Thanks for inviting me to this meeting

Asthma in Children Update

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21 May 2025

Chronic Asthma Management in Children

“NICE-SIGN-BTS”
27 November 2024

Dr. Ezzedin Gouta

Asthma in Children

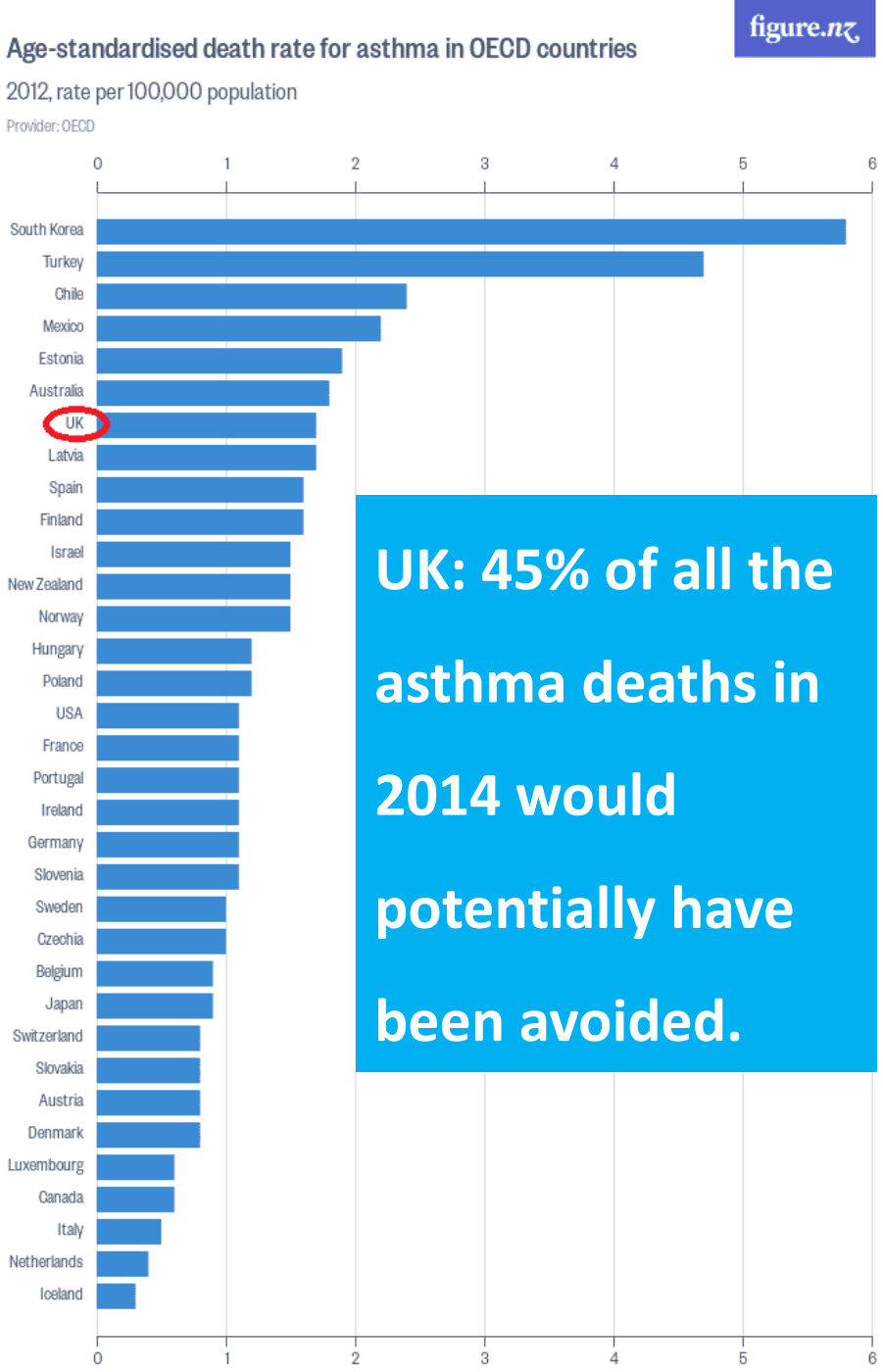
Asthma is a common and treatable disease

1 in 11 children

Most common chronic condition in children and is a common cause of acute hospital attendance

It cannot be cured

But it can be managed and doesn´t have to slow children with asthma down or to threaten their lives



UK: 45% of all the asthma deaths in 2014 would potentially have been avoided.

So how are we doing in the UK?

The UK has one of the highest prevalence, emergency admission and death rates for childhood asthma in Europe

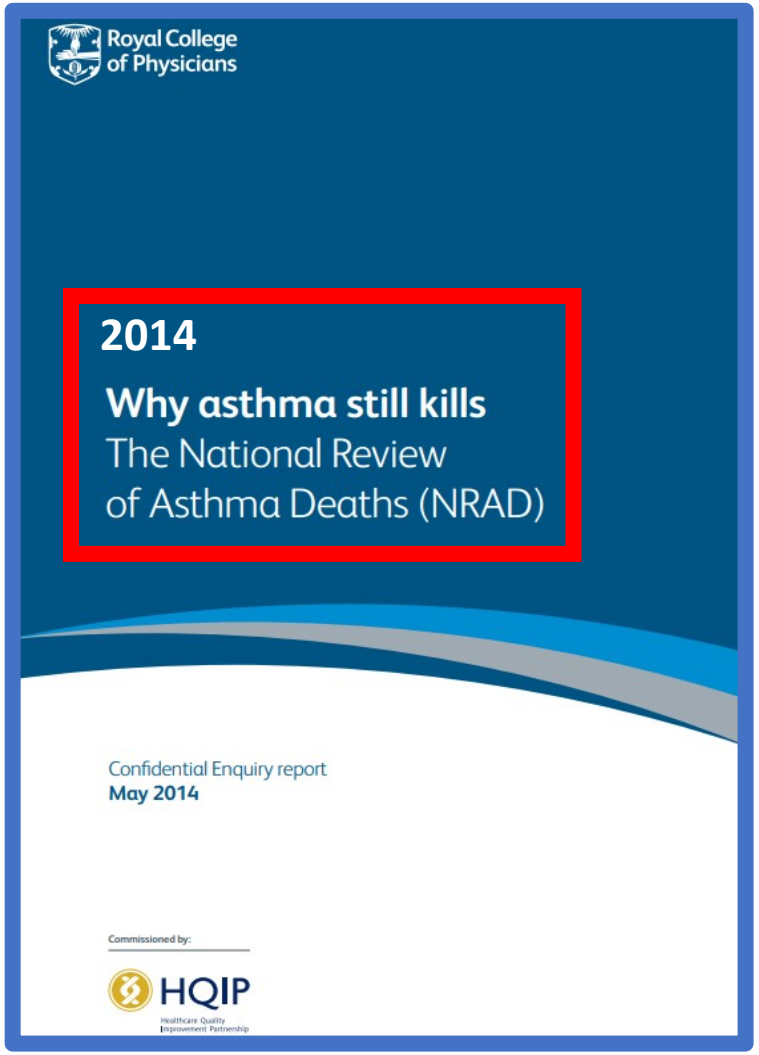
Why?

- Source: OECD (2012) Age-standardised death rate for asthma in OECD countries, http://stats.oecd.org/Index.aspx?DataSetCode=HEALTH_STAT(opens in a new tab)

The National Review of Asthma Deaths why asthma outcomes in the UK are so poor ?

The conclusions of the report were that:

- ❑**Guidelines** on asthma management were often not followed.
- ❑**Personalised asthma action plans (PAAPs),** known to improve asthma care, had **only been given to 23%** of people who died from asthma.
- ❑**There was widespread excessive prescribing of reliever medication** (like Salbutamol) and **under prescribing of preventer medication** (like inhaled steroids) both **associated with poor control and more asthma deaths**.

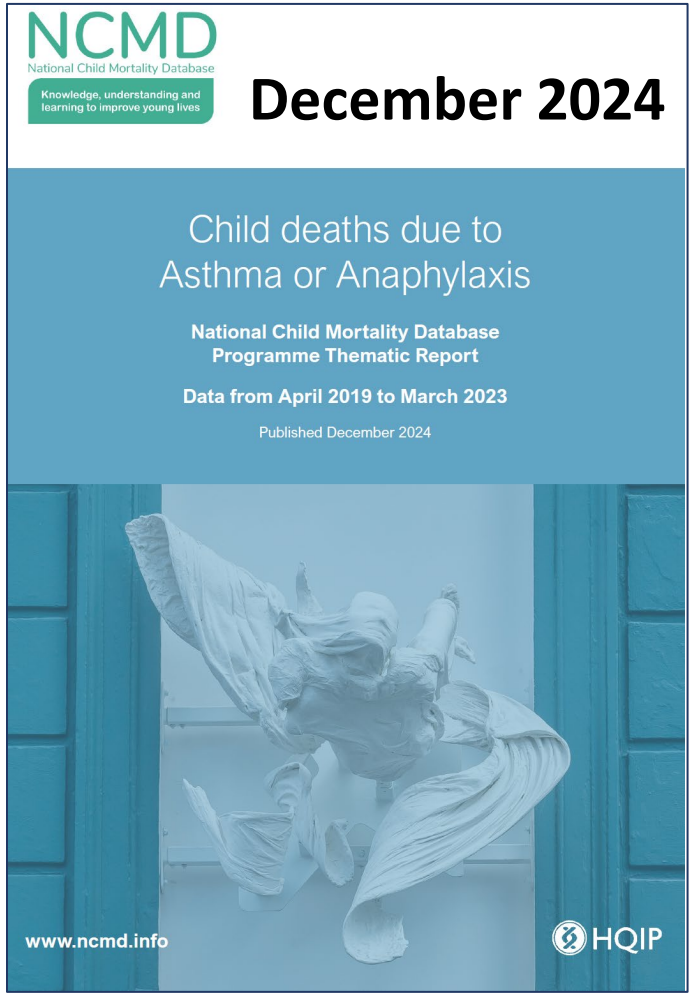


The National Review of Asthma Deaths
This report, published in **2014**, looked at all deaths in the UK over a 1 year period in detail. The aim was to try and **understand** our asthma outcomes and to try and identify common themes or **avoidable factors** that had contributed to the deaths.

Thematic review of Child deaths due to Asthma Done by National Child Mortality Database

- findings and recommendations of the Thematic Report of the; Data from April 2019 to March 2023; **over a period of 4 years**, Published December 2024

- **The report analysed 54 cases** and identified several key findings and contributing factors.arns.co.uk+2University of Bristol+2Asthma + Lung UK+2Asthma + Lung UK



NCMD thematic report
Key Findings

High Exposure to Air Pollution:

- **All** children who died were likely exposed to **levels of particulate matter** at home and school that exceeded World Health Organization (WHO) guidelines. Additionally, **92% and 95% were exposed to nitrogen dioxide** levels beyond WHO limits at home and school, respectively.

Socioeconomic Disparities:

- Children from the **most deprived areas were 4 times more likely to die** from an asthma attack compared to those from the least deprived areas.

Overuse of Reliever Inhalers:

- 87% of the children had three or more short-acting beta-agonist (SABA) inhalers dispensed in the year before their death, with half receiving 12 or more. This indicates poor asthma control.

Emergency Healthcare Utilization:

- 65% had attended an emergency department or had an emergency admission in the year before death, suggesting frequent severe asthma episodes.

Environmental and Lifestyle Factors:

- Nearly half (43%) of the cases involved **exposure to cigarette smoke** from family members. Additionally, **poor housing conditions**, including damp and mould, were contributory factors in some deaths.

NCMD thematic report-Recommendations

The report emphasized the need for:

📌 **Enhanced Asthma Management**:

Implementing proper asthma care, including accurate **diagnosis, regular reviews, and PAAP-personalized asthma action plans**.

📌 **Addressing Health Inequalities**:

Targeting interventions in deprived communities to reduce disparities in asthma outcomes.

📌 **Environmental Improvements**:

Reducing children's **exposure to air pollution** and **improving housing** conditions to mitigate asthma triggers.

📌 **Education and Awareness**:

Increasing awareness among healthcare providers **AND** families about the **importance of asthma control and the risks associated with poor management**.

Impact of Undiagnosed [or Poorly controlled Paediatric Asthma?]

Asthma attacks: unpredictable, stressful and can be fatal

Hospital Admission: cost to child, family & health services

School: absence, poor performance

Physical activities: exclusion

Growth and wellbeing

Psycho-social: blame, social isolation

Impact of asthma:

- **Physical**
- **Psychological**
- **Education**
- **Economical**

Impact of wrong diagnosis: Historically, asthma has been both **over- and under-diagnosed**.

Asthma in General Practice

In 2022, using the available Quality and Outcomes Framework (QOF) data from UK general practice registers:

- **6.5% or 3,745,077 people over the age of six were diagnosed with asthma.**

The vast majority of asthma care occurs in general practice

To impact quality of asthma care and outcome we should focus on the primary care.

GP Planned and routine asthma care can allow the vast majority to live well with asthma and avoid emergency care.

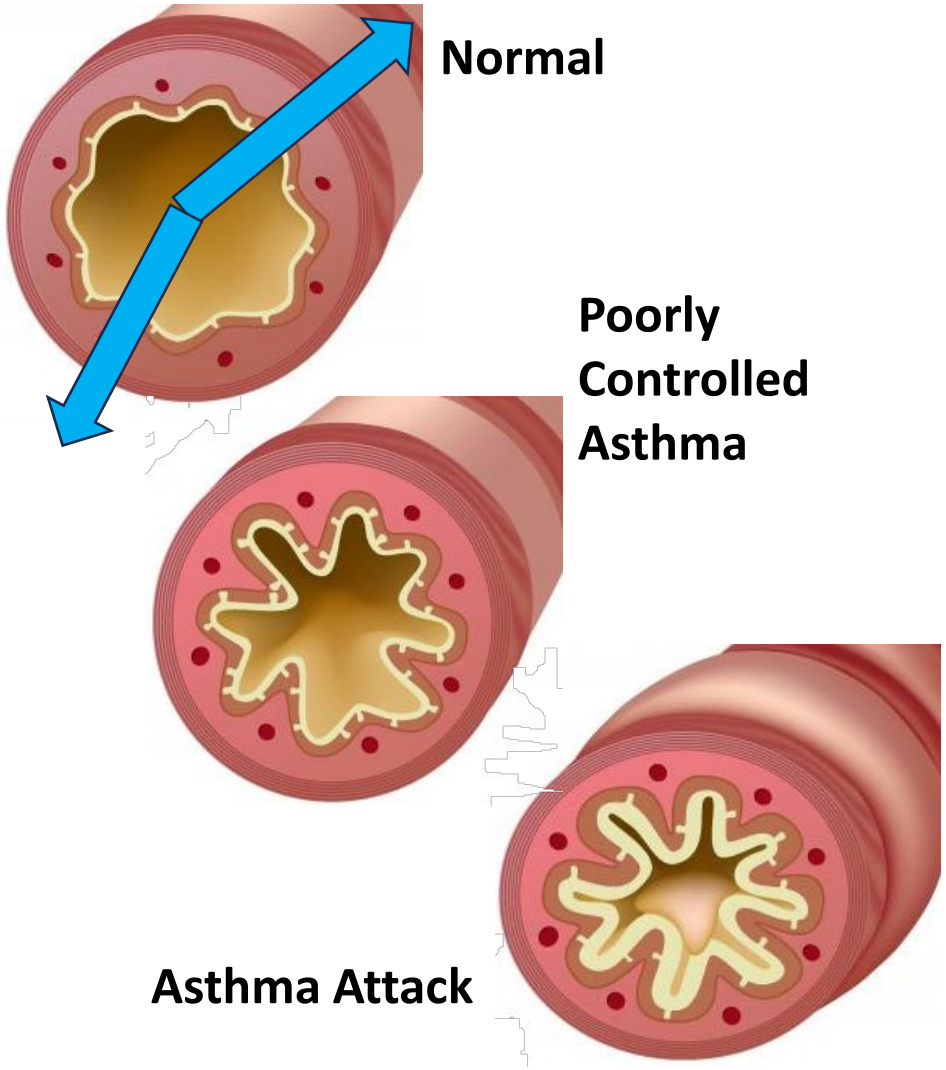
NHS UK GP QOF Contract Database. 2022 http://www.gpcontract.co.uk.

What is Asthma?
[Understanding Patho-physiology]

Pathological definition → **Inflammation**
Eosinophilic airway inflammation (type 2)

Physiological definition → **Reversable and variable airway obstruction**

Clinical definition → **How children present to us?**



Triggers

- Muscle spasm
- Swelling of mucous membrane
- Mucous
- Narrowing of airway

Wheeze is the commonest asthma symptom

Cough

Wheeze is caused by narrowing of the airway

Breathlessness/Chest tightness

Joint UK-Wide Asthma Guideline.
27 November 2024

For the first time,
the British Thoracic Society (BTS), National Institute for Health and Care Excellence (NICE) and the Scottish Intercollegiate Guidelines Network (SIGN) have collaborated to develop **a joint UK-wide guidance on the diagnosis and management of chronic asthma for adults, young people and children.**

NICE
National Institute for Health and Care Excellence

Healthcare Improvement Scotland | SIGN Evidence-based clinical guidelines

British Thoracic Society

The new BTS/NICE/SIGN Asthma Guideline
Asthma in Children-Age groups

It focuses on the following aspects of the patient journey: Adults and Children

Objectives of This Talk

- Diagnosis
- Treatment
- Monitoring and self management
- Implementation
- Q&A session

- Under 16 years
- 5-16 years
- Above 12 years
- 5-11 years
- Under 5 years

Introduction: What does this mean to you?

GPs play a pivotal role in improving the already poor outcome of asthma management in UK

- **Asthma is most common** chronic condition in children and is a common cause of acute hospital attendance.
- **Asthma is characterised** by inflammation, mucous production and obstruction of the airway leading to a combination of variable cough, wheeze and breathing difficulties.
- **Uncontrolled asthma** my lead to life threatening attacks, and has physical, psychological, educational and economic impacts.
- **Long-awaited joint UK guidelines** for asthma have been finalised in **Nov 2024**, overhauling recommendations for diagnostics and treatment of the condition
- **Guidelines are often not used ,** 45% of all the asthma deaths in 2014 would potentially have been avoided.

Objectives- of This Talk
The New Joint Asthma Guideline, Nov 2024

- Diagnosis
- Treatment
- Monitoring and self management
- Implementation
- Q&A session

General Principles of Diagnosing Asthma

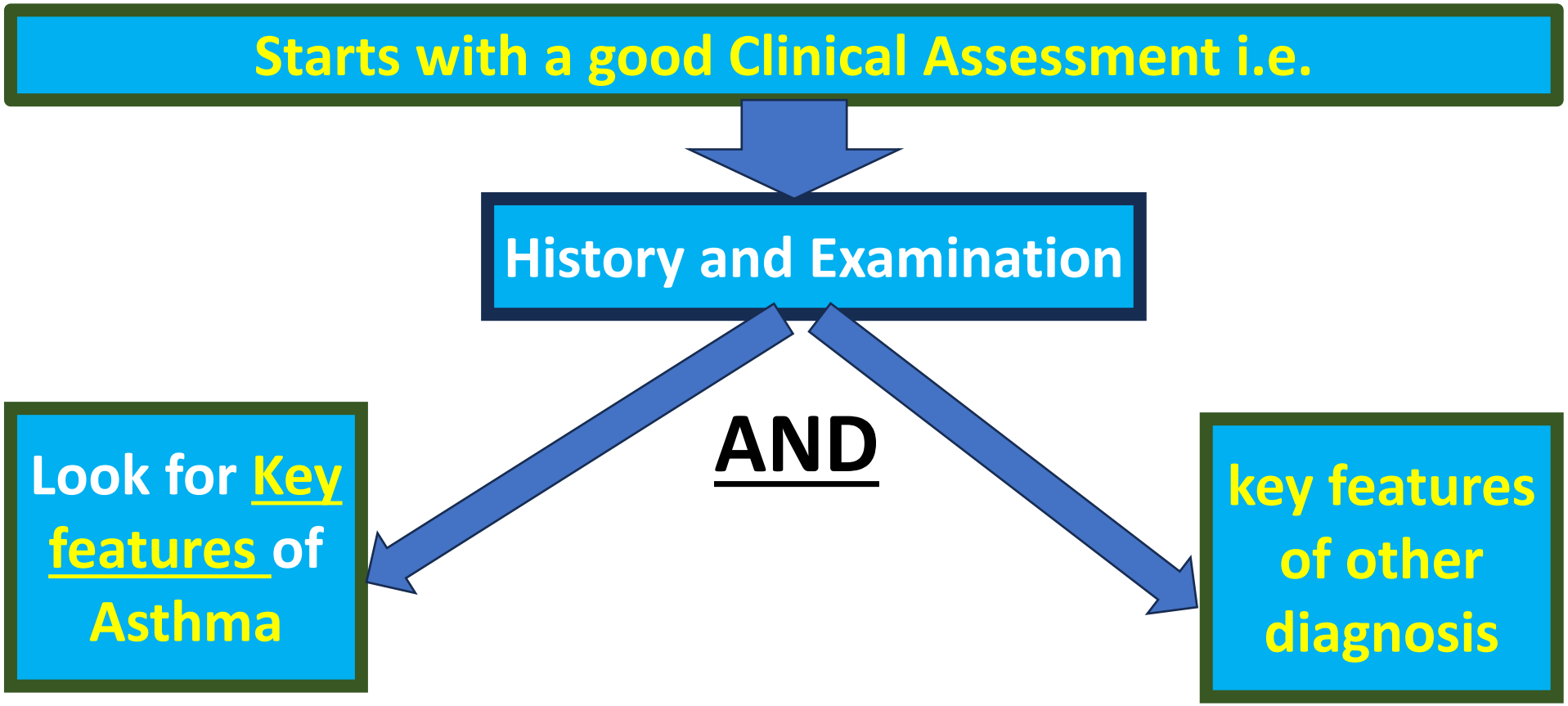
➢Do not confirm a diagnosis of asthma without:

(1) Starting Point: A Suggestive Clinical Assessment	AND	(2) Next: A Supporting Objective Test

1. Emphasise on **positive diagnosis i.e. not based on probability**
2. **A single test** is required to diagnosis asthma in a child with clinical picture consistent with asthma (two tests in previous guidelines)
3. **Test before treating** wherever possible, as it is often more difficult to confirm the diagnosis once asthma control has improved.
4. **If patients already on ICS-containing treatment**, additional or alternative strategies may be needed to confirm the diagnosis of asthma.

➢Record the basis for a diagnosis of asthma in the person's medical records, alongside the coded diagnostic entry.

The Ciagnostic pathway



Suggestive Clinical Assessment: Key Features of Asthma

Starting point: Suggestive Clinical Assessment of Asthma

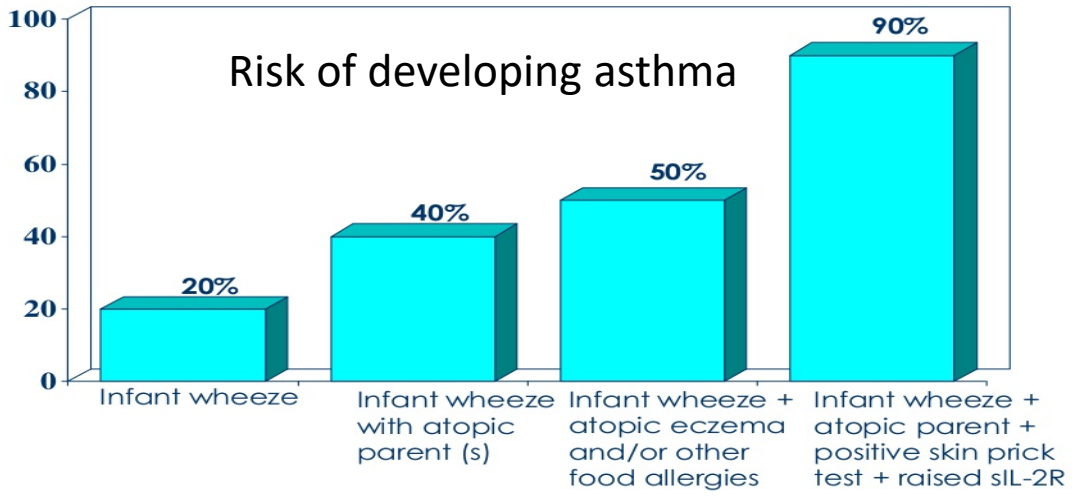
Asthma diagnosis

Key symptoms:

- Shortness of breath
- Cough
- **Wheeze (confirmed by HCP)**
- Chest tightness
- Personal & family history of atopy

Tests:

On examination: if symptomatic may hear Polymorphic rhonchi & find respir. distress or sings of other diagnosis



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Key symptoms:

- Shortness of breath
- Cough
- **Wheeze (confirmed by HCP)**
- Chest tightness
- Personal & family history of atopy

Variability: Duration, intensity of the airflow obstruction.

Timing: Often worse at night and early morning

Triggers: Infections, Exercise, Allergen exposure, weather or Irritants (e.g. smoking)

Tests: **Normal examination , does not rule out asthma BUT History should always be suggestive**

Clinical clue	Possible diagnosis
Symptoms present from birth or perinatal lung problem	Cystic fibrosis; chronic lung disease of prematurity; ciliary dyskinesia; developmental lung anomaly
Family history of unusual chest disease	Cystic fibrosis; neuromuscular disorder
Severe upper respiratory tract disease	Defect of host defence; ciliary dyskinesia
Symptoms and signs	
Persistent moist cough	Cystic fibrosis; bronchiectasis; protracted bacterial bronchitis; r host defence disorder; ciliary dyskinesia
Excessive vomiting	Gastro-oesophageal reflux (with or without aspiration)
Paroxysmal coughing bouts leading to vomiting	Pertussis
Dysphagia	Swallowing problems (with or without aspiration)
Breathlessness with light-headedness and peripheral tingling	Dysfunctional breathing, panic attacks
Inspiratory stridor	Tracheal or laryngeal disorder
Abnormal voice or cry	Laryngeal problem
Focal signs in chest	Developmental anomaly; post-infective syndrome; bronchiecta
Finger clubbing	Cystic fibrosis; bronchiectasis
Failure to thrive	Cystic fibrosis; host defence disorder; gastro-oesophageal reflux
Investigations	
Focal or persistent radiological changes	Developmental lung anomaly; cystic fibrosis; post-infective disorder; recurrent aspiration; inhaled foreign body; bronchiectasis; tuberculosis

Clinical assessment: -Key features of other / Alternative diagnoses in wheezy children

Targeted Tests as Directed by Clinical Assessment

Investigation of possible causes as indicated by clincal assessment

- ❑CXR: can demonstrate the presence of a foreign body, structural anomalies, an enlarged heart, masses and pulmonary infiltrates.
- ❑Sweat chloride test for cystic fibrosis.
- ❑Allergy testing-blood/Skin
- ❑PH studies/endoscopy for GER
- ❑Barium swallow for tracheo-oesophageal fistula and other anomalies, Videofluroscopy
- ❑Bronchoscopy
- ❑Further investigations may be needed for rarer causes – e.g. echocardiogram, MRI/CT, cilia studies scan of the chest, etc.

❑Tests for asthma: Suggestive Clinical Assessment of Asthma

“Clinical Assessment”
The initial first step in the diagnostic pathway

Look for key features of Asthma and other alternative diagnosis

Clinical history

- Obtain a structured clinical history in people with suspected asthma. Specifically, check for:
  1. Reported wheeze, noisy breathing, cough, breathlessness or chest tightness, and **any variation** (for example, daily or seasonal) in these symptoms.
  2. **Any triggers** that make symptoms worse
  3. A personal or family history of **atopic disorders**
  4. Symptoms to suggest **alternative diagnoses.**

Physical examination

- **Examine people with suspected asthma to identify expiratory polyphonic wheeze and signs of other causes of respiratory symptoms**

Normal examination , does not rule out asthma

Types of Tests for Asthma in Children

Tests of variation in airflow obstruction:

1- Spirometry with bronchodilator reversibility (BDR).
2- Peak Expiratory Flow Variability
3- Bronchial Challenge Tests (BCT)

Tests of markers of allergy:

- Diagnostic testing is harder in children as they may find some tests difficult to perform and be unwilling to have blood tests.
- New guidelines recommended Pathway and sequence of tests for diagnosis of asthma: FOUR tests: 1st, 2nd, 3rd and 4rth test

Airway Inflammation Test
Fractional exhaled Nitric Oxide-(FeNO)

First test to do is FeNO: and possibly the only, test in the recommended sequences in both adults and children with a clinical assessment suggestive of asthma.

A normal FeNO does not exclude asthma, if not raised proceed to the second test in the sequence BDR

Positive test thresholds in school aged children : FeNO: 35 ppb or more

Support the presence of Type 2 Eosinophilic airway inflammation which is the characteristic inflammation of asthma:

You can diagnose/confirm asthma rapidly in the majority of Children ≥5Yrs old from the first consultation by a single test – "FeNO is a game changer"

FeNO: What does this mean to you?

"We've been too quick to label all respiratory symptoms in children as asthma," BUT FeNO is a potential 'game changer' in children aged five to 16 years

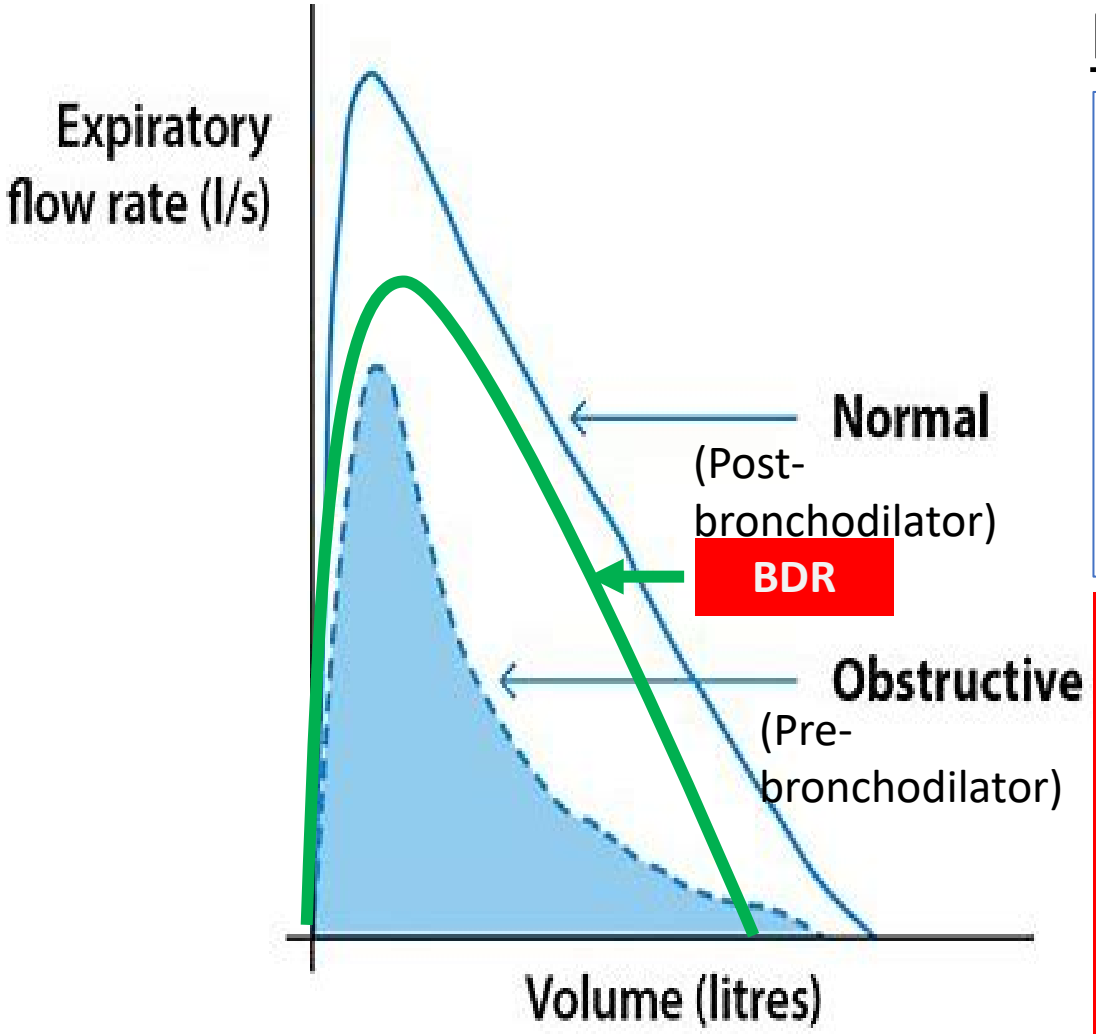
1. The diagnostic pathway starts with a good history and examination
2. The best first test in children with a history suggestive of asthma is FeNO: It's an opportunity to give parents and children a "**diagnosis on the first visit and to get an early and accurate diagnosis**."

- If the FeNO level is more than 35ppb in children, you can diagnose asthma.
- **If the FeNO is not raised, then the next step is to measure BDR**

Spirometry
Broncho-Dilator Reversibility (BDR)

BDR is the second, test in the recommended sequences in children with a clinical assessment suggestive of asthma.

DO BDR, not just spirometry



Positive test thresholds:

Diagnose asthma if the FEV1 increase is 12% or more from baseline (or if the FEV1 increase is 10% or more of the predicted normal FEV1).

Normal spirometry does not exclude asthma, if negative proceed to the 3rd test in the sequence

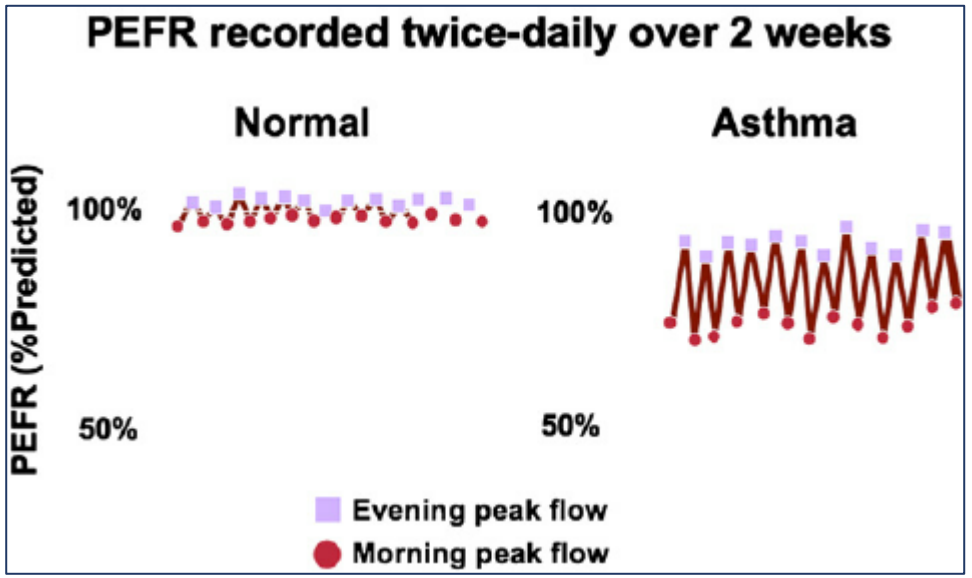
For asthma diagnosis if FeNO is negative, do BDR, not just spirometry

Some children have normal pre-bronchodilator spirometry but positive post-bronchodilator spirometry i.e. positive BDR

Peak Expiratory Flow Variability

NOT routinely indicated: If Delay doing spirometry or not available, next test in sequence as an alternative

Monitor peak flow variability for 2 weeks in children and young people (aged 5 to 16) and calculate the variability; if FeNO normal or not available AND BDR delayed or not available



Regard a value of more than 20% variability as a positive test.

Tests of Other Markers of Allergy

The 3rd test in the recommended sequences in children with a clinical assessment suggestive of asthma

1- (FeNO)

2- HDM Skin prick test } Skin test

OR

2- Blood IgE and
3- Blood eosinophils } Blood test

If Negative or Normal, refer to respiratory paediatrician for the 4rth test in the recommended sequence i.e. Bronchial Challege Testing (BCT) and/or consideration of alternative diagnosis

Bronchial Challenge Tests-BCT

Measure bronchial hyper-responsiveness and inflammation which is integral to defining asthma

The 4rth test in the recommended sequences in children with a clinical assessment suggestive of asthma.

BCT is normally done if other tests, such as FeNO, spirometry, HDM Skin prick test and IgE and Eosinophil counts haven't given a clear result, but you still have unexplained symptoms.

Although bronchial challenge is the most accurate test, overall, it is more costly than others and is less readily available.

Referral to Respiratory paediatrician, as currently most tests are performed only in specialised tertiary care centres or research settings.

NICE

Symptoms suggestive of asthma

Objective tests ≥5 Years old

If young person or child (≥5Years) **with** symptoms suggestive of asthma

cannot perform a **particular test**,

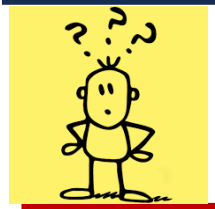
try to perform the other objective tests in the sequence OR repeat

Summary: Objective Tests for Asthma in Children

Objective tests for diagnosing asthma in children aged 5 to 16 with a history suggesting asthma (NICE 27 Nov 2024)

Order of tests

FeNO (if available) → Bronchodilator reversibility (BDR) with spirometry → BDR delayed or not available → Peak expiratory flow variability → Skin prick test **or** Total IgE and blood eosinophils



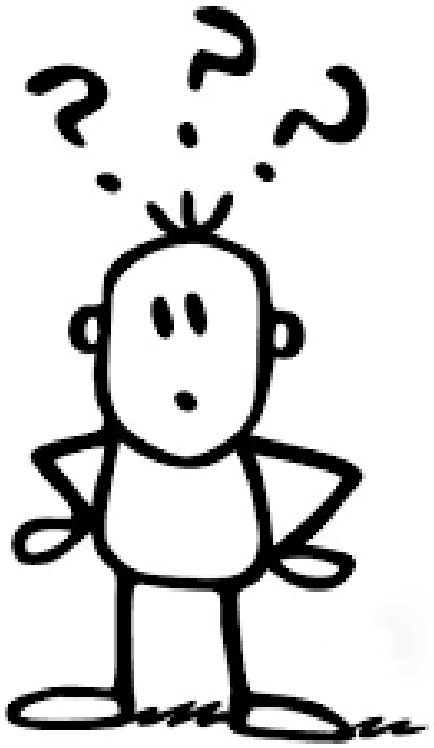
Interpretation of test results

Is FeNO level 35 ppb or more?

- Yes → With history suggestive of asthma, confirm diagnosis
- No or FeNO not available → Is there reversible airflow obstruction 12% or more from baseline (or 10% or more of predicted normal)?
  - Yes → With history suggestive of asthma, confirm diagnosis
  - BDR delayed or not available → Is amplitude percentage mean 20% or more?
    - Yes → With history suggestive of asthma, confirm diagnosis
    - No → Is there evidence of house dust mite sensitisation on skin prick or is total IgE raised?
      - Evidence of sensitisation → With history suggestive of asthma, confirm diagnosis
      - No → **Consider alternative diagnosis**
      - Total IgE raised → Is eosinophil count more than 0.5×10^9 per litre?
        - Yes → With history suggestive of asthma, confirm diagnosis
        - No → Refer to a paediatric specialist for a second opinion and consider bronchial challenge test

Diagnosis: What does this mean to you?

- Are these tests possible to do at your surgery?
- If no, what steps should be considered to implement these recommendations?



Asthma tests and Age of the child

Tests are not easily available to do

< 5 years

- Infants and preschool aged children

≥ 5years

- School aged children

< 5 yrs. diagnosis is hard in this age group because it is difficult to do the tests and there are no good reference standards.

Tests to confirm Asthma in the under 5 years.

- No easily available tests
- Diagnosis is Primarily Clinical, based on identification of risk factors i.e. key features
- How…..?

Diagnosing Asthma in Children Under 5

- **The main issue in this age group is differentiating asthma from symptoms caused by recurrent viral infections, which tends to settle down when the child gets older.**
- **There is evidence of diagnostic tests showing that asthma is more likely than recurrent viral wheeze when:**

1. When the episodes are **frequent** or **severe**
2. When they **occur in the absence of other signs of viral illness** and
3. When the child shows other **evidence of atopy (personal and or family)**

The recommendations for children under 5 are based on a pragmatic trial of treatment AND without treatment, AND review of the child on a regular basis as is current practice.

Diagnosing Asthma in Children Under age of 5 "If still have Symptoms at 5 years of age"

If they still have symptoms when they reach 5 years, attempt objective tests [NICE 2017]

If a child is unable to perform objective tests when they are aged 5:

- Continue to treat based on observation and clinical judgement
- Try doing the tests again every 6 to 12 months until satisfactory results are obtained.
- Refer for specialist assessment if the child's asthma is not responding to treatment. [NICE 2017, BTS/SIGN 2019, amended 2024]

Pragmatic approach to Wheezing children <5 years

Clinical pattern consistent with asthma (PLUS no features or other diagnoses form history and examination)

- ❑ **4 or more wheezy episodes during last 12 months Plus**
- ❑ Personal history of atopy
- ❑ Parental history of atopy

- ➢ **High risk for developing asthma and would lend support to a trial of asthma treatment**
- ➢ **Adequate response to treatment provide further support to a diagnosis of possible asthma..**

NICE

Good Clinical Practice in Asthma Diagnosis

Record the basis for a diagnosis of asthma in a single entry in the person's medical records, alongside the coded diagnostic entry.

An Example 1:
[a child between 5-16years age]:

Asthma was diagnosed/confirmed *in view of suggestive clinical symptoms of asthma, personal and family history of atopy and a high FeNO. In addition, there was no other obvious alternative diagnosis.*

An Example 2:
[a child less than 5 years of age]:
Suspected Asthma *was diagnosed in view of suggestive clinical symptoms of asthma, personal & family history of atopy, response to asthma treatment and recurrence of symptoms after stopping treatment. In addition, there was no other obvious alternative diagnosis.*

Diagnosis: What does this mean to you?

A single test is required to diagnosis asthma in a child with clinical picture consistent with asthma

- The new guideline recommends chronic asthma should be diagnosed **when a child first show symptoms by using simple tests.**
- The change in diagnostic investigations **will simplify diagnostic processes and help with current diagnostic delays**
- **The diagnostic pathway starts with a good history and examination, and if clinical assessment is suggestive of asthma, then do tests**
- **Four tests are used recommended in diagnostic pathway sequences in children with a clinical assessment suggestive of asthma**

Diagnosis: What does this mean to you?

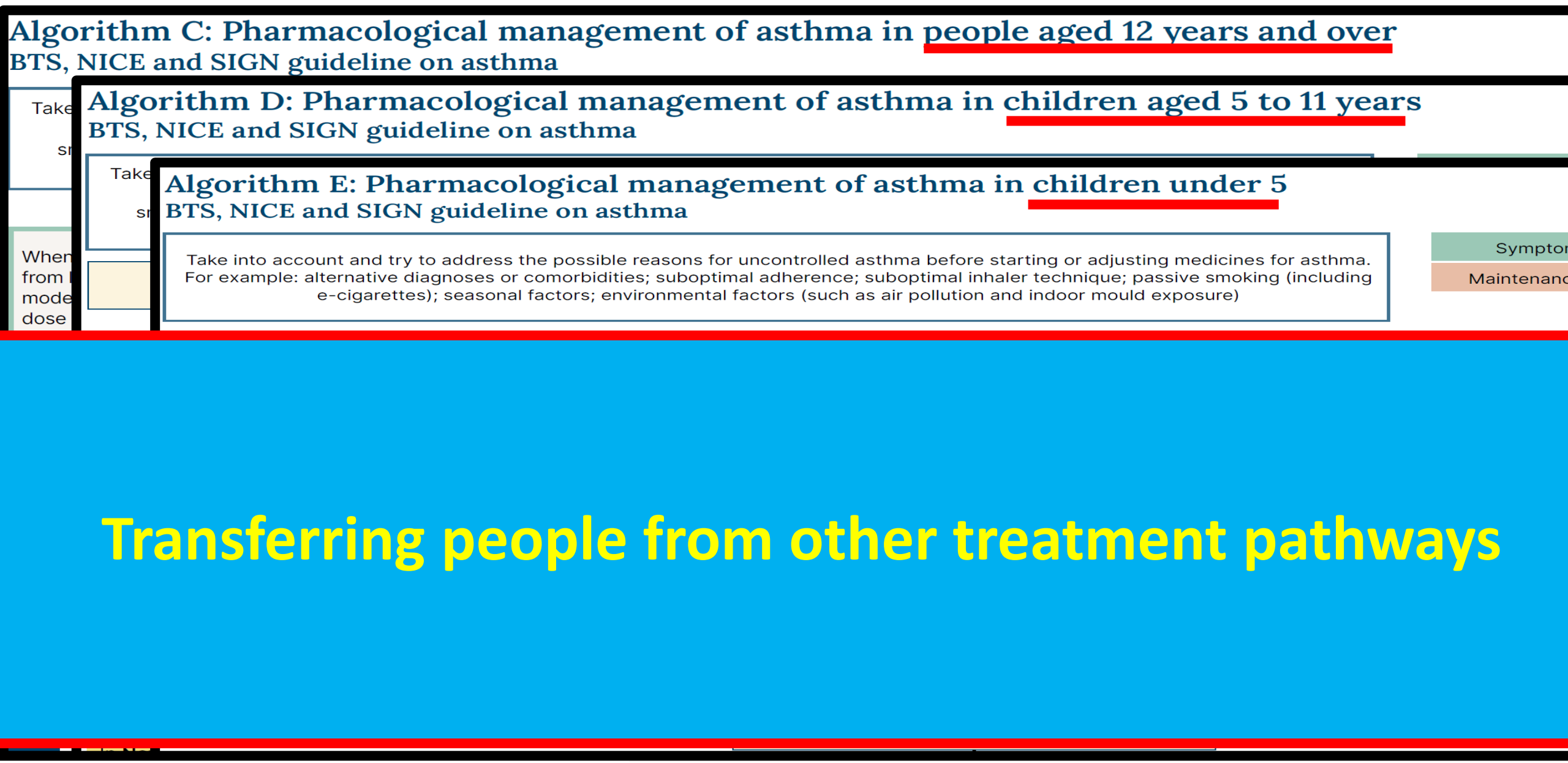
4. **In an emergency setting**, treatment is a priority but test, if possible. Asthma can be confirmed if any of the following tests are positive:, FeNO (if available), spirometry plus salbutamol reversibility (if available), PEF plus salbutamol reversibility (20% or more reversibility means a positive diagnosis if there is good technique) or IgE and blood eosinophil count
5. **If there is still doubt about the diagnosis**, refer the child to a paediatric respiratory specialist for a second opinion, including consideration of a BCT and or alternative diagnosis.

For children less than 5 years of age:

- Difficult to do tests.
- Asthma is more likely than recurrent viral wheeze when the episodes are frequent or severe; When they occur in the absence of other signs of viral illness and When the child shows other evidence of atopy (personal and or family).
- The recommendations for children under 5 are based on a **pragmatic trial of treatment and without treatment**, review of the child on a regular basis as is current practice. **Do tests if if still on treatment at age of 5 years.**

Objectives- of This Talk
The New Joint Asthma Guideline, Nov 2024

- Diagnosis
- **Treatment**
- Monitoring and self management
- Implementation
- Q&A session



Transferring people from other treatment pathways

MART, maintenance and reliever therapy (using ICS/formoterol combination inhalers); SABA, short-acting beta$_2$ agon

British Thoracic Society

NICE National Institute for Health and Care Excellence

Healthcare Improvement Scotland | SIGN

BTS ISBN: 978-1-917619-29-5. NICE ISBN: 978-1-4731-6640-0. SIGN ISBN: 978-1-909103-9

Essentials of Good Asthma Care for All

- **Confirm diagnosis**
- **No SABA monotherapy**
- **Check inhaler technique**
- Check adherence
- **Identify and document triggers**
- Review if > 2 SABA in 12months
- **Maintain lowest controlling therapy**
- Provide personalised asthma action plans (PAAPs)
- **Use spacers with pMDI**
- Consider DPI where appropriate from around age 8-9
- **Review any treatment change at 8-12 weeks**

Always provide education to children/young people & parents including what asthma is, how the medicines work, good inhaler technique, using a PAAP & knowing when to seek help

GOV.UK – Drug Safety alert/Update
Changes in the SABA prescribing guidelines

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

- A reminder of **the risk of severe asthma attacks and increased mortality associated with overuse of SABA with or without anti-inflammatory maintenance therapy in patients with asthma.**
- **A reminder of the change in guidance that no longer recommends prescribing SABA without an inhaled corticosteroid.**

- Patients are advised to seek professional if they find themselves needing their blue inhaler **more than twice a week.**
- **If asthma symptoms e.g.** chest tightness, wheezing, coughing or difficulty breathing) **worsen or are not relieved by the blue inhaler, patients are advised to seek urgent medical help.**

https://www.gov.uk/government/news/patients-with-asthma-reminded-of-the-increased-risk-of-severe-asthma-attacks-from-overusing-blue-inhalers

From: Medicines and Healthcare products Regulatory Agency. Published 24 April 2025

GP-Referral to Secondary Care

- Poor asthma control despite optimised care
- 2+ course of oral steroids in 12 months
- 1+ ED visits in 12 months
- Inpatient or acute admission to hospital/Severe+
- Diagnostic uncertainty/investigations not available
- Also see specific referral criteria in each algorithm...

Pharmacological treatment of Chronic Asthma In Children

Joint UK-wide asthma guideline.
27 November 2024

The update on management is based on evidence which ‘showed that using the combined ICS and formoterol inhalers when required led to people suffering fewer severe asthma attacks’.

NICE
National Institute for Health and Care Excellence

Healthcare Improvement Scotland | SIGN Evidence-based clinical guidelines

British Thoracic Society

Formoterol….!

Like other LABD:

- **A bronchodilator:**
  Is a long-acting beta-2 agonist (LABA) bronchodilator.
- **Long duration of action:**
  Provides long-lasting relief (about 12 hours), making it suitable for maintenance therapy, so it can be used as a preventer
- **Safety Considerations:**
  Should never be used alone in asthma treatment—**they must be combined with inhaled corticosteroids** , such as budesonide or fluticasone, to control inflammation alongside bronchodilation to reduce the risk of severe asthma attacks.

What is different about Formoterol?

✅ Key Differences Between Formoterol and Other LABAs:

📌 Rapid Onset of Action:

Formoterol has a rapid onset, meaning it starts **working within minutes**, unlike salmeterol, which takes longer to take effect, so it **can be used as a reliver** as well.

📌 Used in Maintenance and Reliever Therapy (MART):

Some inhalers containing formoterol allow it to be used as both a **preventer and reliever**, unlike other LABAs that are strictly maintenance medications.

📌 Used in Anti-inflammatory and reliever therapy (AIR):

Unlike other LABAs that are strictly maintenance medications and cannot be used as AIR.

Inhalers
Not Suitable for AIR OR MART plans

- Inhalers containing salmeterol (e.g. Seretide®) or other LABAs **cannot be used for MART**, as salmeterol has a slower onset and is not suitable for reliever use.

Joint UK-wide asthma guideline.
27 November 2024

What is new in children asthma treatment?

✅ There is **shift in emphasis** away **from conventional treatment** and more towards anti-inflammatory reliever therapy **(AIR)** and maintenance and reliever therapy (**MART**) due to its association with better outcomes and reduced exacerbation rates.

✅ **For all children 12 years above (and some between 5 and 11yeras):**

- 📌 **AIR Plan** -Anti-Inflammatory reliver Plan
- 📌 **MART Plan** -Maintenance Anti-inflammatory Reliever Treatment

AIR Plan
(Anti-Inflammatory Reliver Plan)

- **AIR inhalers, it uses a combination inhaler containing two types of medicine**: a steroid anti-inflammatory and a reliever medicine, such as formoterol, to quickly open up airways during asthma symptoms or attacks.
- 📌 **Currently, only products containing formoterol can be used as AIR**

Used as first option:

This plan is typically prescribed for children aged 12 and over who experience **occasional/infrequent asthma symptoms.**

Used as a step-down option:

stepping down from a patient on **low dose MART who is very well controlled.**

✅ If asthma symptoms are not well-controlled with the AIR plan, it is recommend switching to a Maintenance and Reliever Therapy (MART) plan.

AIR plan

My triggers are:

- [ ] House dust mites
- [ ] Viruses like colds and flu
- [ ] Changes in weather
- [ ] Animal fur
- [ ] Feathers
- [ ] Foods
- [ ] Exercise
- [ ] Upset, distress and strong emotions like fear, stress and excitement
- [ ] Smoke from fires
- [ ] Smoke from cigarettes
- [ ] Other

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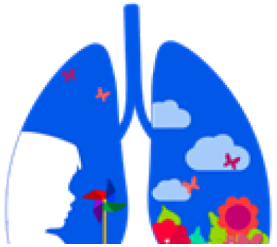
IMPORTANT

Always take your treatment as directed by your doctor or nurse

Please remember to bring your medications, spacer and asthma plan when you visit your doctor or nurse



Additional Information or A

Useful Websites

Asthma and Lung UK
asthmaandlung.org.uk

Moving on Asthma
movingonasthma.org.uk

Pollution Forecast
uk-air.defra.gov.uk/forecasting/

Version 1 Date created 07/202

GREEN Zone

My Asthma is good if I:

- Have no cough
- Have no wheeze
- Can play or exercise as usual
- Am sleeping well
- Am not missing school / college because of my asthma

To keep my Asthma under control I:

- Carry my AIR inhaler with me every day so I can use it if I get asthma symptoms.

My AIR inhaler is: _____

- I take 1 puff of my AIR inhaler as needed if I get asthma symptoms.
- If my symptoms have not improved after a few minutes I can take another puff.

I can continue to use my AIR inhaler as needed if I:

- Have few or no asthma symptoms during the day, and none at night
- Only need to use my AIR inhaler occasionally as advised by my doctor or nurse.

Other medicines I take for asthma are:

_____

If I am regularly needing puffs of my AIR inhaler or my asthma is getting worse:

MOVE TO THE AMBER ZONE

AMBER Zone

My Asthma is not good if I:

- Cough especially at night
- Wheeze
- Have a tight chest
- Feel breathless
- Can't play or exercise or it is harder to play or exercise
- Have difficulty sleeping

If I regularly need to use my AIR inhaler, or asthma is interfering with normal activities or sleep, my asthma is not well controlled. I should ask my asthma nurse or GP for an asthma review.

If my Asthma is not good:

- I can take 1 puff of my AIR inhaler as needed
- I can take up to a maximum of 8 puffs throughout the day
- I must seek urgent medical advice if I ever need to to take 8 or more puffs in a day even if I am feeling better

If my AIR inhaler is still not helping, it is not lasting 4 hours or I am getting worse I am having an asthma attack:

MOVE TO THE RED ZONE

RED Zone

I am having an asthma attack if:

- My AIR inhaler isn't helping or is not lasting 4 hours
- I am struggling to breath
- I am coughing a lot
- I am unable to walk
- I am unable to speak in full sentences
- I feel tight in my chest and wheezy

Seek emergency help

Ask your care giver, family or friends to help you go through these steps:

- Sit upright and keep calm
- Loosen tight clothing
- Take 1 puff of your AIR inhaler
- Wait a few minutes, if there is no improvement in symptoms take another puff
- Repeat this up to a maximum of 6 puffs

OR

- If I (or my school) have a Blue Emergency Salbutamol inhaler:
- I can take 1 puff with a spacer every 30-60 seconds (up to 10 puffs) until help arrives
- If after 10 minutes help has not arrived, I can repeat the step above

If help does not arrive call 999 again

Even if my symptoms improve I should see my doctor or asthma nurse immediately after an asthma attack

MART Plan
(Maintenance Anti-inflammatory Reliever Plan)

- **MART inhalers, it uses a combination inhaler containing two types of medicine: a steroid anti-inflammatory as a preventer and a reliever medicine to quickly open up airways during asthma symptoms or attacks.**
- **The MART plan is designed to simplify asthma management by combining in a single inhaler two functions i.e The preventer and reliever.**

📌 **Currently, only combination inhalers containing formoterol can be used as MART inhaler**

- **It helps reduce the risk of asthma attacks and improves adherence to treatment.**
- **Typically, MART is prescribed for children aged 12 and over, (but it may also be suitable for children aged 5-12 in some cases.)**

MART Plan

My triggers are:

- House dust mites ☐
- Viruses like colds and flu ☐
- Changes in weather ☐
- Animal fur ☐
- Feathers ☐
- Foods ☐
- Exercise ☐
- Upset, distress and strong emotions like fear, stress and excitement ☐
- Smoke from fires ☐
- Smoke from cigarettes ☐
- Other ☐

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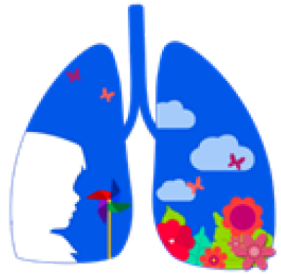
IMPORTANT

Always take your treatment as directed by your doctor or nurse

Please remember to bring your medications, spacer and asthma plan when you visit your doctor or nurse.



EXCELLENT ASTHMA CARE IN

Additional Information or Advice

Useful We

Asthma and asthmaandlu

Moving on movingonasth

Pollution uk-air.defr foreca

Version 1 Date cr

GREEN Zone

My Asthma is good if I:

- Have no cough
- Have no wheeze
- Can play or exercise as usual
- Am sleeping well
- Am not missing school / college because of my asthma

To keep my Asthma under control I:

- Take my normal treatment every day even when I feel well.
- Use the same inhaler as a preventer and as a reliever.

My MART inhaler is: _____

I take ☐ puff(s) in the morning

And ☐ puffs(s) at night

I use my MART inhaler as my reliever inhaler if I get asthma symptoms:

- I take one extra puff of my MART inhaler as needed
- I should rarely need extra puffs of my MART inhaler if my asthma control is good.

Other medicines I take for asthma are:

_____

If I am regularly needing extra puffs of my MART inhaler or my asthma is getting worse:

MOVE TO THE AMBER ZONE

AMBER Zone

My Asthma is not good if I:

- Cough especially at night
- Wheeze
- Have a tight chest
- Feel breathless
- Can't play or exercise or it is harder to play or exercise
- Have difficulty sleeping
- Need extra MART doses more than 3 times a week

If I need extra puffs of MART 3 or more times a week, or asthma is interfering with normal activities or sleep, my asthma is not well controlled. I should ask my asthma nurse or GP for an asthma review.

If my Asthma is not good I:

Must continue taking my normal treatment every day **AND:**

- I can take 1 puff of my MART inhaler as needed
- I can take up to a maximum of 8 puffs throughout the day (including my regular morning and night puffs)
- I must seek urgent medical advice if I ever need to to take 8 or more puffs in a day even if I am feeling better

If my MART inhaler is still not helping, it is not lasting 4 hours or I am getting worse I am having an asthma attack:

MOVE TO THE RED ZONE

RED Zone

I am having an asthma attack if:

- My MART inhaler isn't helping or is not lasting 4 hours
- I am struggling to breath
- I am coughing a lot
- I am unable to walk
- I am unable to speak in full sentences
- I feel tight in my chest and wheezy

Seek emergency help

Ask your care giver, family or friends to help you go through these steps:

- Sit upright and keep calm
- Loosen tight clothing
- Take 1 puff of your MART inhaler
- Wait a few minutes, if there is no improvement in symptoms take another puff
- Repeat this up to a maximum of 6 puffs

OR

- If I (or my school) have a Blue Emergency Salbutamol inhaler:
- I can take 1 puff with a spacer every 30-60 seconds (up to 10 puffs) until help arrives
- If after 10 minutes help has not arrived, I can repeat the step above

If help does not arrive call 999 again

Even if my symptoms improve I should see my doctor or asthma nurse immediately after an asthma attack

Dr Ezzedin A Gouta / Asthma/May 2025

How to use the MART inhaler?

Use same MART inhaler:

- Every day as prescribed, usually twice a day
- If asthma symptoms get worse- **Extra doses of same inhaler used**
- If have an asthma attack- **Extra doses of same inhaler used**

SABA in MART Regimes:

- **For general day to day use MART regimes should be SABA free.**
- **In certain circumstances it may be appropriate to prescribe a SABA + spacer emergency pack for use only in the red zone of a child's PAAP.**

ICS (Budesonide)/Formoterol Inhaers available for AIR/MART

📌 Symbicort (DPI):

- **100/6 Turbohaler (5-11yrs) OR**
- **200/6 Turbohaler (12yrs +)**

📌 Fobumix (DPI):

- **80/4.5 Easyhaler (5-11yrs) OR**
- **160/4.5 Easyhaler(12yrs+)**

✅ Dose:

- **Low dose MART**-1 puff BD **plus** 1 additional puff PRN in response to symptoms (Not more than 6 inhalations should be taken on any one occasion)
- **Moderate dose MART** - 2 puffs BD **plus** 1 additional puff PRN in response to symptoms (Not more than 6 inhalations should be taken on any one occasion)

✅ Total daily maximum doses (including maintenance doses):

- A total daily dose of more than 8 inhalations is not normally needed. However, a total daily dose of up to 12 inhalations could be used for a limited period

✅ When to seek medical Advice:

- Children requiring **8 inhalations in a day** should be strongly recommended to seek **urgent medical advice.**
- Children should be advised to seek a **non-urgent** review **if needing additional doses 3 + times a week**

Adolescents 12-17 AIR and MART Pathway

If highly symptomatic at presentation start here
in addition to treating acute symptoms i.e. with OCS

ǂMART is currently off label in this age group.

Initial management of diagnosed asthma

Infrequent symptoms

OFFER
Low dose ICS/formoterol AIR

Fobumix Easyhaler 160/4.5	Symbicort Turbohaler 200/6
1 puff PRN in response to symptoms	1 puff PRN in response to symptoms


See here for further AIR dose information

OFFER
Low dose ICS/formoterol MART

Fobumix Easyhaler 160/4.5	Symbicort Turbohaler 200/6
1 puff BD plus 1 additional puff PRN in response to symptoms	1 puff BD plus 1 additional puff PRN in response to symptoms


See here for further MART dose information

OFFER
Moderate dose ICS/formoterol MART

Fobumix Easyhaler 160/4.5	Symbicort Turbohaler 200/6
2 puffs BD plus 1 additional puff PRN in response to symptoms	2 puffs BD plus 1 additional puff PRN in response to symptoms


See here for further MART dose information

REMAINS UNCONTROLLED DESPITE GOOD ADHERANCE
Check FeNO
Check blood eosinophil count (BEC)

EITHER FeNO or BEC RAISED
Refer to specialist

NEITHER FeNO or BEC RAISED
CONSIDER
Add Montelukast* (trial 8-12 weeks)
Stop if no improvement
Continue if asthma improved

5mg chewable tablet 1 OD Age 12-14
10mg tablet 1OD Age 15+

REMAINS UNCONTROLLED
Refer to specialist

*Caution Montelukast – Reminder of the risk of neuropsychiatric reactions

SABA in MART Regimes

For general day to day use MART regimes should be SABA free. In certain circumstances it may be appropriate to prescribe a SABA + spacer emergency pack for use only in the red zone of a child's PAAP.

Treatment Pathways for Adolescents 12-17

NICE/BTS/SIGN 2024 Asthma guidelines do not recommend an alternative treatment pathway for adolescents 12-17. In South Yorkshire we agree that AIR/MART should be the pathway of choice for patients in this age group however we understand that for a small minority of patients this pathway may not be suitable. See right for further advice

Guidance on managing CYP age 12-17 if AIR/MART is not suitable

Always try AIR/MART pathway first line. Discuss benefits of AIR/MART (safer, reduced exacerbations, reduced mortality), discuss concerns (some people worry if they can't feel the inhaler that it is not working). Some situations where AIR/MART may not be appropriate may include cannot tolerate formoterol, cannot use a DPI, cannot manage flexible dosing. If after trying AIR/MART it is deemed unsuitable, document reason in patient notes and consider a fixed dose regime. **Reconsider AIR/MART at every review and at least annually.** **SABA alone must not be used.**

Low dose ICS	Low dose ICS/LABA	Moderate dose ICS/LABA	Add on therapy/Referral
Soprobec 100 or 200 1 puff BD Easyhaler Budesonide 100 or 200 1 puff BD Pulmicort Turbohaler 100 or 200 1 puff BD Plus SABA PRN - Salamol or Easyhaler Salbutamol	Combisal 25/50 2 puffs BD Fobumix Easyhaler 200/6 1 puff BD Symbicort Turbohaler 200 1 puff BD Relvar Ellipta 92/22 1 puff OD Plus SABA PRN – Salamol or Easyhaler Salbutamol	Combisal 25/125 1 puff BD Fobumix Easyhaler 200/6 1 puff BD Symbicort Turbohaler 400 1 puff BD Relvar Ellipta 92/22 1 puff OD Plus SABA PRN – Salamol or Easyhaler Salbutamol	Check FeNO/BEC If either raised – Refer to specialist If neither raised - consider adding montelukast 5mg chewable tablet OD Age 12-14 10mg tablet OD Age 15+ (Trial 8-12 weeks stop if no response) Remains uncontrolled – Refer

Diagnosed asthma
12 years and above (and Some 5-11yrs*)

May start here

Start AIR alone if newly diagnosed:

Used PRN, Infrequent or occasional symptoms

Star Low dose MART if:

-Highly symptomatic at presentation (after treating acute episode) or

-Worsening symptoms if on AIR

Moderate dose MART

Remains uncontrolled, Check FeNO and BEC:

-Add MK if FeNO or BEC not raised

-Refer to Specialist if either is raised

* **MART for 5-11 yrs. the following criteria should be met:**

- **Trained staff , tier 3 level or above**
- **A formal assessment of the ability of pateints to use the inhalers undertaken.**
- **Extra time has been allocated for the consultation.**
- **There is infrastructure to allow for closer monitoring**

Children 5-11 Diagnosed Asthma - Conventional Pathway

Initial management of diagnosed asthma

OFFER
Paediatric low dose ICS TWICE DAILY
(+SABA reliever PRN)

Soprobec 100mcg pMDI 1 puff BD + spacer	Easyhaler Budesonide 100 mcg DPI 1 puff BD (Age 6+)	Salamol 100mcg + spacer 1 puff PRN
Alternative with dose counter = Clenil 100	Pulmicort Turbohaler 100 mcg DPI* 1 puff BD	Easyhaler Salbutamol 100mcg 1 puff PRN

IF UN-CONTROLLED ASSESS ABILITY TO USE MART

ASSESSED AS UNABLE TO USE MART

CONSIDER
Add Montelukast* (Trial 8-12 weeks stop if no response)

4mg chewable tablet 1 OD Age < 6
5mg chewable tablet 1 OD Age 6+

OFFER
Paediatric low dose ICS/LABA TWICE DAILY (+SABA reliever PRN)

Combisal 25/50 mcg pMDI 1 puff BD + spacer	Fobumix Easyhaler 80/4.5 1 puffs BD (Age 6+)	Symbicort 100/6 Turbohaler 1 puffs BD (Age 6+)	Salamol 100mcg + spacer 1 puff PRN
Alternative = Seretide 25/50 Evohaler			Easyhaler Salbutamol 100mcg 1 puff PRN

IF UNCONTROLLED OFFER
Paediatric moderate dose ICS/LABA TWICE DAILY
(+SABA reliever PRN)

Combisal 50 mcg pMDI 2 puffs BD + spacer	Fobumix Easyhaler 80/4.5 2 puffs BD (Age 6+)	Symbicort 100/6 Turbohaler 2 puffs BD (Age 6+)	Salamol 100mcg + spacer PRN
Alternative = Seretide 25/50 Evohaler			Easyhaler Salbutamol 100mcg 1 puff PRN

REMAINS UNCONTROLLED
Refer to specialist

ASSESSED AS ABLE TO USE MART

CONSIDER
MART Pathway

Must also be assessed to have ability to use DPI

Children 5-11 Diagnosed Asthma - MART Pathway

SABA in MART Regimes

For general day to day use MART regimes should be SABA free. In certain circumstances it may be appropriate to prescribe a SABA + spacer emergency pack for use only in the red zone of a child's PAAP.

*Caution Montelukast – Reminder of the risk of neuropsychiatric reactions

MART = Maintenance and Reliever Therapy
ŦMART is currently off label in this age

CONSIDER
Paediatric low dose MART Ŧ

Symbicort 100/6 Turbohaler
1 puff BD plus 1 additional puff PRN in response to symptoms (Age 6+)
See here for further MART dose information

Seek specialist advice and CONSIDER
Paediatric moderate dose MART Ŧ

Symbicort 100/6 Turbohaler
1 puff BD plus 1 additional puff PRN in response to symptoms (Age 6+)
See here for further MART dose information

Asthma Management in Children

Tests are not easily available to do

< 5 years

- Infants and preschool aged children

≥ 5years

- School aged children

< 5 yrs. diagnosis is hard in this age group because it is difficult to do the tests and there are no good reference standards.

Tests to confirm Asthma in the under 5 years.

- No easily available tests
- Diagnosis is Primarily Clinical, based on identification of risk factors i.e. key features of asthma and key features of alternative diagnosis
- Accordingly , you can only diagnose “suspected asthma”
- How…..?

Clinical clue	Possible diagnosis
Symptoms present from birth or perinatal lung problem	Cystic fibrosis; chronic lung disease of prematurity; ciliary dyskinesia; developmental lung anomaly
Family history of unusual chest disease	Cystic fibrosis; neuromuscular disorder
Severe upper respiratory tract disease	Defect of host defence; ciliary dyskinesia
Symptoms and signs (History and examination)	
Persistent moist cough	Cystic fibrosis; bronchiectasis; protracted bacterial bronchitis; r host defence disorder; ciliary dyskinesia
Excessive vomiting	Gastro-oesophageal reflux (with or without aspiration)
Paroxysmal coughing bouts leading to vomiting	Pertussis
Dysphagia	Swallowing problems (with or without aspiration)
Breathlessness with light-headedness and peripheral tingling	Dysfunctional breathing, panic attacks
Inspiratory stridor	Tracheal or laryngeal disorder
Abnormal voice or cry	Laryngeal problem
Focal signs in chest	Developmental anomaly; post-infective syndrome; bronchiecta
Finger clubbing	Cystic fibrosis; bronchiectasis
Failure to thrive	Cystic fibrosis; host defence disorder; gastro-oesophageal reflu
Investigations	
Focal or persistent radiological changes	Developmental lung anomaly; cystic fibrosis; post-infective disorder; recurrent aspiration; inhaled foreign body; bronchiectasis; tuberculosis

Clinical Assessment :- look for Key features of other / Alternative diagnoses in wheezy children

Targeted Tests as Directed by Clinical Assessment

< 5y children-Investigation of possible causes as indicated by clinical assessment

- ❑CXR: can demonstrate the presence of a foreign body, structural anomalies, an enlarged heart, masses and pulmonary infiltrates.
- ❑Sweat chloride test for cystic fibrosis.
- ❑Allergy testing-blood/Skin
- ❑PH studies/endoscopy for GER
- ❑Barium swallow for tracheo-oesophageal fistula and other anomalies, Videofluroscopy
- ❑Bronchoscopy
- ❑Further investigations may be needed for rarer causes – e.g. echocardiogram, MRI/CT, cilia studies scan of the chest, etc.
- ❑**If Suggestive Clinical Assessment of Asthma:**

  No Tests for asthma: " Suspected asthma"

Diagnosing Asthma in Children Under 5

- **The main issue in this age group is differentiating asthma from symptoms caused by recurrent viral infections, which tends to settle down when the child gets older.**
- **There is evidence showing that asthma is more likely than recurrent viral wheeze when:**
  1. The episodes are **frequent or**
  2. **The episodes severe**
  3. They **occur in the absence of other signs of viral illness** and
  4. When the child shows other **evidence of atopy (personal and or family)**

The recommendations for children under 5 are based on a pragmatic trial of treatment AND without treatment, AND review of the child on a regular basis as is current practice.

Children < 5 Suspected (or Confirmed) Asthma

Suspected asthma: suggestive clinical assessment and:

- The episodes are **frequent e.g. >4 or severe**
- They **occur in the absence of other signs of viral illness**
- The child shows other **evidence of atopy (personal and or family)**

Trial of treatment for 8-12 Wks. (Low dose ICS+ SABA)

Follow up in 8-12 weeks:

- **If symptoms resolved- Trial without treatment**
- **If symptoms not resolved (despite good technique & adherence with treatment, R/O alternative diagnosis) - refer to specialist**

Recurrence of Symptoms or acute episode –

Another trial of treatment

Follow up and monitoring:

-If symptoms resolved consider another trial without treatment within 12 months

-If uncontrolled symptoms-consider stepping up treatment form low to moderate dose ICS to add on treatment: If still uncontrolled refer to specialist.

Children < 5 Suspected (or confirmed) Asthma

Symptoms at presentation that indicate need for maintenance treatment.

or

Severe acute episodes of difficulty breathing and wheeze i.e. hospital admission or 2+ courses of OCS.

CONSIDER
8–12-week trial of paediatric low dose ICS TWICE DAILY (+SABA reliever PRN)

Soprobec 100mcg pMDI	Salamol 100mcg
1 puff BD + spacer	+ spacer 1 puff PRN
	
Alternative with dose counter = Clenil 100	

SYMPTOMS NOT RESOLVED
Check inhaler technique
Check environmental source
Check alternative diagnosis

NON-RESPONSE UNEXPLAINED
Refer to specialist

SYMPTOMS RESOLVED

CONSIDER
** Stopping ICS and SABA and review 3m

SYMPTOMS REOCCUR or ACUTE EPISODE

Restart paediatric low dose ICS TWICE DAILY (+SABA reliever PRN)

CONSIDER
A further trial without treatment after reviewing within 12 months

IF UNCONTROLLED CONSIDER
Paediatric moderate dose ICS TWICE DAILY (+SABA reliever PRN)

Soprobec 100mcg pMDI	Salamol 100mcg
2 puffs BD + spacer	+ spacer 1 puff PRN
	
Alternative = Clenil 100	

IF UNCONTROLLED CONSIDER
Add Montelukast*
(Trial 8-12 week stop if no response)

4mg oral granules 1 OD Age < 2
4mg chewable tablet 1 OD Age 2+

REMAINS UNCONTROLLED
Refer to specialist

****If the ICS is associated with improvement, this is not proof of asthma as viral wheezing can remit and relapse spontaneously, the ICS should be stopped.**

*Caution Montelukast – Reminder of the risk of neuropsychiatric reactions

Diagnosing Asthma in Children Under age of 5 "If still have Symptoms at 5 years of age"

If they still have symptoms when they reach 5 years, attempt objective tests [NICE 2017]

<u>If a child is unable to perform objective tests when they are aged 5:</u>

- Continue to treat based on observation and clinical judgement
- Try doing the tests again every 6 to 12 months until satisfactory results are obtained.
- **Refer for specialist assessment if the child's asthma is not responding to treatment. [NICE 2017, BTS/SIGN 2019, amended 2024]**

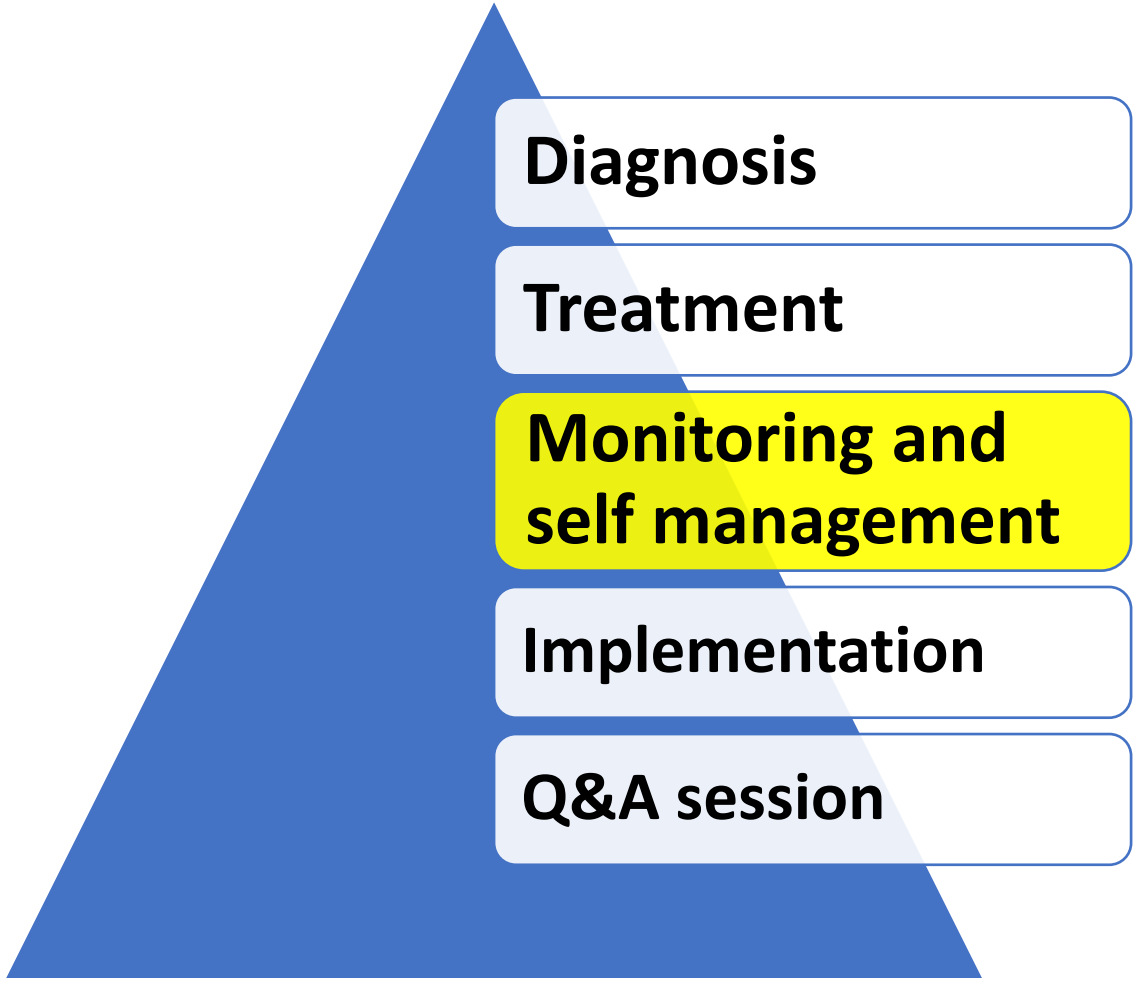
Transferring-Management of people with an Existing Diagnosis of Asthma 12 years+

- **Identify adults and children 12+** who could be transferred to SABA free treatment, particularly where asthma is not controlled.
- Use tools like **SPECTRA and Ardens** to support these searches.
- **At their next review**, initiate a discussion with the patient about switching their treatment regime.
- **This is particularly relevant if they remain symptomatic.**

If they are controlled i.e. not symptomatic and are happy on their current treatment pathway it is not recommended that they are switched

Current treatment	Switch
(Transferring people from other treatment pathways)	
SABA only	Low-dose ICS/formoterol PRN (AIR)
Regular low-dose ICS + SABA PRN	Low-dose MART
Regular low-dose ICS/LABA + SABA PRN	
Regular low-dose ICS + LTRA and/or LAMA + SABA PRN	
Regular low-dose ICS/LABA + LTRA and/or LAMA + SABA PRN	
Regular moderate-dose ICS + SABA PRN	Moderate-dose MART
Regular moderate-dose ICS/LABA + SABA PRN	
Regular moderate-dose ICS + LTRA and/or LAMA + SABA PRN	
Regular moderate-dose ICS/LABA + LTRA and/or LAMA + SABA PRN	
High dose ICS containing regime	Refer to specialist asthma care

Objectives- of This Talk
The New Joint Asthma Guideline, Nov 2024



Monitoring of Childhood asthma by a General Practitioner (GP)

Childhood asthma should be monitored by a General Practitioner (GP) for several critical reasons related to health outcomes, policy, and NHS care standards.

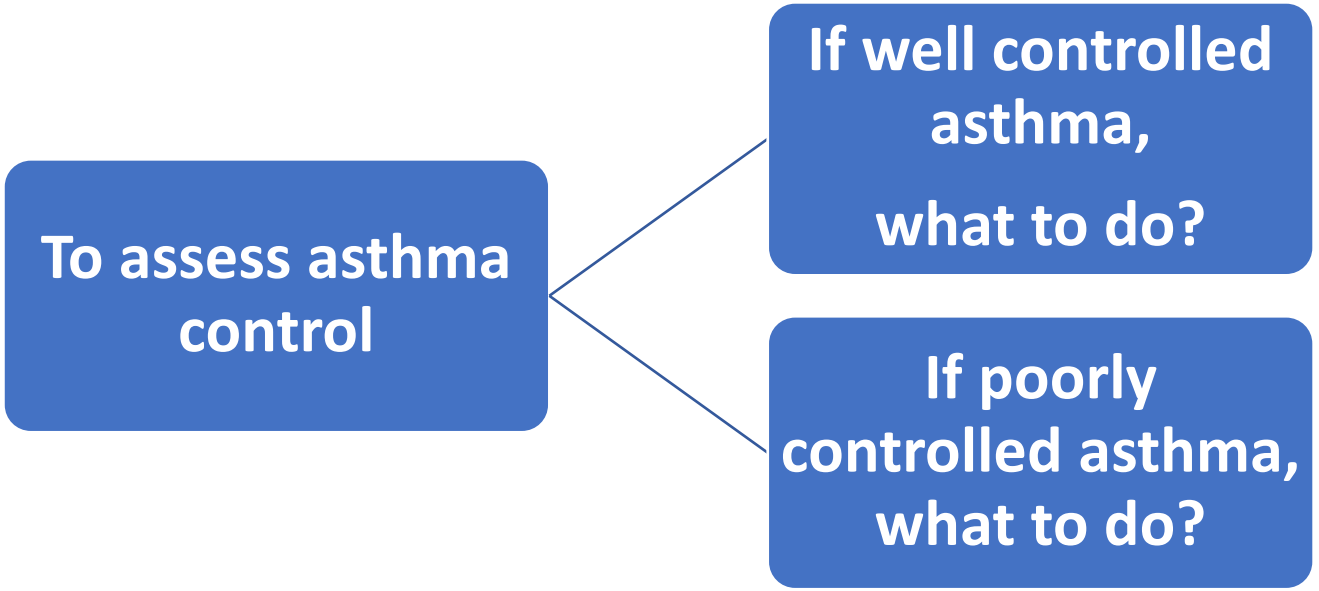
[This includes NICE, NHS England's Long-Term Plan and Quality and Outcomes Framework (QOF) indicators for asthma ([NHS QOF 2023]]

Regular reviews and asthma control checks in children:

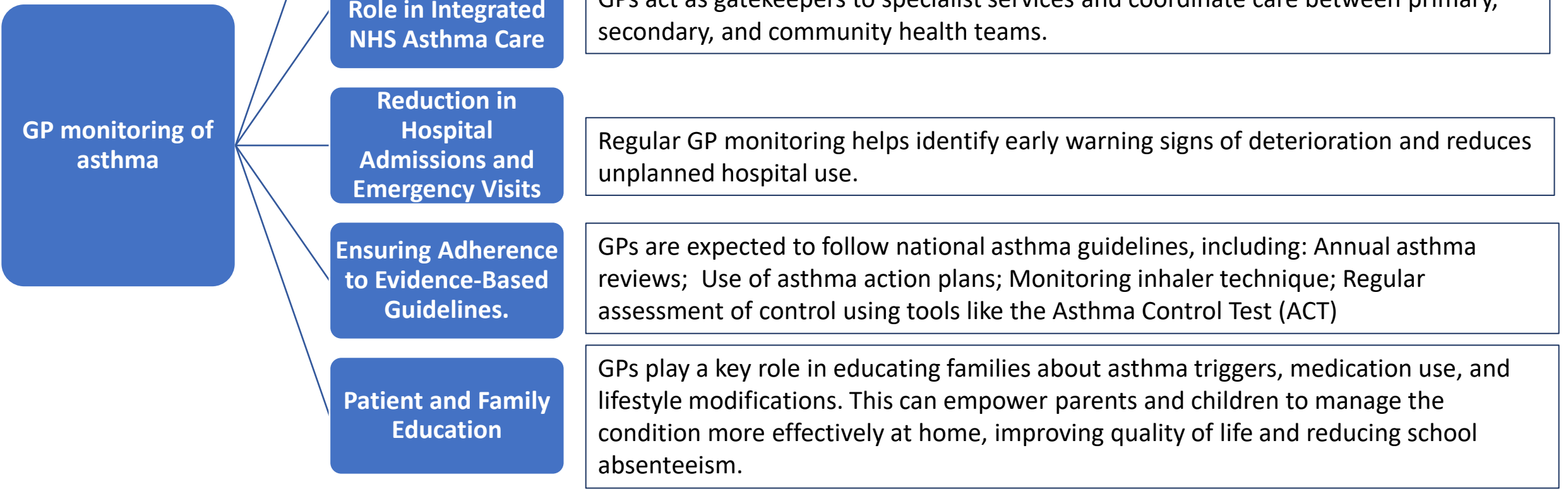
- Prevent exacerbations
- Reduce emergency hospital attendance and admissions
- Reduce long-term lung damage

Aims of Monitoring

- ❑To confirm adherence with treatment
- ❑To confirm appropriate use of inhalers
- ❑To check triggers
- ❑To address environmental issues
- ❑To educate patients/carers
- ❑To review PAAP
- ❑To review the treatment
- ❑Other…



GP monitoring of asthma, why?



Definition of Well-Controlled Asthma in Children

Well controlled asthma:

What to ask?

1. Daytime Symptoms:	**- ≤2 days/week with symptoms (e.g., wheezing, coughing, shortness of breath).**
2. Nighttime Awakenings:	**- ≤1 night/month (for children aged 0–4 years: ≤1 night/week).**
3. Rescue Medication Use:	**- ≤2 days/week (short-acting β_2-agonists, SABA).**
4. Physical Activity:	**- No limitation in normal activities (including play and exercise).**
6. Exacerbations:	**- ≤1/year requiring oral corticosteroids.**
5. Lung Function (if applicable)	**- FEV_1 or peak expiratory flow (PEF) ≥80% of predicted/personal best.**

Well-controlled asthma in children means minimal symptoms, rare exacerbations, normal lung function (where measurable), and unrestricted daily activities.

Asthma Control Test

The **Asthma Control Test (ACT)** is a validated, standardized questionnaire used to assess asthma control in both **adults and children**. Used to support treatment decisions and assess symptom trends over time.

- **C-ACT (ages 4–11): 7 questions total, Each question is scored from 0 to 5**
  - **4 questions** answered by the child (using pictorial faces and score options)
  - **3 questions** answered by the parent/caregiver; **Total score range: 0–27**
- **ACT (12+): 5 questions** about symptoms and activity limitation over the past 4 weeks
  - Scoring range: **5–25**

📊 **<u>Scoring Interpretation:</u>**

- C-ACT, **A Total Score for child 4-11 years = 20–27**, Well-controlled asthma
- ACT, **A Total score 12+ years = 20-25**, We-controlled asthma
- **A Total Score of ≤19** indicates that asthma symptoms may not be well controlled, and a step-up in therapy, reassessment of triggers, or education may be required.

FeNO Monitoring
“High FeNO during follow up”

It is recommend using FeNO monitoring at annual review & before and after changing asthma therapy.

“If you’ve got a high FeNO, in the vast majority of people it means you’re not getting enough inhaled steroid into the lungs,”

“But it could mean in some cases you’ve got genuinely steroid-resistant asthma and you could be high-risk.”

1. Adherence
2. Poor technique
3. Not having enough treatment

what to do, If uncontrolled Asthma,?

At every review following should be considered especially if asthma is not controlled

Diagnosis:

- alternative diagnosis or
- Additional diagnoses (for example, obesity)
- Co-morbidities e.g. allergic rhinitis.

Lack of adherence

Suboptimal inhaler technique

Smoking :

- Active or passive, including vaping using e-cigarettes

Psychosocial factors:

- (e.g. anxiety and depression, relationships and social networks)

Seasonal factors: e.g. worse in H/F season

Triggers, environmental factors/exposures:

- Exercise
- Indoor - indoor mould exposure, pets.
- Outdoor- air pollution
- School

After addressing all the above consider changing Treatment

What to do if well controlled asthma?
Stepping down (adults, young people and children 12+)

Consider stepping down therapy when asthma is well controlled for a three-month timeframe

- **Maintain lowest controlling therapy**
- Discuss the potential risks and benefits of decreasing therapy
- **If stepping down in those using low dose ICS alone or low dose MART, step down to low dose ICS/formoterol PRN (i.e. AIR)**
- Agree how the step-down will be (self-) monitored, reviewed, and followed-up
- Review and update the person's asthma action plan

Patient Education

Patients should not only be coached on their inhaler(s) additional information should be provided including :

- Safe storage of the device.
- Knowing when inhaler is empty (ideally finding an inhaler with a dose counter) and returning it for safe disposal at the community pharmacy.[13]
- How to clean the device.
- Some inhaler devices once removed from their packaging have a limited shelf life. Please check the Summary of Products and Characteristics (SPC) for each medication.
- The importance of rinsing the mouth and throat after using a steroid inhaler to minimise side effects such as oral candidiasis or dysphonia.

- **When to use it. (Frequency and use of medication should be included in an action plan).**
- **Possible side effects, and any concerns the patient may have.**

The importance of appropriate inhaler technique

Mask with an effective seal

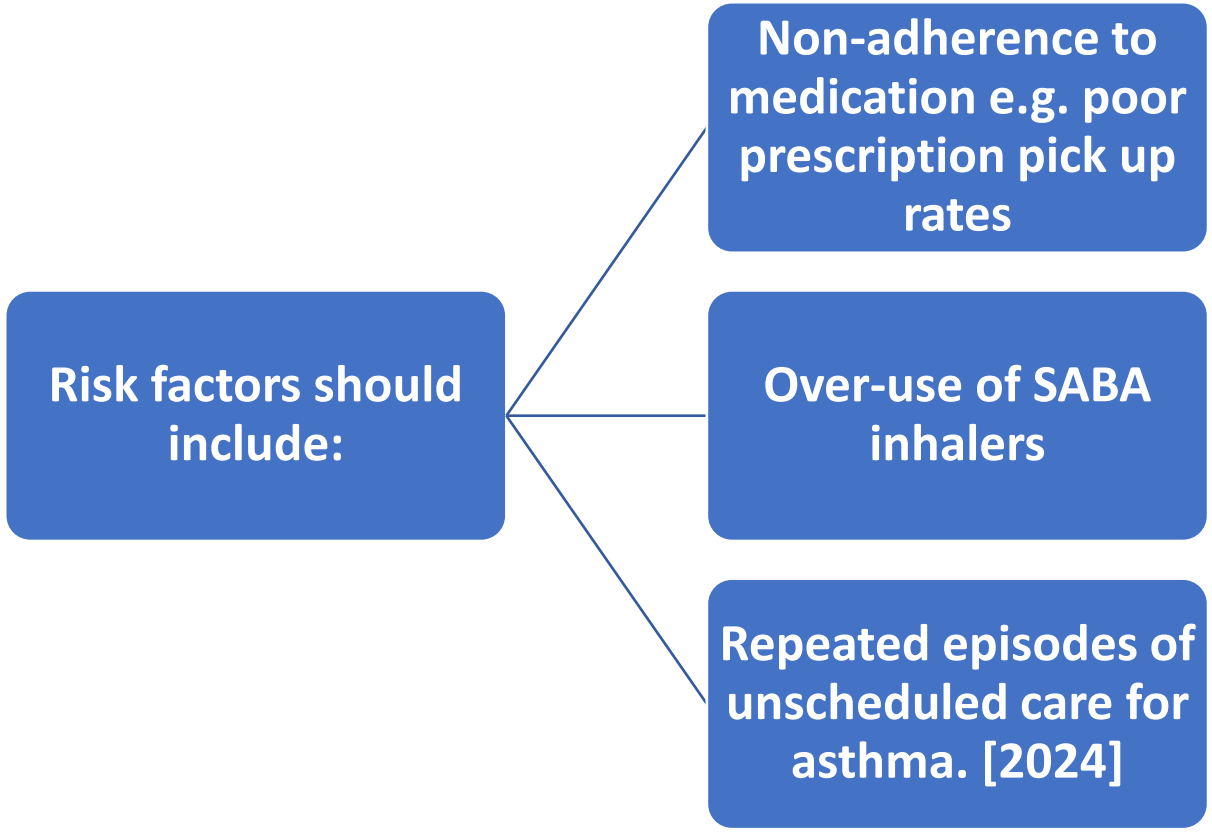
Mask with a poor seal

Monitoring: Risk-Stratified Care

Consider actively identifying people with asthma who are at risk of poor outcomes and tailor care to their needs.

To improve asthma care for people judged to be at high risk of adverse outcomes.

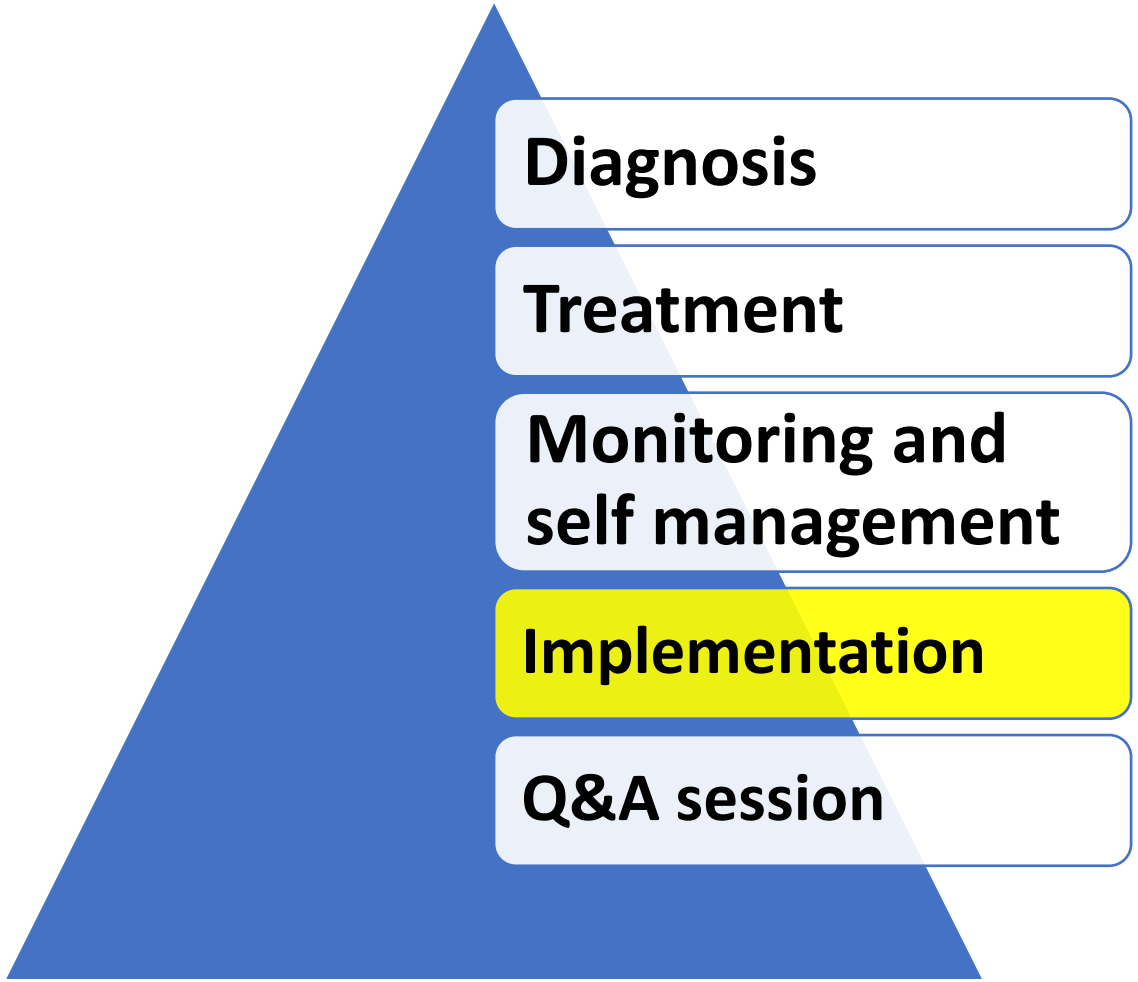
There should be a benefit in identifying people ‘at risk’ of poor asthma outcomes and recommended that primary care services should consider introducing a **risk- stratification system which then allows care to be adjusted according to the greater needs of some people**.



Organisation and Delivery of care

- In primary care, people with asthma should be reviewed at least annually by a healthcare professional with appropriate training in asthma management.
- The review should incorporate a written personalised action 10 plan. [BTS/SIGN 2019, amended 2024]
- Think about telehealth care as an option for supporting self-management. 12 [BTS/SIGN 2019]
- Think about computerised decision support systems for patient use to support self-management. [BTS/SIGN, 2019]

Objectives- of This Talk
The New Joint Asthma Guideline, Nov 2024



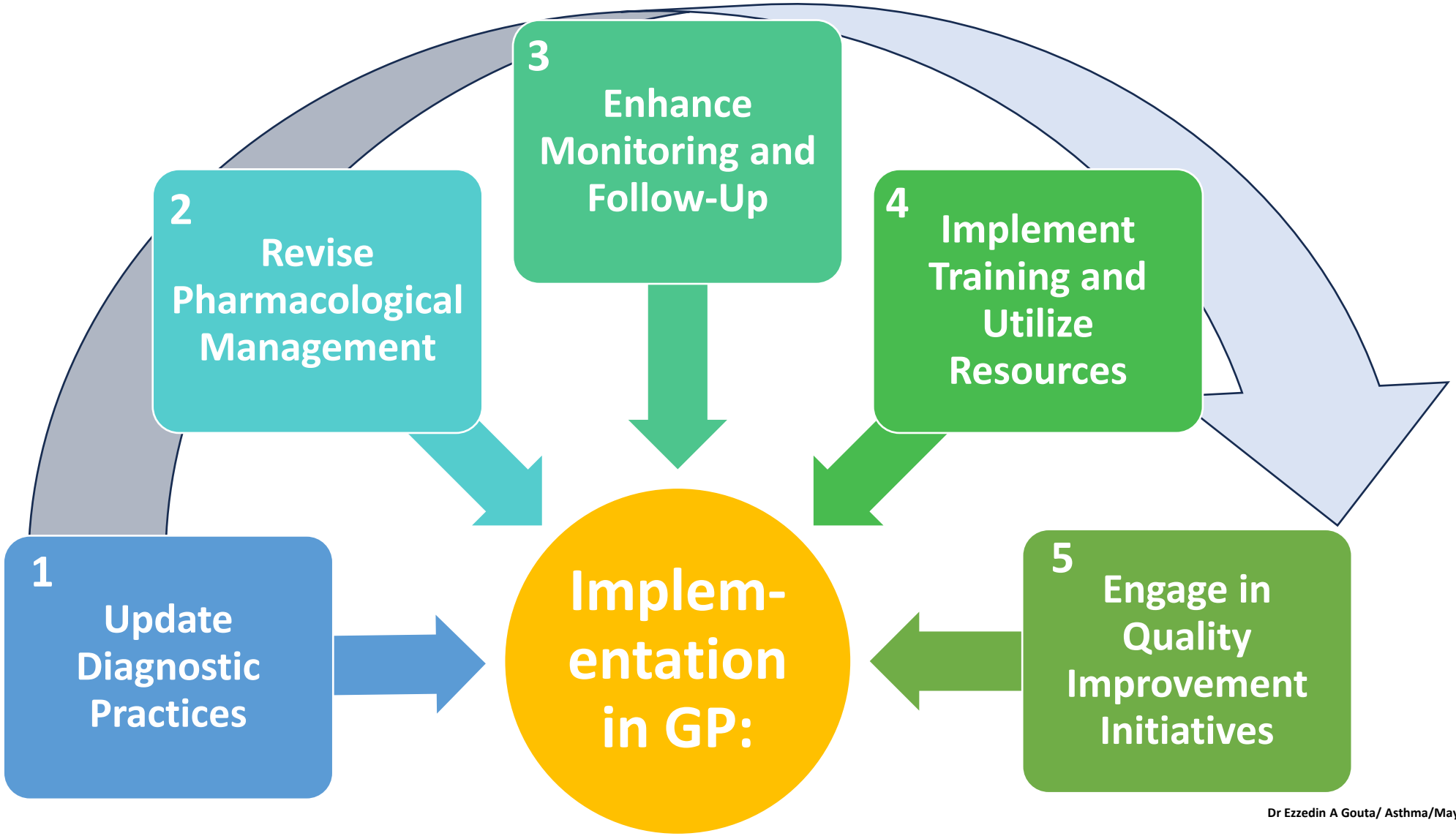
Implementing the new NICE Asthma Guidelines is crucial for several reasons

- **Improved Diagnosis & Monitoring**:
  - The updated guidelines aim to **enhance the accuracy** of asthma diagnosis and monitoring, ensuring patients receive the **right treatment**.
- **Better Asthma Control**:
  - By following the recommendations, help patients manage their asthma more effectively, **reducing the risk of severe attacks**.
- **Standardized Care**:
  - The guidelines provide a **consistent approach** to asthma management across healthcare settings, ensuring all patients receive high-quality care.
- **Addressing Health Inequalities**:
  - The new framework considers **disparities in asthma** care, helping to bridge gaps in treatment and access.
- **Environmental Impact**:
  - The recommendations focus on **reducing the environmental effects** of asthma treatments, such as inhaler use.

Implementing the 2024 joint BTS/NICE/SIGN Asthma guidelines in General Practice

A structured approach:

Implementation in General practice involves several key steps to align with the latest evidence-based recommendations



Implementing the 2024 joint BTS/NICE/SIGN Asthma guidelines in General Practice

- **Update Diagnostic Practices:**
  - **Objective Testing**: Incorporate spirometry and fractional exhaled nitric oxide (FeNO) measurements as standard diagnostic tools for individuals aged 5 and above with suspected asthma. These tests enhance diagnostic accuracy. ([NICE][2])
  - **Diagnostic Hubs**: Establish or collaborate with asthma diagnostic hubs to facilitate access to necessary equipment and expertise, especially in areas with limited resources. ([NICE][3])
- **Revise Pharmacological Management**:
  - **First-Line Treatment**: Prescribe a low-dose combination of inhaled corticosteroids (ICS) and formoterol as needed for individuals aged 12 and over with newly diagnosed asthma. This approach addresses both symptom relief and underlying inflammation. ([brit-thoracic.org.uk][4])
  - **Avoid SABA Monotherapy**: Refrain from prescribing short-acting beta2 agonists (SABA) alone, as over-reliance is linked to increased risks of asthma attacks and mortality. ([brit-thoracic.org.uk][4])
  - **Environmental Considerations**: Educate patients about the environmental impact of certain inhalers and consider prescribing dry powder inhalers when appropriate. ([Latest news & breaking headlines][5])

Implementing the 2024 joint BTS/NICE/SIGN Asthma guidelines in General Practice

- **Enhance Monitoring and Follow-Up:**
  - **Asthma Action Plans**: Provide personalized asthma action plans to all patients, outlining how to manage their condition and what steps to take during exacerbations.
  - **Regular Reviews**: Conduct routine assessments focusing on symptom control, inhaler technique, adherence to therapy, and exposure to triggers like smoking or allergens.
  - **Post-Attack Follow-Up**: Ensure patients who experience asthma attacks receive a follow-up appointment within two working days of hospital discharge to reassess and adjust management plans.
- **Implement Training and Utilize Resources:**
  - **Staff Education**: Provide training for healthcare professionals on the new guidelines to ensure consistent and effective implementation.
  - **Utilize Available Tools**: Leverage resources such as action plan templates and implementation guides provided by organizations like NICE and the PCRS to support guideline adoption.
- **Engage in Quality Improvement Initiatives:**
  - **Audit and Feedback**: Regularly review practice performance against guideline recommendations and provide feedback to healthcare teams to drive improvements.
  - **Patient Education**: Educate patients on the importance of adherence to treatment plans and the rationale behind changes in their management to enhance engagement and outcomes.

NICE Quality statement 4: Follow-up by General Practice after Emergency Care

NICE National Institute for Health and Care Excellence

Quality statement, Reference number:QS25

- People who receive treatment in an emergency care setting for an asthma attack are followed up by their general practice within 2 working days of discharge.

  [2013, updated 2018]

Benefits:
• **Reduced readmission risk**
• **Improved inhaler technique**
• **Updated asthma action plan**
• **Parental reassurance and education**
• **Continuity of care**
• **Holistic review**

Reference: NICE QS25, Quality statement 2 – https://www.nice.org.uk/guidance/qs25

Benefits of Post-Hospital Discharge of Asthma Review by Primary Care

NICE National Institute for Health and Care Excellence

Benefit	Description
Reduced readmission risk	Early detection of relapse; improved treatment adherence
Improved inhaler technique	Reduces poor control and future attacks
Updated asthma action plan	Empowers families with clear, personalised instructions
Parental reassurance and education	Increases confidence in care at home
Continuity of care	Strengthens coordination between hospital & GP
Holistic review	Identifies home/environmental or safeguarding concerns

Post-Hospital Discharge Asthma Review Protocol/Checklist (Primary Care)*

- **There are two steps in the process:**

Admission, discharge, and notification of GP: D1

Post-discharge follow up by primary care within 2 days

📌 Patient identification:

☐ Monitor incoming discharge summaries (via NHS mail, EHR inbox, or ERS).
☐ Use alerts or codes like “asthma exacerbation”, “A&E attendance for asthma”, or “hospital discharge for asthma”. ☐ Automated Notifications: Hospitals could notify the patient's GP immediately upon discharge appointment

📌 Step 2: Administrative Action (Day 0–1):

☐ Reception/administration staff to flag the patient record for priority review.
☐ Contact patient to book a review within 2 working days
☐ Offer face-to-face, telephone, or video consultation depending on clinical need and patient preference.

Post-Hospital Discharge Asthma Review Protocol/Checklist (Primary Care)*

- What primary care and GP could do to implement seeing patients within 2 days after discharge from hospital after treatment for acute asthma attach?. **There are two steps in the process:**

Admission, discharge, and notification of GP: D1

Post-discharge follow up by primary care within 2 days

📌 **Patient identification:**

☐ Monitor incoming discharge summaries (via NHS mail, EHR inbox, or ERS).

☐ Use alerts or codes like "asthma exacerbation", "A&E attendance for asthma", or "hospital discharge for asthma". ☐ Automated Notifications: Hospitals could notify the patient's GP immediately upon dischargeappointment

The new BTS/NICE/SIGN Asthma Guideline Asthma in Children-Age groups

It focuses on the following aspects of the patient journey: Adults and Children

Objectives of This Talk

- Diagnosis
- Treatment
- Monitoring and self management
- Implementation
- Q&A session

- Under 16 years
- 5-16 years
- Above 12 years
- 5-11 years
- Under 5 years

Questions?

Dr Ezzedin Gouta

21 May 2025