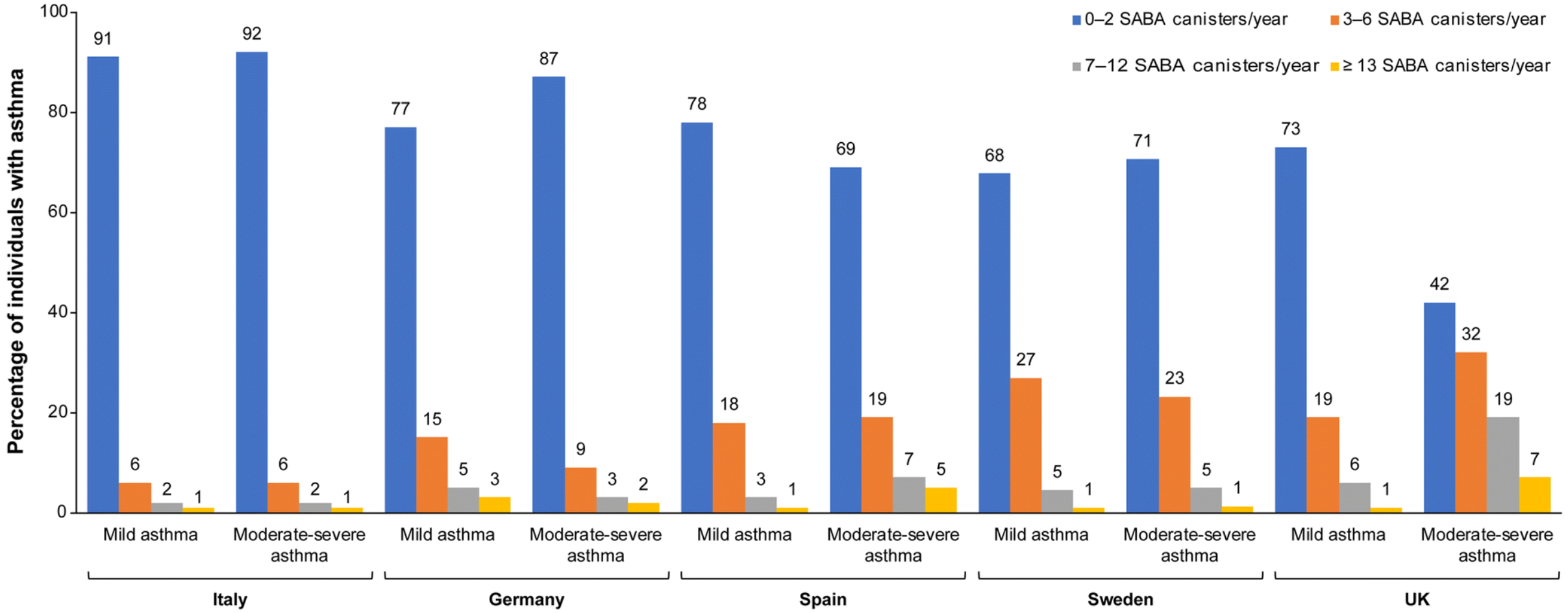
19 recommendations made



SABINA: An Overview of Short-Acting β_2-Agonist Use in Asthma in European Countries

Original Research | Open Access | Published: 24 January 2020 | 37, 1124–1135 (2020)

SCAN ME



Children and young people (5-16)

(with a history of suggestive asthma)

Recommended objective tests for diagnosing asthma in children and young people (5-16)

1. FeNO (if available)
2. Bronchodilator reversibility (BDR) with spirometry
3. Peak expiratory flow variability
4. Skin prick test or total IgE and blood eosinophils

BDR delayed or not available

Children (under 5)

(with a history of suggestive asthma)

Objective tests are not usually possible in children under 5, so diagnosis should be based on clinical suspicion, test of treatment (using a low dose inhaled corticosteroid (ICS)) and regular review.

Managing Recurrent Wheeze/Asthma in Children aged < 5 years (primary care)

Healthier Together

Review every 6 months:

Assess symptoms
Check inhaler technique
Address environmental factors
Update personal asthma action plan

Stepping Up or Down:

Go to next step if symptoms not controlled

Go to previous step if symptoms well controlled

INDICATIONS

Recurrent viral-induced wheeze episodes (>3 per year)
Symptoms suggestive of asthma*
Check no Red Flags for alternative diagnosis#

STEP 1

8 week trial of very low dose ICS #. Consider LTRA if difficulty administering inhalers

Stop trial & re-assess symptoms 8 weeks later

STEP 2

Improved on trial & symptoms recurred

Re-start very low dose ICS/ LTRA

No improvement

Consider alternative diagnoses**
If diagnostic uncertainty and no improvement, consider referral to general paediatrics

STEP 3

Add LTRA (if not started initially) or increase ICS to low dose #

STEP 4

If no improvement, refer to general paediatrics

 # Recommended doses of ICS

- **Low dose:** Beclomethasone 200mcg bd Fluticasone 100mcg bd
- **Very low dose:** Beclomethasone 100mcg bd Fluticasone 50mcg bd

See rightbreathe.com for spacer/inhaler options

*Symptoms suggestive of asthma in children aged <5 years
Two or more of wheeze, cough, breathlessness & chest tightness
Recorded observation of wheeze
Recurrent episodes
Symptom variability
Absence of symptoms suggesting alternative diagnoses
Personal or strong family history of atopy
**Alternative diagnoses
Cystic fibrosis/Bronchiectasis
Primary ciliary dyskinesia
Chronic lung disease of prematurity
Developmental lung anomaly
Neuromuscular disorders
Protracted bacterial bronchitis
Recurrent aspiration or Reflux
Immune/Host defence disorders
Pertussis
Tracheal/ laryngeal disorders
Tuberculosis
Missed foreign body

#Red Flags for alternative diagnoses

Failure to thrive, unexplained clinical findings (e.g. focal signs, abnormal voice or cry, dysphagia, inspiratory stridor), symptoms since birth, perinatal respiratory problems, excessive vomiting, severe URTIs, persistent wet or productive cough, nasal polyps, family history of unusual respiratory disease

ICS – Inhaled corticosteroid; LTRA – Leukotriene receptor antagonist; URTI – Upper respiratory tract infection

Based on guidance from Wessex Paediatric Respiratory Network, Sebastian Gray, Graham Roberts, V4 14 11 2020

Management and treatment of children under 5 years old

Children (under 5)

on-going treatment if symptoms reoccur

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

Consider 8 - 12 week trial of twice daily paediatric low-dose ICS — With SABA

If symptoms do not resolve during 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 trial

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

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

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

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

If asthma is uncontrolled

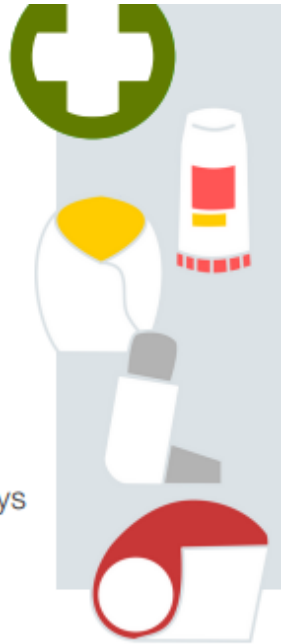
Consider an LTRA in addition to the ICS for a trial of 8 - 12 weeks, then stop if ineffective or side effects — With SABA

If asthma is uncontrolled

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

Treatment for people newly diagnosed with asthma

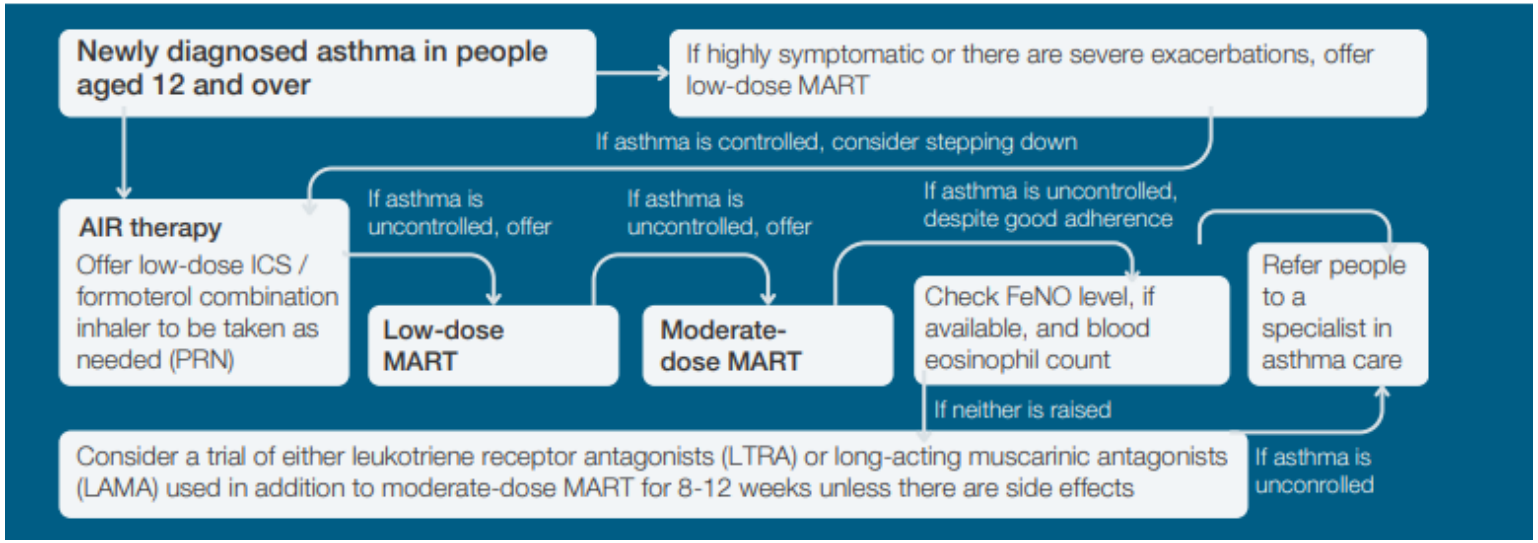
Asthma treatment/inhaler should be based on individual patient criteria and part of a shared decision-making process with the patient. See PCRS's Tailored Inhaler Devices for more information.



Adults and young people (12 years+)

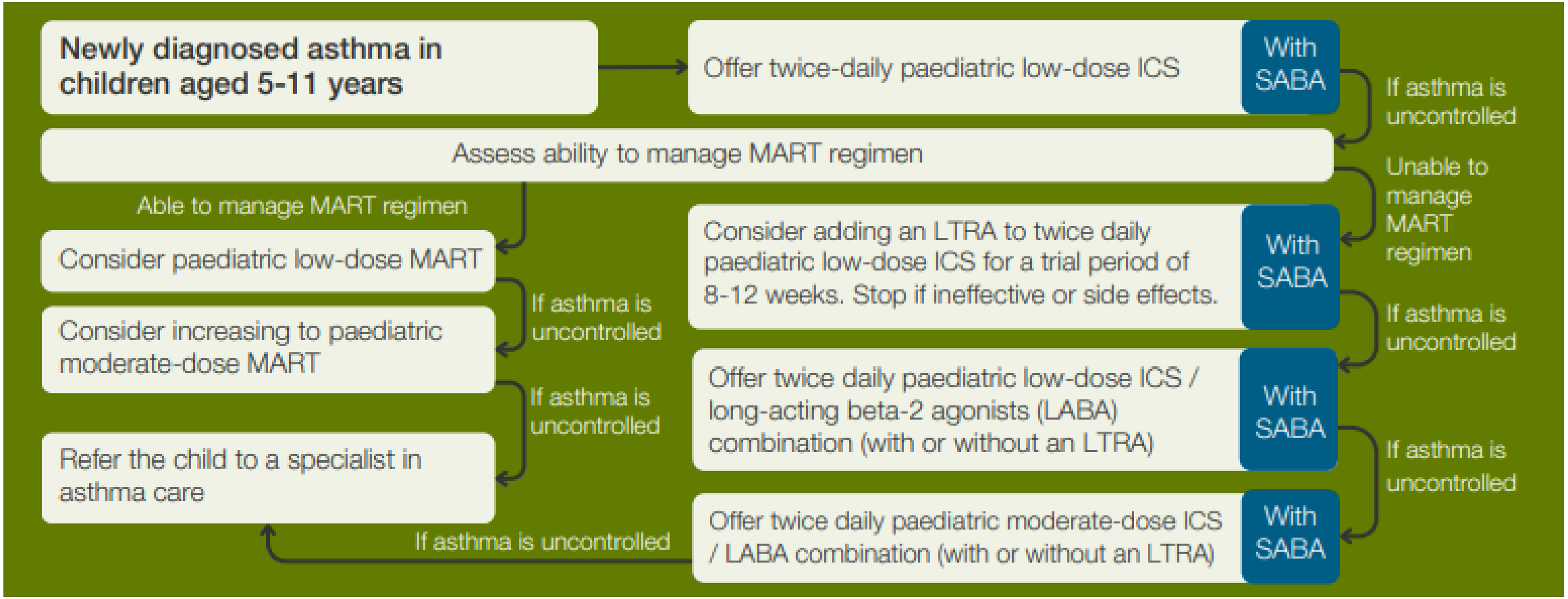
Key points

1. The new NICE/BTS/SIGN asthma guideline now recommends SABA free pathways to reduce the risks associated with SABA overuse. These are anti-inflammatory reliever (AIR) and maintenance and reliever therapy (MART) which use a combination of ICS/formoterol.
2. Only certain ICS/formoterol inhalers are licensed for reliever therapy.



Children and young people (5 -11)

In November 2024, no asthma inhalers were licensed for MART in children under 12, so use would be off-label



Fifteen-minute consultation: Maintenance and reliever therapy for the management of asthma in children and young people

Angela Tang [1], Sebastian Jason Gray [2], Gary Connett [3,4], Katharine Pike [5]

FIGURE 1. EXAMPLE STEPWISE AIR/MART TREATMENT PLAN FOR CHILDREN AGED 12 YEARS +

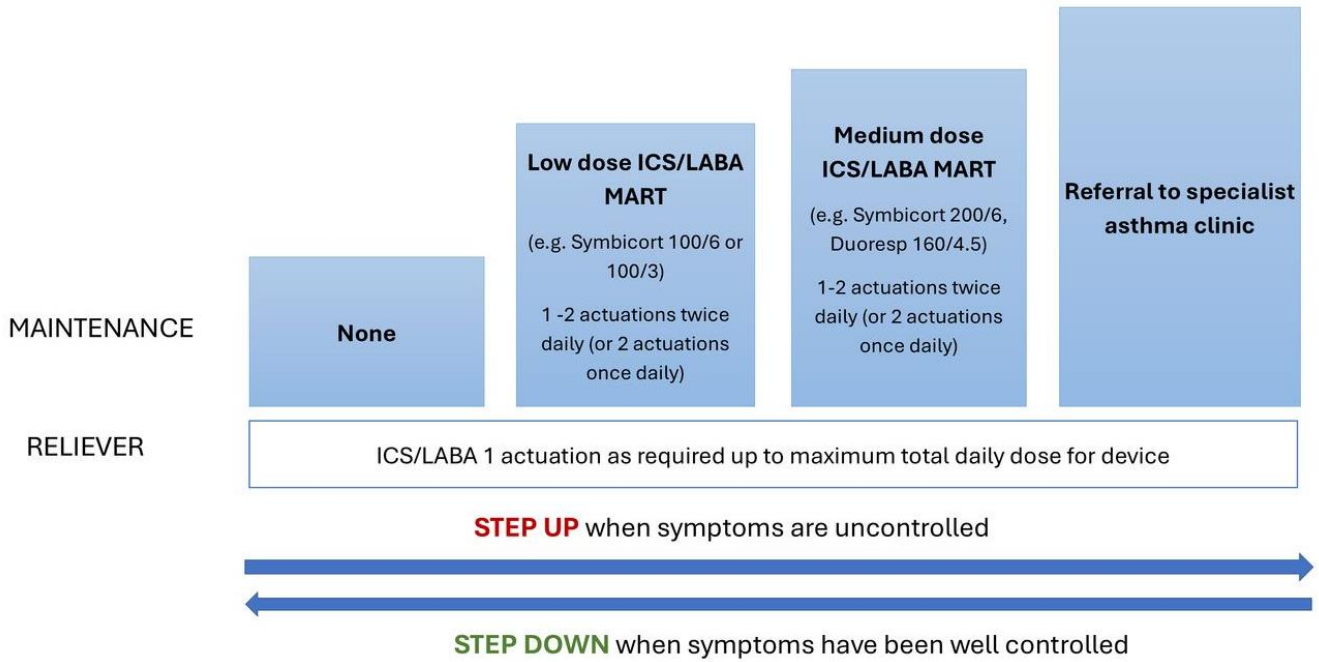


Table 2 Example inhaler devices licensed for AIR/MART in the UK and recommended dosing, other devies are gaining licenses for use in CYP[21–23]

Inhaler	Recommended AIR/MART dosing	Maximum dose	Licence	Estimated carbon footprint/actuation (g CO2e) midpoint value	Indicative carbon footprint/ inhaler (g CO2e)
Symbicort 100/6 Turbohaler DPI (Budesonide 100/formoterol 6) 	**MART**: 2 actuations daily in 1–2 divided doses. **Plus** 1 actuation as required for relief of symptoms, increased if necessary up to 6 actuations as required.	Use up to 8 actuations per day. A maximum of 12 actuations per day can be used for a limited time but medical assessment is recommended.	**MART** usage Licensed in children aged 12 years and over.	4.83	579.6
Symbicort 200/6 Turbohaler DPI (Budesonide 200/formoterol 6) 	**MART**: 2 actuations daily in 1–2 divided doses. **Plus** 1 actuation as required for relief of symptoms, increased if necessary up to 6 actuations as required. **As-needed AIR**: 1 actuation as required for relief of symptoms, increased if necessary up to 6 actuations as required.	Use up to 8 actuations per day. A maximum of 12 actuations per day can be used for a limited time but medical assessment is recommended.	Licensed for children aged 12 years and over	6.67	800.4
Symbicort 100/3 pMDI (Budesonide 100/formoterol 3) 	**MART**: 4 inhalations in 1–2 divided doses, increased if needed up to 4 inhalations two times per day. **Plus** 2 inhalations as required for symptoms, increased up to 12 inhalations as required.	Use up to 16 actuations per day. Can be increased to 24 inhalations per day for a limited time but medical assessment is recommended.	Licensed for children aged 12 years and over	286.67 *(This option is less preferred compared with dry powder devices due to significant carbon footprint.)*	34400.4
DuoResp Spiromax 160/4.5 inhalation powder (Budesonide 160/formoterol 4.5)  (Equivalent to Symbicort 200/6)	**MART**: 2 actuations daily in 1–2 divided doses, increased if necessary to 2 inhalations two times per day. **Plus** 1 actuation as required up to 6 inhalations as required, max 8 inhalations per day.	Use up to 8 actuations per day. A maximum of 12 actuations daily can be used for a limited time but medical assessment is recommended.	Licensed in children aged 12 years and over.	6.8	630
WockAIR 160/4.5 inhalation powder device** (Budesonide 160/formoterol 4.5)  (Equivalent to Symbicort 200/6)	**MART**: 1–2 actuations two times per day or 2 actuations once daily. **Plus** 1 actuation as needed up to 6 actuations in a single occasion.	Use up to 8 actuations per day. Maximum of up to 12 actuations per day for a limited time but medical assessment is recommended.	Licensed in children aged 12 years and over.	No data	No data

*Owned and distributed by Philip Morris International (PMI) and not endorsed by British Thoracic Society (BTS) and Asthma + Lung UK.[24]
AIR, anti-inflammatory reliever therapy; DPI, dry powder inhaler; MART, maintenance and reliever therapy; pMDI, pressurised metered-dose inhaler.

Core themes

- The whole school approach
- Asthma Friendly Schools
- British Values and Prevent
- Domestic Abuse
- Early Years
- Health protection
- Supporting pupil participation
- Working with parents
- School nurses
- PSHE

Asthma Friendly Schools

Bath and North East Somerset, Swindon and Wiltshire Together

The Asthma Friendly Schools programme, open to all schools in Wiltshire, will not only support your pupils' physical health but also their educational attainment through improved attendance and curriculum engagement.

Aims

- To reduce avoidable harm to children and improve quality of life
- To reduce asthma related school absences
- To promote good asthma management for

Wiltshire Asthma Friendly Schools (September 2024)

- Nursteed Community Primary School
- Salisbury Cathedral School

Asthma Friendly School Criteria Checklist

From May 2024 Wiltshire schools can accredit as Asthma Friendly Schools, using the following criteria:

A1. Our school has an Asthma Policy

A2. Our school has a register of all students with

Learn Live broadcast to schools

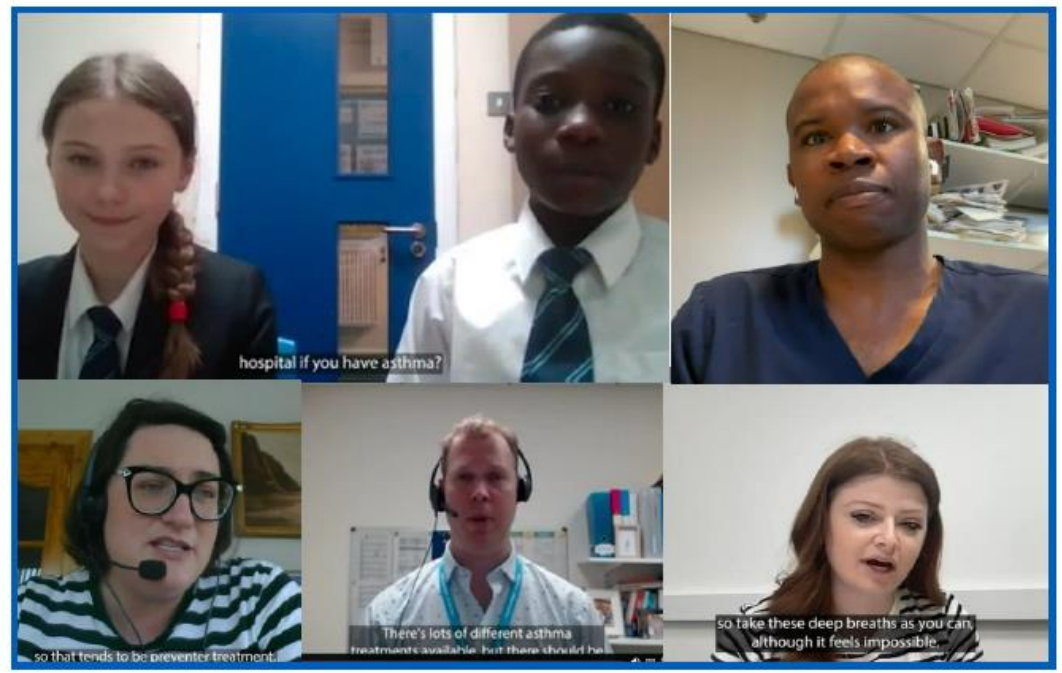
For 2024, the programme team commissioned LearnLive to develop a “live” broadcast focused on children and young people’s asthma called **#AskAboutAsthma 2024: How we can all support young people with asthma to live their best lives.** This was broadcast Friday 13th September at 10am. It included a presentation from Seb Gray focussing on asthma for older primary school children and a Q&A session with asthma paediatrician Chin Nwokoro, young person with lived experience Issy Utley and asthma CNS Emily Guilmant-Farry.

6,682
people watched the broadcast live (approx. 74 schools)

87%
of views were from London

“What steps should I take if a student has an asthma attack during class?”

8,391
people watched the broadcast on demand



Fifteen-minute consultation: considering greener asthma treatments for children and young people

Olivia Falconer ,[1] Katie Knight ,[2] Sebastian Jason Gray[1]

Clinical bottom line

- Getting basic asthma care right is key
- Encourage patients to dispose of inhalers in designated bins
- Consider switching to a DPI or more sustainable inhaler device only if appropriate for your patient and their current situation
- The greenest treatment plan will optimally manage symptoms with minimum medication, keeping the patient well and out of hospital

What’s about steroids for asthma exacerbations?

Lightning Learning: Steroids in Asthma

em3.org.uk @EM3FOAMed

#EM3
East Midlands Emergency Medicine Educational Media

STOP!

The UK has some of the highest rates of asthma in the world affecting about 1-in-10 children.

In 2018 there were 25,128 cases of under-16s going to hospital with asthma. *(NHS England)*

- ➔ **Steroids are used to reduce acute exacerbation, severity and duration.**
- ➔ Treatment options include a short course of oral corticosteroid *(typically 3 days of oral prednisolone)*.
- ➔ Data suggests that the use of oral **dexamethasone is non-inferior** compared to oral prednisolone.[1]
- ➔ Consider a **single dose** of oral dexamethasone for acute asthma exacerbation in children.

LOOK

There is increased evidence of vomiting with **prednisolone.**[2]

With the use of **dexamethasone** we can reduce...

- ✔ The incidence of children vomiting at home and ED
- ✔ Non-compliance at home
- ✔ TTO dispensing

LEARN

DEXAMETHASONE DOSE

Oral ➔ 0.6 mg/kg [3]

(maximum of 16 mg/dose)

References:

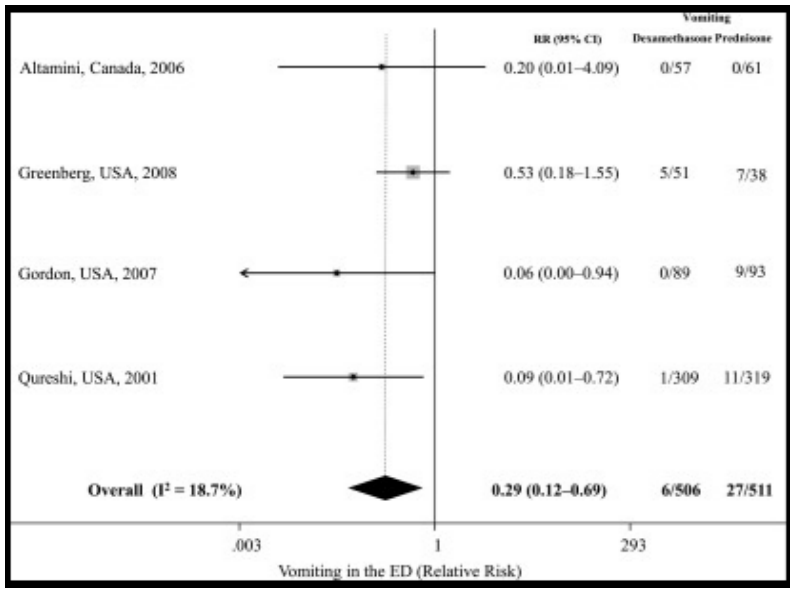
1. **Comparative efficacy of oral dexamethasone versus oral prednisone in acute pediatric asthma** *(F. Qureshi et al.)* http://bit.ly/2kuWKB9
2. **Dexamethasone for acute asthma exacerbations in children: a meta-analysis** *(G.E. Keeney et al.)* http://bit.ly/2ks1jfn
3. **Management of Wheeze and Asthma in Children** *(Local Paediatric ED guideline)* http://bit.ly/2IZRWE8

Author: *Shien Chen Lee* **Date:** *23.09.2019* **Version:** *1.0*

Clinical bottom line

- A single dose of 0.3 mg/kg dexamethasone orally for children presenting acutely with asthma or wheeze is non-inferior to 3–5 days of oral prednisolone (1 mg/kg/day) (grade A).
- Higher doses of dexamethasone (0.6 mg/kg) for children under 5 years result in a higher corticosteroid dose than recommended in current national British Thoracic Society guidance (grade A).

	Dose	Formulation	Cost per dose	Total cost equiv. 3/7	Total cost equiv. 5/7	Comments
Prednisolone @ 2mg/kg	30mg	5mg tablets	10 pence	30p	50p	
Dexamethasone @ 600microgram/kg	9mg	2mg/5ml	£1.50	£1.50	£3.00	Strength of liquid is impractical (e.g. 9mg dose = 22.5ml) Max dose cap is 16mg (=a whopping 40ml!)
		2mg soluble tablets	£1.20	£1.20	£2.40	Increases our costs by approx. 300-400%, so clearly not an easy sell from that perspective.



Oral systemic corticosteroids in children with acute asthma exacerbations: a systematic review and network meta-analysis

Shunsuke Amagasa ,[1] Shu Utsumi ,[2] Kie Okajima,[1] Satoko Uematsu[1]

SCAN ME

ABSTRACT

Objective To evaluate the efficacy differentials among corticosteroid regimens by type, dosage and duration, we conducted a systematic review and network meta-analysis of randomised controlled trials (RCTs).

Methods We searched four databases from their inception to March 2024 and included RCTs that evaluated oral corticosteroids for asthma exacerbations in young people aged <21 years. We compared six regimens (dexamethasone (DEXA) 0.3 mg/kg/day administered for 1 day, DEXA 0.6 mg/kg/day for 1 day, DEXA 0.6 mg/kg/day for 2 days, prednisolone (PSL) 1.0 mg/kg/day for 3 days, PSL 1.0–1.5 mg/kg/day for 5 days and PSL 2.0 mg/kg/day for 5 days). Primary outcome was relapse within 14 days, defined as unplanned visit to an emergency department or primary care physician.

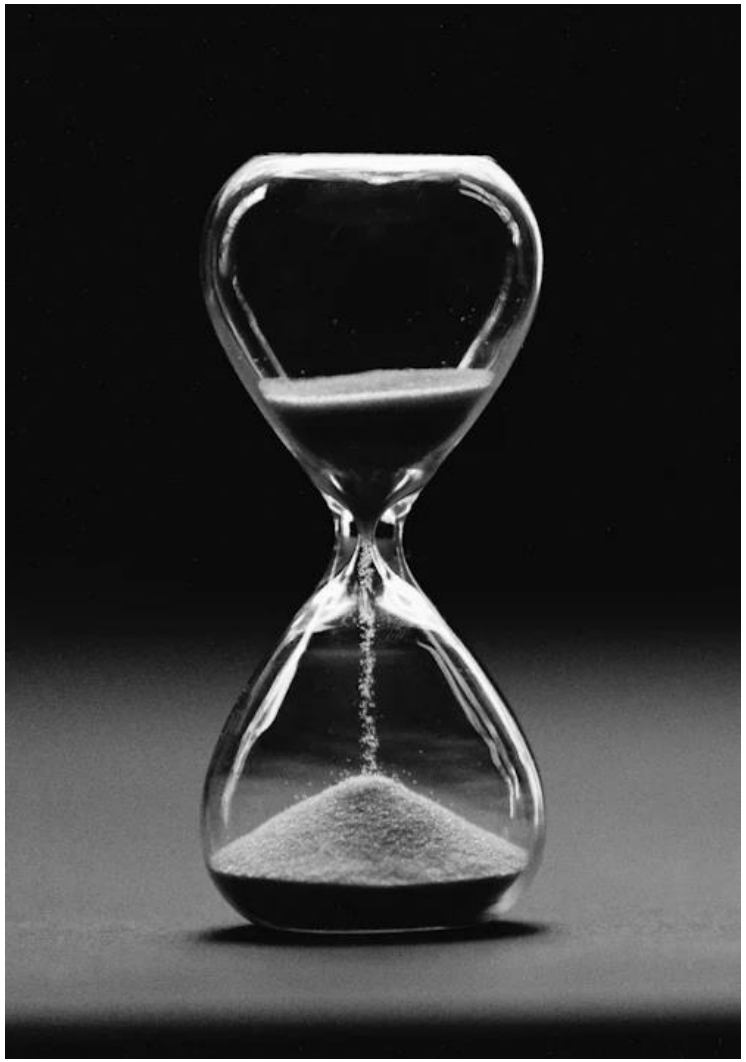
Results Eleven studies involving 2353 patients were analysed in our quantitative synthesis. There were no significant differences in the relapse rates among 15 comparisons of six regimens. As part of the results, the network estimate showed that DEXA (0.3 mg/kg/day×1 day) compared with PSL (1.0 mg/kg/day for 3 days) had a risk ratio (RR) of 0.99 (95% CI 0.56 to 1.74), and DEXA (0.6 mg/kg/day for 2 days) compared with PSL (1.0–1.5 mg/kg/day×5 days) had an RR of 1.29 (95% CI 0.84 to 1.98). The certainty of the evidence for the included comparisons was low to very low.

Conclusion In this network meta-analysis, there were no significant differences in the efficacy of commonly used corticosteroid regimens for acute exacerbations in childhood asthma. Short-term oral DEXA may be an acceptable alternative to a longer course of PSL.

PROSPERO registration number CRD 42023449189.

Systemic steroids

- **88.0%** of CYP received systemic corticosteroids during their admission, but these were not given early: only **38.7%** of CYP aged 6 years or older who had not received systemic corticosteroids before arrival at hospital, **received them within 1 hour of arrival**.
- The **median time** to administration of systemic corticosteroids was **1 hour** (IQR 1–3 hours).




What about preschoolers?

Impact of oral corticosteroids on respiratory outcomes in acute preschool wheeze: a randomised clinical trial

Alexandra Wallace ,[1,2] Owen Sinclair,[2,3] Michael Shepherd,[2,4] Jocelyn Neutze,[2,5] Adrian Trenholme,[2,5] Eunicia Tan,[6,7] Christine Brabyn,[8] Megan Bonisch,[4] Naomi Grey,[2] David W Johnson,[9] David McNamara,[2,10] John M D Thompson,[2] Innes Asher,[2,10] Stuart R Dalziel[2,4,7]

WASP (Wheeze and Steroids in Preschoolers) STUDY

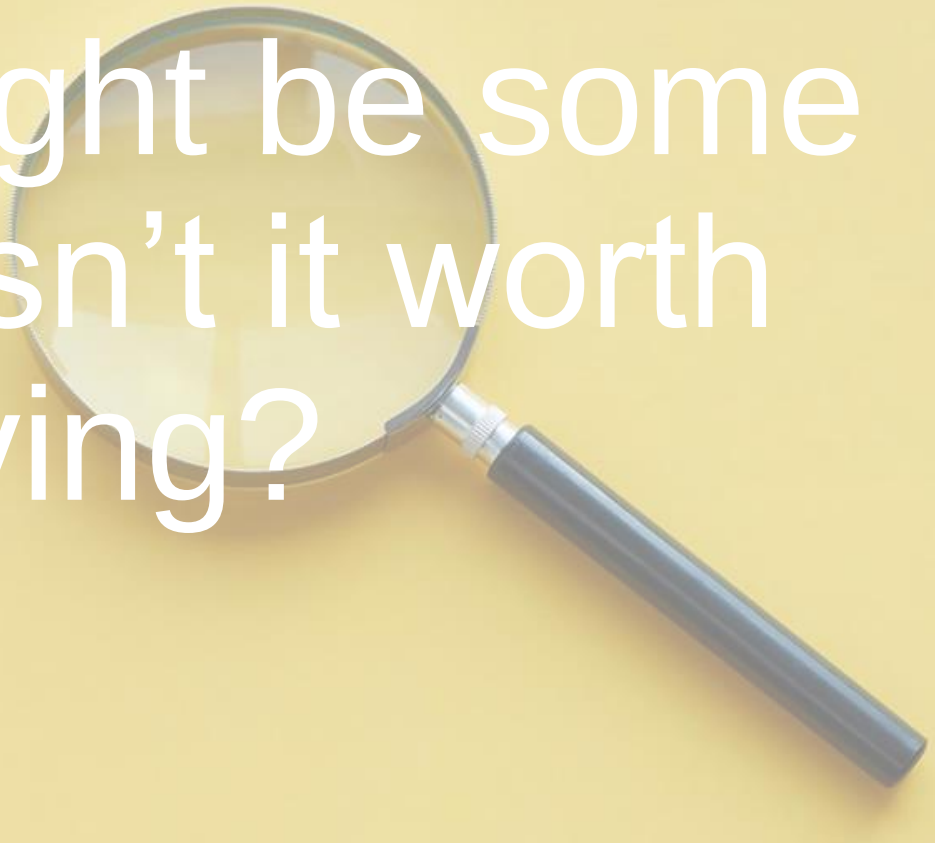
What is already known on this topic?

- Wheeze associated with respiratory illness is common in preschool children and is a frequent cause for hospital presentation or admission.
- Unlike asthma in older children, the pathophysiology of wheeze in preschool children is multifactorial.
- Despite conflicting evidence, the British Thoracic Society recommends administration of a 3-day course of oral prednisolone to preschool children with moderate or severe wheeze.

What this study adds?

- Prednisolone does not alter respiratory outcomes at 24 hours or beyond.
- Prednisolone may reduce admission rate and escalation of therapy in preschool children with wheeze.
- Further studies are required to determine whether a single dose of oral prednisolone improves short-term respiratory outcomes for preschool children presenting to hospital with wheeze.

If there might be some benefit, isn’t it worth giving?



Children and the Risk of Fractures Caused by Oral Corticosteroids

TP VAN STAA,[1–3] C COOPER,[1] HGM LEUFKENS,[2] and N BISHOP[4]

	No. of cases	*No. of controls*	*Crude OR (95% CI)*	*Adjusted OR (95% CI)**
Use of oral corticosteroids				
Non-use	20,716	20,876	Reference	Reference
Number of prior prescriptions				
≥4	172	116	1.52 (1.19–1.93)	1.32 (1.03–1.69)
Daily dose (mg prednisolone or equivalent)				
≥30	224	167	1.37 (1.11–1.68)	1.24 (1.00–1.52)

		No. of prior prescriptions		
No. of cases	*Overall [Adjusted OR (95% CI)]*	*1 [Adjusted OR (95% CI)]*	*2/3 [Adjusted OR (95% CI)]*	*≥4 [Adjusted OR (95% CI)]*
Humerus				
2205	1.74 (1.20–2.53)	1.44 (0.85–2.44)	1.99 (0.99–4.02)	2.17 (1.01–4.67)

What if they had been brought in via ambulance?

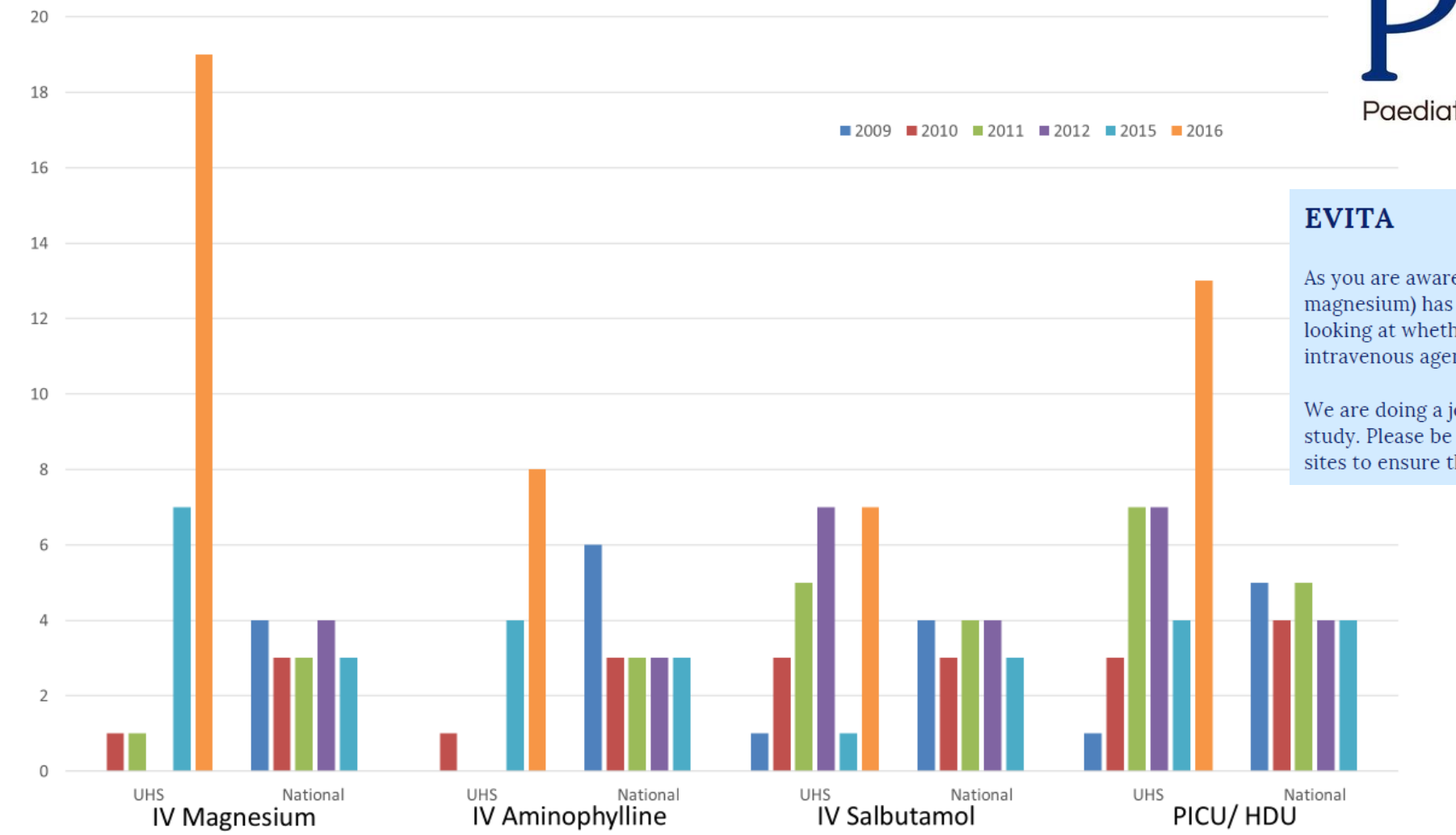
Southend boy's asthma death a tragedy foretold, says inquest doctor

3 November 2023

William Gray was described by his mother as a "cheeky" and "clever boy"

The PFD report also raises concerns that experienced hospital paediatric doctors at Mid and South Essex NHS Foundation Trust were unaware that giving intramuscular adrenaline was part of the JRCALC guidelines for life-threatening asthma. This meant that William's presentation at hospital was falsely reassuring.

SCAN ME



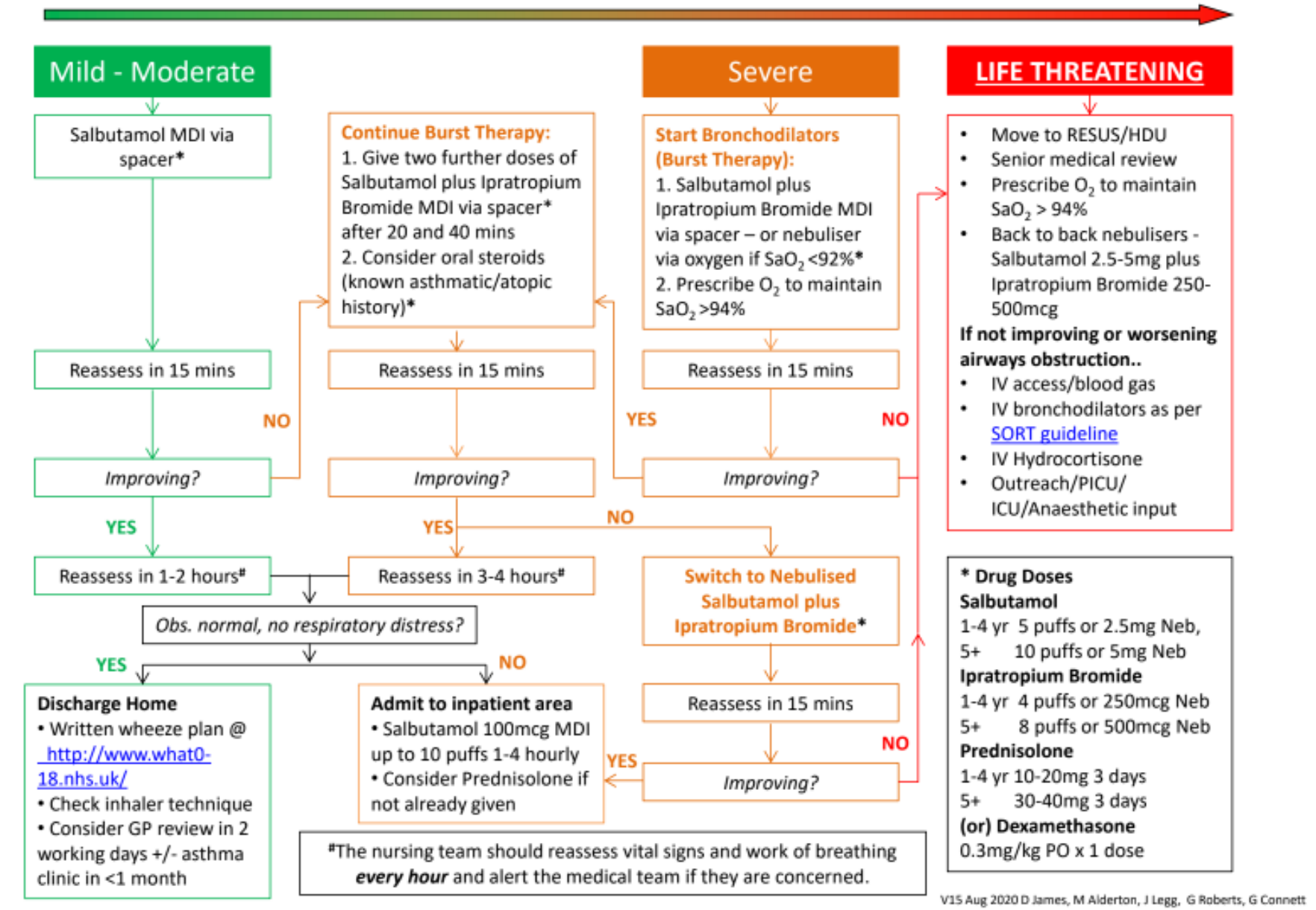
PERUKI

Paediatric Emergency Research in the UK and Ireland

EVITA

As you are aware the EVITA study (an RCT of IV salbutamol, aminophylline and magnesium) has been funded and supported by PERUKI. A further study HOSPA looking at whether High Flow Humidified Oxygen prevents against escalation to intravenous agents has also been submitted to the RfPB.

We are doing a joint EOI form for sites who are interested in being part in either study. Please be aware there are some specific constraints from the HRA as to sites to ensure there is equality of patients demographics and access to care.



V15 Aug 2020 D James, M Alderton, J Legg, G Roberts, G Connett

What’s the evidence for burst therapy?

Asthma guidelines

Burst therapy for acute asthma

EDITOR,—The management plan for acute asthma in children recommended the early use of corticosteroids and a single dose of salbutamol by nebuliser.[1] This could be followed by further doses of β agonist, up to every 30 minutes, if the patient was not improving. Treatment with intravenous aminophylline was suggested if there was severe acute asthma at presentation or an inadequate response to the above treatment.

No mention was made in the flow diagram or the extended guidelines in *Thorax*[2] of burst therapy with β agonist, which is commonly used in Canada and Australia.[3,5] In children presenting to hospital with acute asthma the use of regular nebulised salbutamol every 20 minutes for the first hour, in doses ranging from 0·05-0·15 mg/kg, is now well established.[4,5] This regimen improves forced expiratory volume, with an earlier peak response, and prevents deterioration between doses. This may obviate the need for admission and for those requiring inpatient treatment may limit the need for more intensive therapy such as intravenous aminophylline with its potential for toxicity.[5]

In conjunction with the early administration of corticosteroids, burst therapy represents a safe and effective method of treating children with acute asthma. Junior medical staff in Britain are often hesitant to give frequent doses of β agonists because of concerns about safety. This form of treatment produces no additional side effects than conventional β agonist treatment and is not associated with the more serious toxicity of intravenous aminophylline.[3,5] We recommend burst therapy with β agonists and corticosteroids as first line treatment of children presenting with acute asthma.

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1 British Thoracic Society. Guidelines for the management of asthma: a summary. *BMJ* 1993;306:776-82. (20 March.)
2 British Thoracic Society. Guidelines on the management of asthma. *Thorax* 1993;48:S1-24.
3 Robertson CF, Smith F, Beck R, Levison H. Response to frequent low doses of nebulized salbutamol in acute asthma. *J Pediatr* 1985;106:672-4.
4 Mellis CM. Important changes in the emergency management of acute asthma in children. *Med J Aust* 1988;148:215-7.
5 Schuh S, Parkin P, Ragan A. High versus low dose, frequently administered, nebulized salbuterol in children with severe, acute asthma. *Pediatrics* 1989;83:513-8.

BMJ. 1993 May 15; 306(6888): 1341.
doi: 10.1136/bmj.306.6888.1341-b

ELSEVIER

The Journal of Pediatrics
Volume 106, Issue 4, April 1985, Pages 672-674

Clinical and laboratory observation

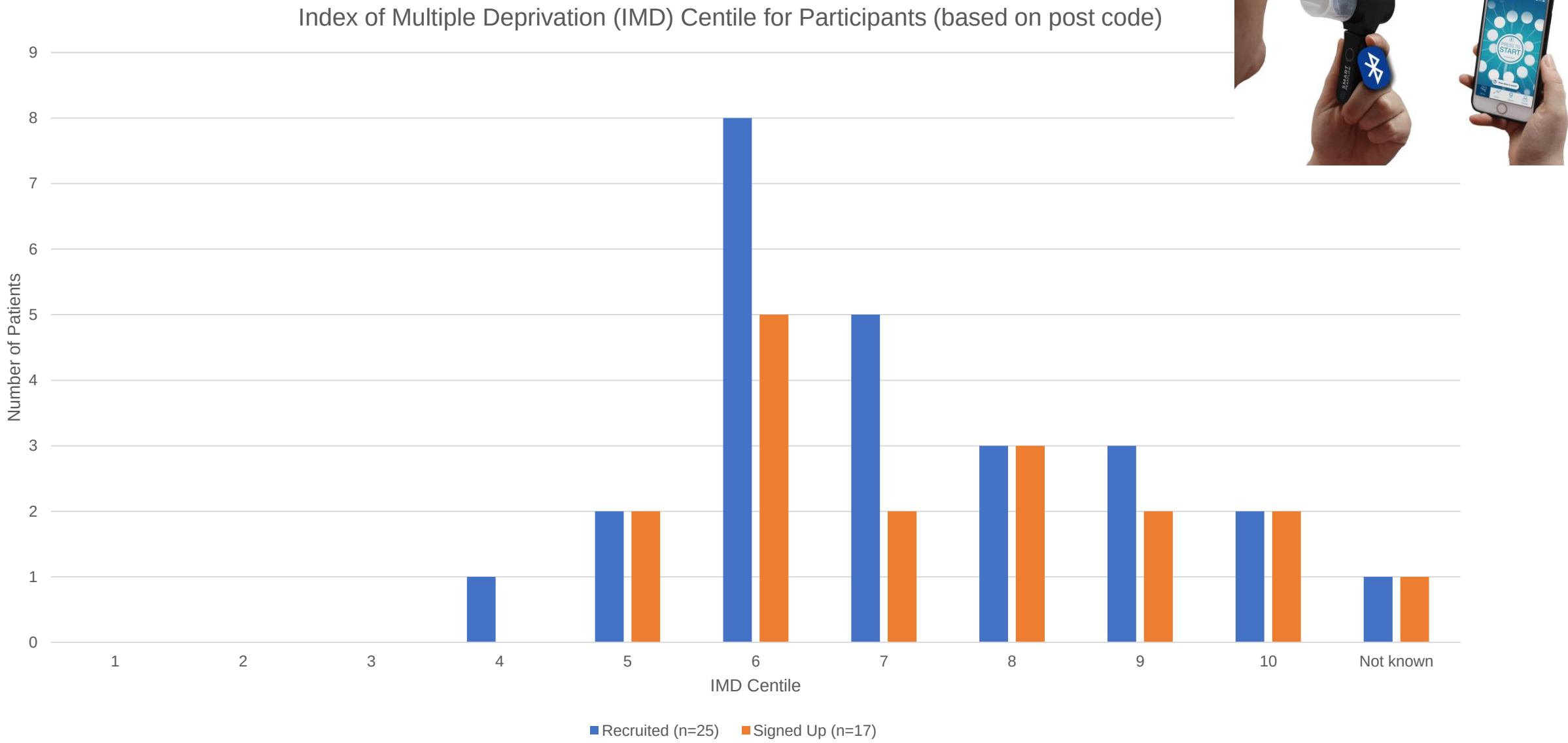
Response to frequent low doses of nebulized salbutamol in acute asthma

M.B. Colin F. Robertson, Freda Smith, M.D. Raphael Beck, M.D. Henry Levison

Patients were entered into one of two treatment groups. Group 1 consisted of patients brought to the Emergency Department on even days of the month, and group 2 on uneven days. Patients in group 1 were given salbutamol 0.15 mg/kg (0.03 ml/kg of the 5% respiratory solution), up to a maximum of 5 mg, at 1-hour intervals for a total of three doses.[7] Group 2 patients were given salbutmol 0.15 mg/kg initially, then 0.05 mg/kg (up to a maximum of 1.7 mg) at 20-minute intervals for a total of six doses (Figure).

Indoor air quality checklist for CYP with asthma (template)

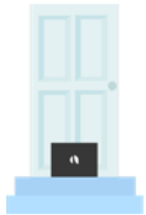
Question	Rationale and guidance
Asthma triggers: Are there any specific triggers for your asthma?	Anything that causes or exacerbates asthma symptoms is considered a trigger. Every CYP is different, but there are some common ones.
Housing: - Does the CYP have their own bed / room? - Do they have a lot of toys on or around their bed?	Stuffed toys can attract dust mites and other irritants on them that can be a trigger for asthma symptoms. Avoid keeping these toys on the bed or around the CYP when asleep, wash or freeze the toys regularly and remember to wash CYP bedding at high temperatures to remove dust mites.
Are there any concerns around housing related to your asthma? - e.g. damp, mould, ventilation, old carpets, condensation or black mould around the windows?	Damp spaces can cause mould to grow, which can cause or worsen symptoms like coughing and, wheezing. Old / uncleaned carpets can house dust mites. Open windows and ventilate your home well (being careful on pollution or pollen high alert days). Try to remove damp and mould if safe and possible to do so, otherwise seek professional help or guidance from landlord / housing authority.
Does your kitchen / bathroom have an extractor fan? - is your hob / stove electric or gas?	Gas cookers release polluting gases which can inflame your airways and lungs. Excess moisture in a bathroom can increase the chances of damp and mould. It's important to use an extractor fan or open windows to ventilate a kitchen and bathroom to remove any pollutants and allergens and reduce any moisture which could cause damp and mould. Ensure central heating, boilers and hobs are regularly serviced.
(To ask the CYP) Does anyone smoke in your home or within the family ? (inclusive of cigarettes, roll ups, pipes, sheesha, vaping, e-cigarettes)? - Are there any wood burning stoves within the home? Space / fan heaters?	Smoke from tobacco products irritate the airways and lungs causing more severe asthma symptoms and long-term reduction in lung function. Wood burning stoves or fires can release particles which can also cause worsening of asthma symptoms. Fan heaters can cause the air within the home to be dry, making it more difficult to breathe normally. Contact your local smoking cessation service to help you quit smoking. Do not smoke within the home, or near your children. Chemicals from smoke remains on your clothing for 2 – 3 hours. Use only 'Ready to burn' woods and (DEFRA approved stoves).
Are there any pets within the home?	Allergens from any pets can be triggered and can cause hay fever like or worsening of asthma symptoms.
Did you know that common products used in the home can sometimes be a trigger for asthma? E.g. - Cleaning products - Candles / incense sticks - Sprays and air fresheners	Spray type products can have volatile organic compounds (VOCs) within them, which can be a trigger for asthma symptoms. Strong smells within candles and incense sticks are likely to irritate or cause asthma symptoms. Spray cleaning products close to the surface to prevent wider spread. Try and keep a window open to ventilate the room / space, especially after having lit a candle or using air fresheners / deodorants etc.
School journey: How does your child get to school? (walk, cycle, driven)	Pollution from cars or other vehicles or high pollen days can be a trigger for asthma symptoms when travelling (e.g. to / from school), even if driven to school. This risk is higher if you live or travel on a busy main road. If possible, try and find alternative routes to school. Encourage the use of outdoor green spaces and walking / cycling / public transport (if appropriate).
Is your home on a main road? - Does your child have to use main roads to get to school?	
Advice: Give advice about how to reduce the effects of potential indoor air pollutants	
Emphasize importance of adherence to asthma action plan and using preventer inhaler regularly	


Index of Multiple Deprivation (IMD) Centile for Participants (based on post code)
Number of Patients
0
1
2
3
4
5
6
7
8
9
1
2
3
4
5
6
7
8
9
10
Not known
IMD Centile
Recruited (n=25)
Signed Up (n=17)

Jane’s (age 6 years) 3 month asthma diagnosis with NuvoAir

1

Mum takes Jane to see GP with recurrent cough and wheeze

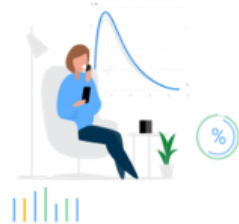


2

GP suspects asthma so refers to **NuvoAir** for home spirometry assessment

3

NuvoAir ships spirometer within 48 hrs and coaches Jane to achieve high quality spirometry



4

2 weeks later, an interpreted report is shared with the GP

5

GP reviews Jane with spirometric evidence of obstruction and FEV1/PEF variability to support confirmation of asthma.

GP commences preventative asthma treatment plan and educates with an action plan

6

GP follows Jane’s spirometry data for a further 4 weeks to check asthma control with new inhalers

7

Jane and Mum learn about and understand asthma and are supported and managed effectively in primary care

The Dangers of Vaping: No smoke without fire

SCAN ME

› Arch Dis Child Educ Pract Ed. 2025 May 10:edpract-2024-328231.
doi: 10.1136/archdischild-2024-328231. Online ahead of print.

Fifteen-minute consultation: Supporting children and young people with vaping cessation

Marisa McMillan [1], Louise Pitman [2], Aishah Farooq [3], Sebastian Jason Gray [4]

Affiliations + expand

PMID: 40348394 DOI: 10.1136/archdischild-2024-328231

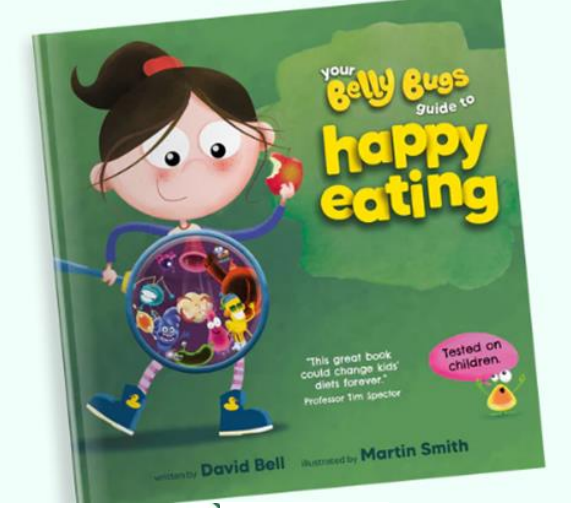
Table 3 Estimating an appropriate NRT starting dose for vaping cessation (extrapolated) from BNFC dosing for cigarette NRT)

NRT form	Strength	Starting dose for smoking cessation	Suitable for no. 'cigarettes' per day	Suitable for vaping cessation (off-label indication) where average daily nicotine delivery to the user is:
Chewing gum	2 mg	1 piece with urges (max 15 per day)	<20	<20 mg
Chewing gum	4 mg	1 piece with urges (max 15 per day)	>20	>20 mg
Sublingual tablets	2 mg	1 tablet per hour	<20	<20 mg
Sublingual tablets	2 mg	2 tablets per hour	>20	>20 mg
Lozenges	1 mg	max 15 per day	<20	<20 mg
Lozenges	2 mg	max 15 per day	<20	<20 mg
Lozenges	4 mg	max 15 per day	>20	>20 mg
Transdermal patch	15 mg/16 hours	1 patch	<10	<10 mg
Transdermal patch	25 mg/16 hours	1 patch	>10	>10 mg
Transdermal patch	14 mg/24 hours	1 patch	<10	<10 mg
Transdermal patch	21 mg/24 hours	1 patch	>10	>10 mg

BNFC, British National Formulary for Children; NRT, nicotine replacement therapy.

The Role of Gut Microbiome in Asthma Development

Key Insights on Immune Function and Inflammation



Dysbiosis and Asthma Risk

1

An imbalance in gut bacteria, known as dysbiosis, is associated with a higher risk of developing asthma (Barcik et al., 2020).

Gut-Lung Axis Implications

2

The gut-lung axis suggests that alterations in gut microbiota can significantly affect respiratory health (Budden et al., 2016).

Probiotics and Prebiotics

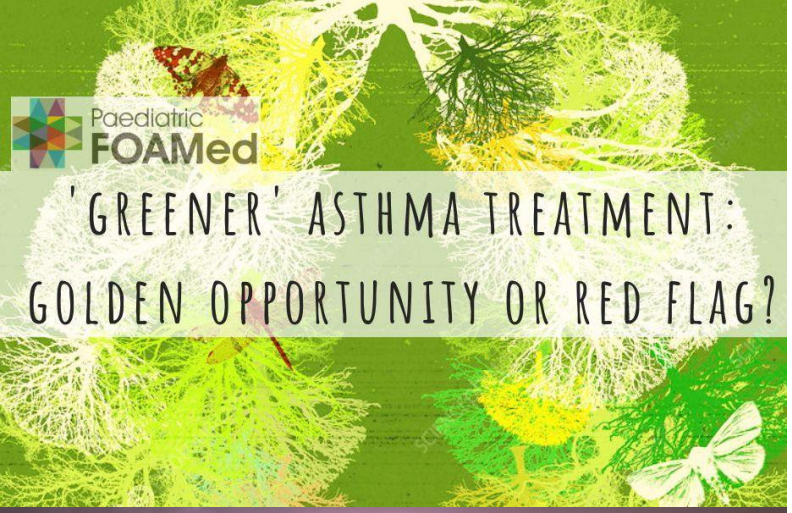
3

Research indicates that probiotics and prebiotics may provide protective benefits against asthma, though findings are still emerging (van de Pol et al., 2011).

Dietary Interventions

4

Understanding the gut microbiome's role can inform targeted dietary strategies to manage asthma symptoms effectively.



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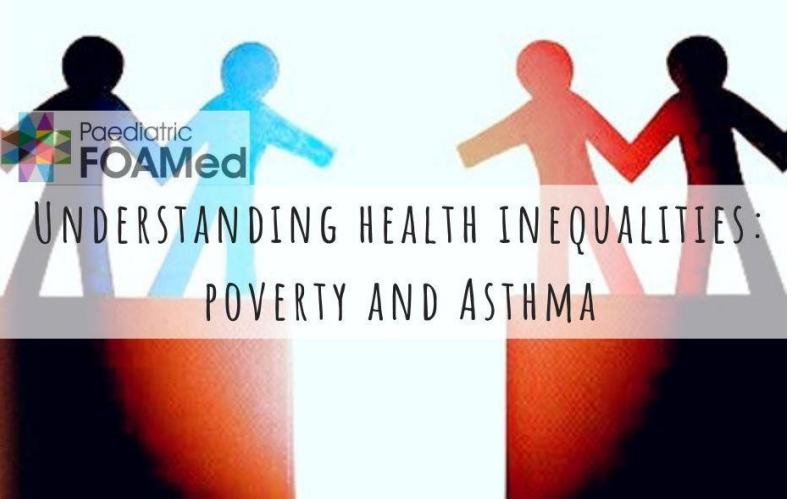

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