# Managing wheeze in the under 5's; When can we diagnose asthma?

**Suzanne Bailey, ICS CYP Clinical Respiratory Lead/Senior Specialist CYP Asthma Practitioner**

27th June 2024

# Introduction

- We are:

## Surrey Heartlands CYP Asthma Team
## 'Beating Asthma Together'

**Team members are:**

**Suzanne Bailey – ICS CYP Clinical Respiratory Lead/Senior Specialist CYP Asthma Practitioner – suzanne.bailey5@nhs.net**

**Specialist CYP Asthma Practitioner – Lisa Cook – lisa.cook40@nhs.net**

**Project Manager – Vacancy**

**With support from: Charlotte Arnold and Julia Newman – CYP Long Term Conditions Transformation Leads**

**Keeping an eye on us and the budget are Fiona Whitaker and Kylie Langridge, and we also have support from Nicola Mundy from Surrey County Council**

**Team email address: syheartlands.childrensasthma@nhs.net**

# Agenda

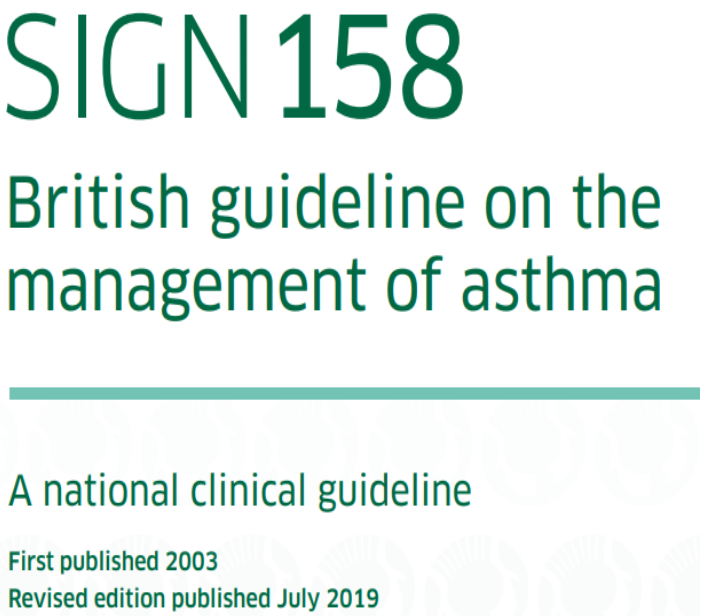
Please turn your cameras on ☺

| | |
|---|---|
| 12:30-12:35 | Welcome & Introductions |
| 12:35-13:05 | Managing wheeze in the under 5's; When can we diagnose asthma? |
| 13:05-13:15 | Q&A |
| 13:15-13:30 | Survey |

# What is wheeze?

- Wheeze is a high-pitched, expiratory, whistling sound associated with increased work of breathing.
- Wheeze is caused by a lower airway obstruction.
- Resulting in bronchoconstriction, mucosal oedema and inflammation.
- 75% of children with pre-school wheeze are non-atopic.
- Home | Spotting the Sick Child

# What do the guidelines say?




Asthma | British Thoracic Society | Better lung health for all (brit-thoracic.org.uk)

Page 29 – Wheezing in preschool children and the future risk of developing persistent asthma

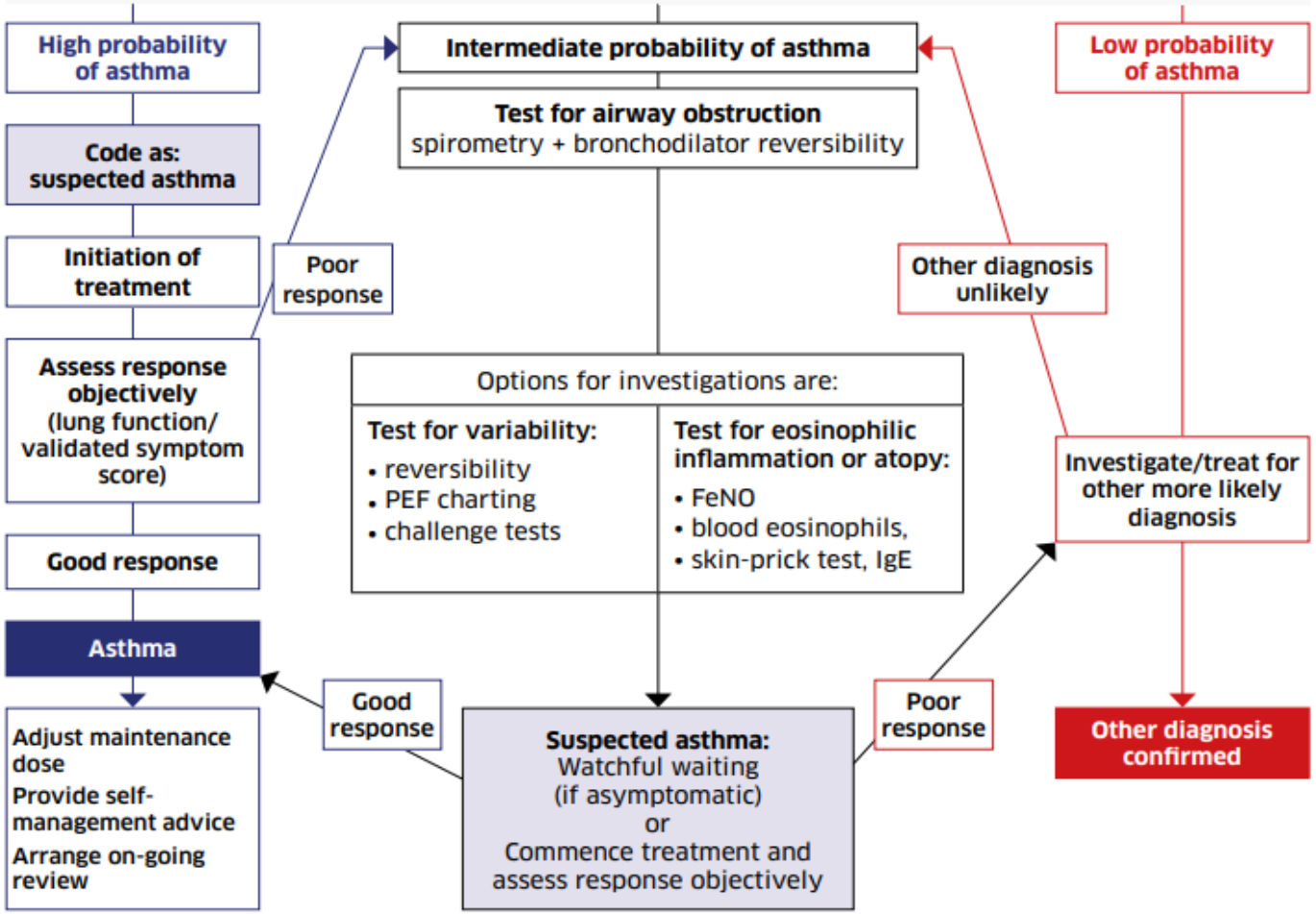
- Works on the theory of the presence of certain factors increasing the probability that a child with respiratory symptoms will have asthma. These include:

1. Age at presentation – early wheeze, better prognosis
2. Sex – male high risk in prepubertal, then female post puberty
3. Severity and frequency – increases risk
4. Atopy and family history of atopy – especially maternal atopy
5. Persistent abnormal lung function – (tertiary care)

**Presentation with respiratory symptoms: wheeze, cough, breathlessness, chest tightness[1]**

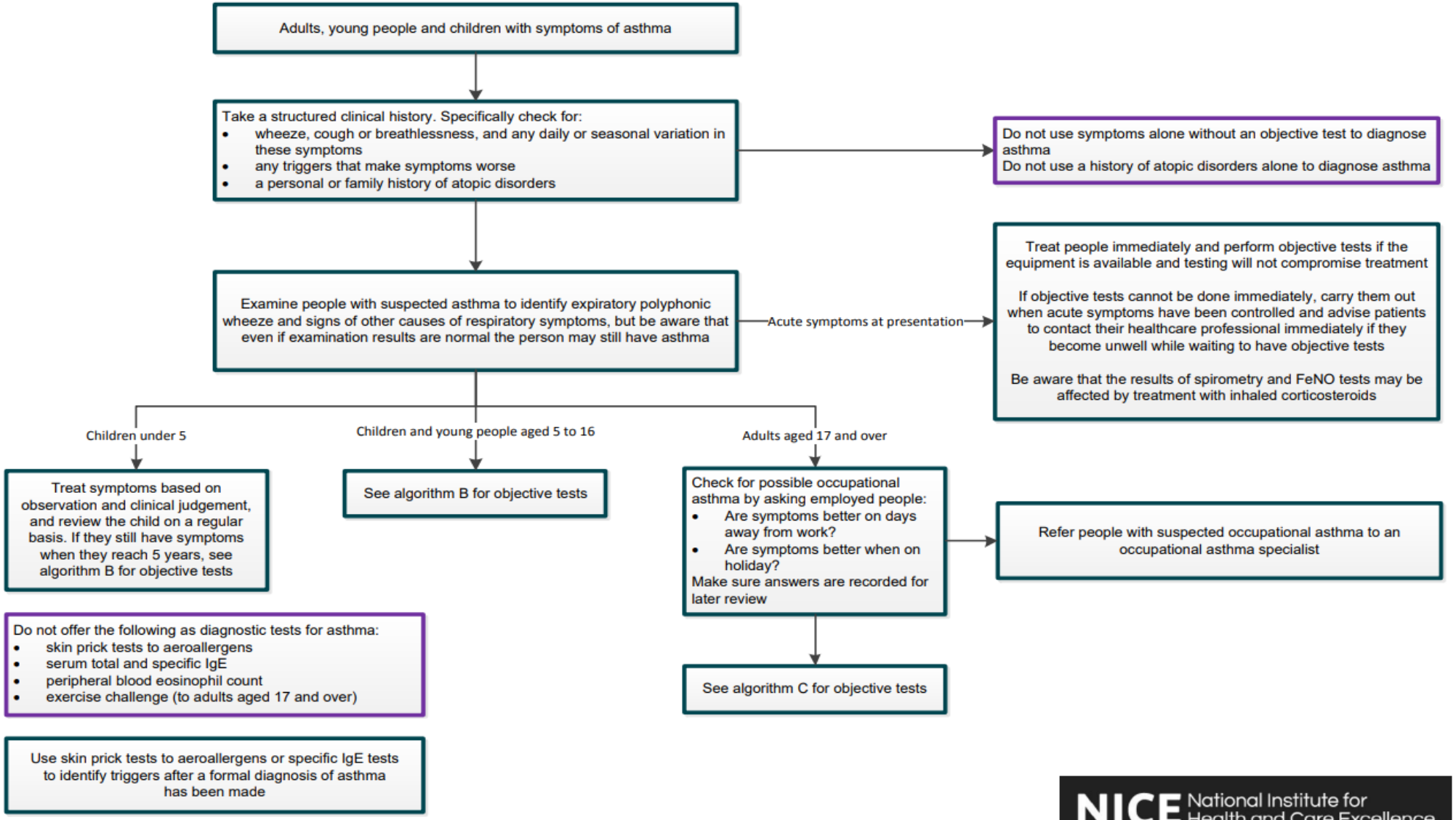
**Structured clinical assessment (from history and examination of previous medical records)**
Look for:

- recurrent episodes of symptoms
- symptom variability
- absence of symptoms of alternative diagnosis
- recorded observation of wheeze
- personal history of atopy
- historical record of variable PEF or $FEV_1$




[1] In children under 5 years and others unable to undertake spirometry in whom there is a high or intermediate probability of asthma, the options are monitored initiation of treatment or watchful waiting according to the assessed probabilityof asthma.

# Algorithm A Initial clinical assessment for adults, young people and children with suspected asthma



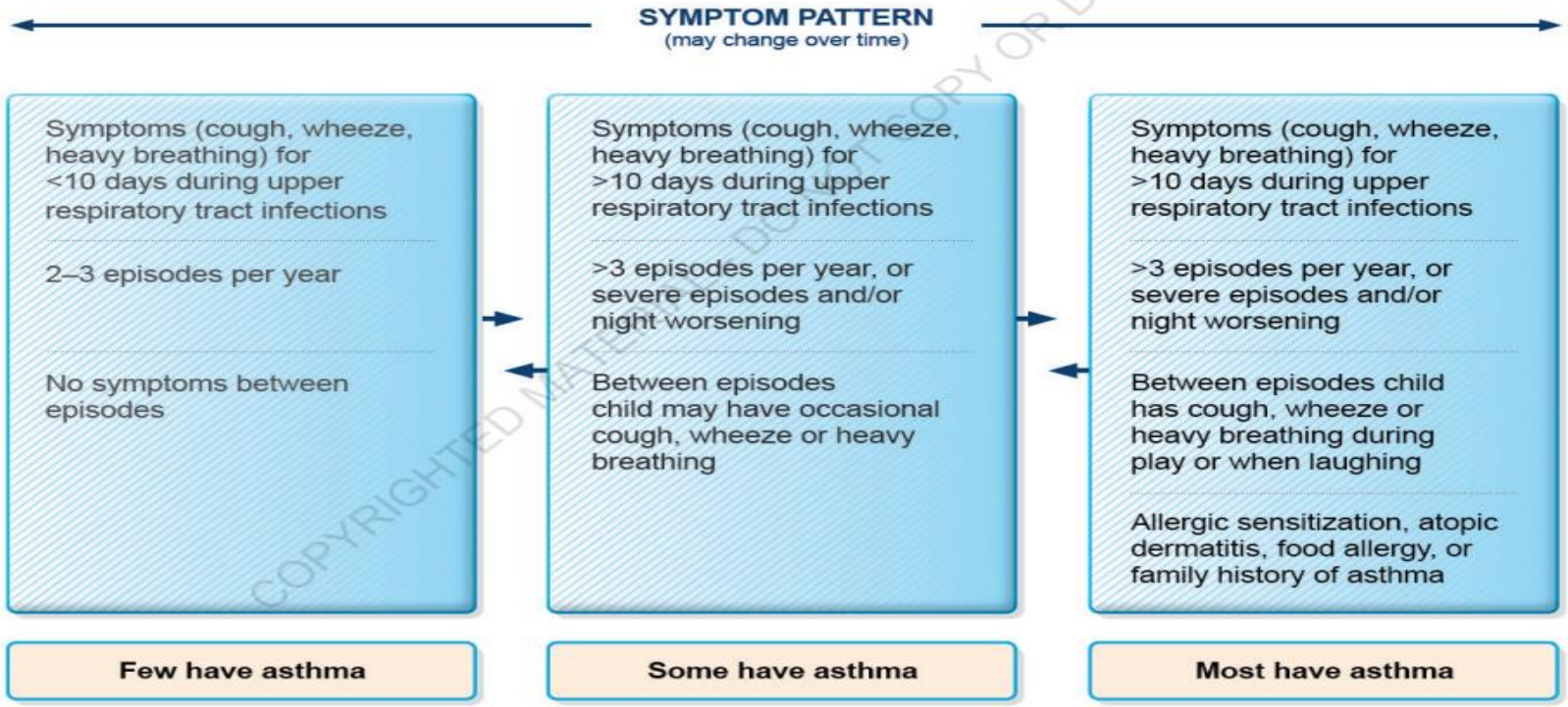

This algorithm is based on recommendations from NICE's guideline on asthma: diagnosis, monitoring and chronic asthma management (2017)

NICE National Institute for Health and Care Excellence

GLOBAL INITIATIVE FOR ASTHMA

Global Initiative for Asthma - Global Initiative for Asthma - GINA (ginasthma.org)

**Box 6-1. Probability of asthma diagnosis in children 5 years and younger**





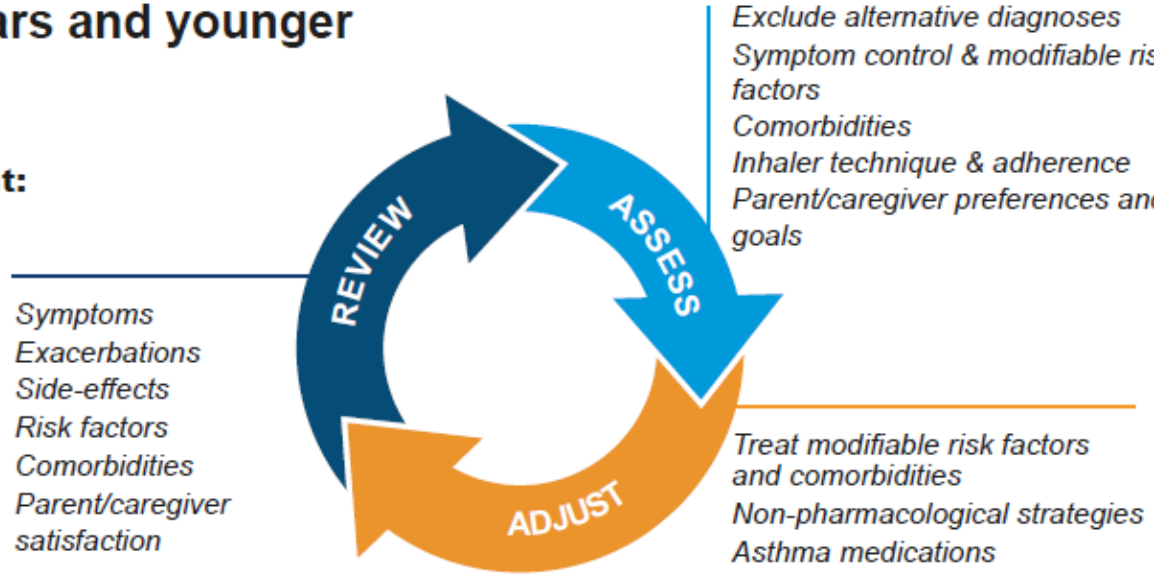

## Symptoms suggestive of asthma in children 5 years and younger

As shown in Boxes 6-1, 6-2 and 6-3, an asthma diagnosis in children 5 years and younger can often be based on:

- Symptom patterns (recurrent episodes of wheeze, cough, breathlessness (typically manifested by activity limitation), and nocturnal symptoms or awakenings)

# GINA 2023 – Children 5 years and younger

**Personalized asthma management:**
Assess, Adjust, Review response




**Asthma medication options:**
Adjust treatment up and down for individual child's needs

| | STEP 1 | STEP 2 | STEP 3 | STEP 4 |
|---|---|---|---|---|
| **PREFERRED CONTROLLER CHOICE** | *(Insufficient evidence for daily controller)* | Daily low dose inhaled corticosteroid (ICS) (see table of ICS dose ranges for pre-school children) | Double 'low dose' ICS *(See Box 6-7)* | Continue controller & refer for specialist assessment |
| *Other controller options (limited indications, or less evidence for efficacy or safety)* | *Consider intermittent short course ICS at onset of viral illness* | *Daily leukotriene receptor antagonist (LTRA), or intermittent short course of ICS at onset of respiratory illness* | *Low dose ICS + LTRA Consider specialist referral* | *Add LTRA, or increase ICS frequency, or add intermittent ICS* |
| **RELIEVER** | As-needed short-acting beta$_2$-agonist | | | |
| **CONSIDER THIS STEP FOR CHILDREN WITH:** | Infrequent viral wheezing and no or few interval symptoms | Symptom pattern not consistent with asthma but wheezing episodes requiring SABA occur frequently, e.g. ≥3 per year. Give diagnostic trial for 3 months. Consider specialist referral.<br>Symptom pattern consistent with asthma, and asthma symptoms not well-controlled or ≥3 exacerbations per year. | Asthma diagnosis, and asthma not well-controlled on low dose ICS<br>Before stepping up, check for alternative diagnosis, check inhaler skills, review adherence and exposures | Asthma not well-controlled on double ICS |

# Objective Testing

- Some children as young as 4 years can do FeNO or peak flow
- Children around the age of 6 years may be able to do spirometry
- Peak Flow diaries for 2 weeks to look for diurnal peak flow variability.
- Daily diurnal PEF variability is calculated from twice daily PEF as:
- $\frac{\text{Each day's highest – Same day's lowest}}{\text{Mean of that day's highest and lowest}}$
- A variability of 10% is significant

# Some of the Differential Diagnosis

- Bronchiolitis
- Asthma
- Croup
- Persistent Bacterial Infection
- Inhaled foreign body
- NAI (non-accidental injury)
- Neoplastic (tumour)
- Cardiac (congenital)
- Reflux – unsafe swallow
- Laryngomalacia (floppy larynx)
- Vocal cord dysfunction
- Cystic fibrosis
- Primary Ciliary Dyskinesia

# Prevention of wheeze in under 5's with viral infections

Most children who are usually triggered by infection are unlikely to respond to ICS

Treat with: Intermittent bronchodilators via spacer – confirm inhaler technique – smoking cessation

# Prevention of wheeze in the under 5's – multiple triggers

| | | | | |
|---|---|---|---|---|
| Some children with multiple triggered wheeze may respond to ICS | These children will be atopic, and/or have severe and recurrent symptoms | To be coded as suspected asthma. | Treat with bronchodilators and spacer | Trial if treatment with ICS (clenil 100-200mcg bd) for 6-12 weeks |
| Confirm inhaler technique | Confirm adherence | Review after 6-12 weeks and stop if of no benefit | Smoking cessation | Avoidance and/or treatment of allergic triggers |

# What is a trial of treatment?

6-8 WEEKS OF INHALED CORTICOSTEROID THROUGH A SPACER FOLLOWING DISCUSSION RE TECHNIQUE AND ADHERENCE.

ASSESSMENT OF RESPONSE TO INHALED CORTICOSTEROID.

# 6-year-old M – Risk: HIGH

- Commenced SABA Jul 2019, Commenced on ICS Oct 2022 (no review to assess response to treatment, referred to secondary care)
- Previous eczema
- Father – asthma as a child and now hayfever
- Mum vapes outside
- Has a dog and a cat
- WNB Was (Not Brought)for FeNO
- Poor adherence to clenil
- Needed spacer with mouthpiece, not mask
- Usually unwell in winter with cough at night and wheeze
- ACT 20
- Under secondary care
- Recommendation – annual asthma review face to face in springtime to discuss treatment plan for summer. Repeat referral for FeNO. Repeat spirometry when older as technique needs improvement.

# Diagnosis

- Code as suspected asthma if responds to inhaled ICS
- Start performing age-appropriate objective testing
- Being mindful that results may be normal if compliant with ICS.
- Do not stop ICS for objective testing
- Code as asthma if continues to be a high probability and responding to treatment

# Latest news

- NEW BTS/NICE/SIGN Guideline:  Asthma: diagnosis, monitoring and chronic asthma management: Draft for consultation, June 2024
- Consultation | Asthma: diagnosis, monitoring and chronic asthma management | Guidance | NICE
- 450.pdf (nice.org.uk)

Comments to be submitted by 5pm on the 30th July

NHS Futures page:

Surrey Heartlands CYP Asthma Team – Beating Asthma Together

# References


- Bush, A., Grigg, J. and Saglani, S., 2014. Managing wheeze in preschool children. BMJ, 348.
- Makhecha, S. and Saglani, S., 2021. Diagnosis and management of wheeze in pre-school children The Pharmaceutical journal. https://pharmaceuticaljournal.com/article/ld/diagnosis-and-management-of-wheeze-in-pre-school-children

# Questions

# Please complete our feedback form

https://forms.office.com/e/iC8Fu05Jbj