Using a trial of treatment with an ICS to further support an asthma diagnosis

Speakers: Lisa cook

CYP asthma practitioner

12th June 2024

Surrey Heartlands
Children and Young People's Asthma Team
beating asthma together

Agenda

Please turn your cameras on ☺

- 12:30-12:35 Welcome & Introductions
- 12:35-13:05 Using a trial of treatment with an ICS to further support an asthma diagnosis.
- 13:05-13:15 Q&A
- 13:15-13:30 Survey

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

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

Scenario 1

9-year-old boy presents with cough, wheeze and shortness of breath

- **Mum has noticed coughs more when near the cat, especially at night when cat sleeps on his bed.**
- **Mum has asthma, has used mum's inhaler, finds this helps.**
- **Had eczema as a baby, is allergic to pollen**
- **Has a wheeze on auscultation**
- **Highly probable that has asthma**

Taking a clinical history

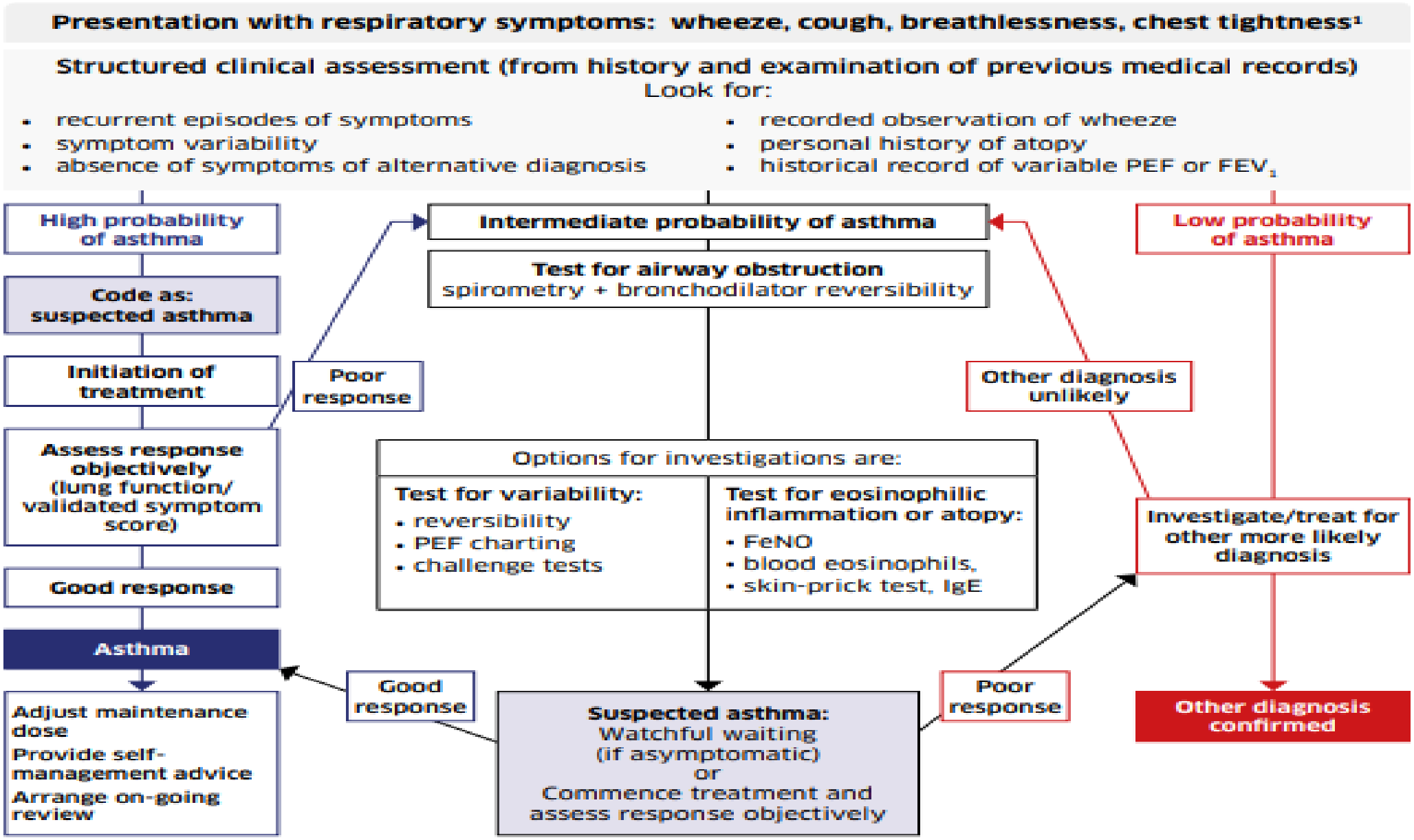
- What are the main symptoms? Any cough, wheeze, shortness of breath, tight chest?
- Have you noticed any noise on inspiration or expiration?
- How long have they been going on?
- Is there any variability in symptoms? Changes seasonally, or differences throughout the day? Any night time waking with asthma symptoms?
- What triggers off the symptoms?
- Any other medical history? Was he born prematurely?
- Is he taking any medications

- Does he have any family history of asthma or any other respiratory conditions?
- Does he have any atopy or family history of atopy?
- Does he have repeated respiratory infections, especially in winter?
- Is he up to date with his immunisations?
- Does anyone in the house smoke or vape?
- Increased probability if wheeze, atopy, cough, chest tightness, symptoms worse at night or early morning, known triggers, no symptoms or signs to suggest an alternative diagnosis.

Acronym for history taking

- **O**- onset
- **L-** Location
- **D-** Duration
- **C-** Characteristics
- **A-** Aggravating or associated factors
- **R-** Relieving factors
- **T-** Treatment

Figure 1: Diagnostic algorithm



[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.

What is a trial of treatment?

6 weeks of Inhaled corticosteroid through a spacer

Assess response to inhaled corticosteroid

Need to do objective tests before and after treatment.

Check inhaler technique before trial of treatment

Check that the parent is supervising the child taking their inhaler.

Discuss adherence strategies

Check understanding

Inhaled corticosteroids should be considered for patients with any of the following asthma-related features:

- asthma attack in the last two years
- using inhaled β2 agonists three times a week or more
- symptomatic three times a week or more
- waking one night a week. (BTS, 2019)


Clenil Modulite 50
PREVENTER


Clenil Modulite 100
PREVENTER


AeroChamber
Plus ™

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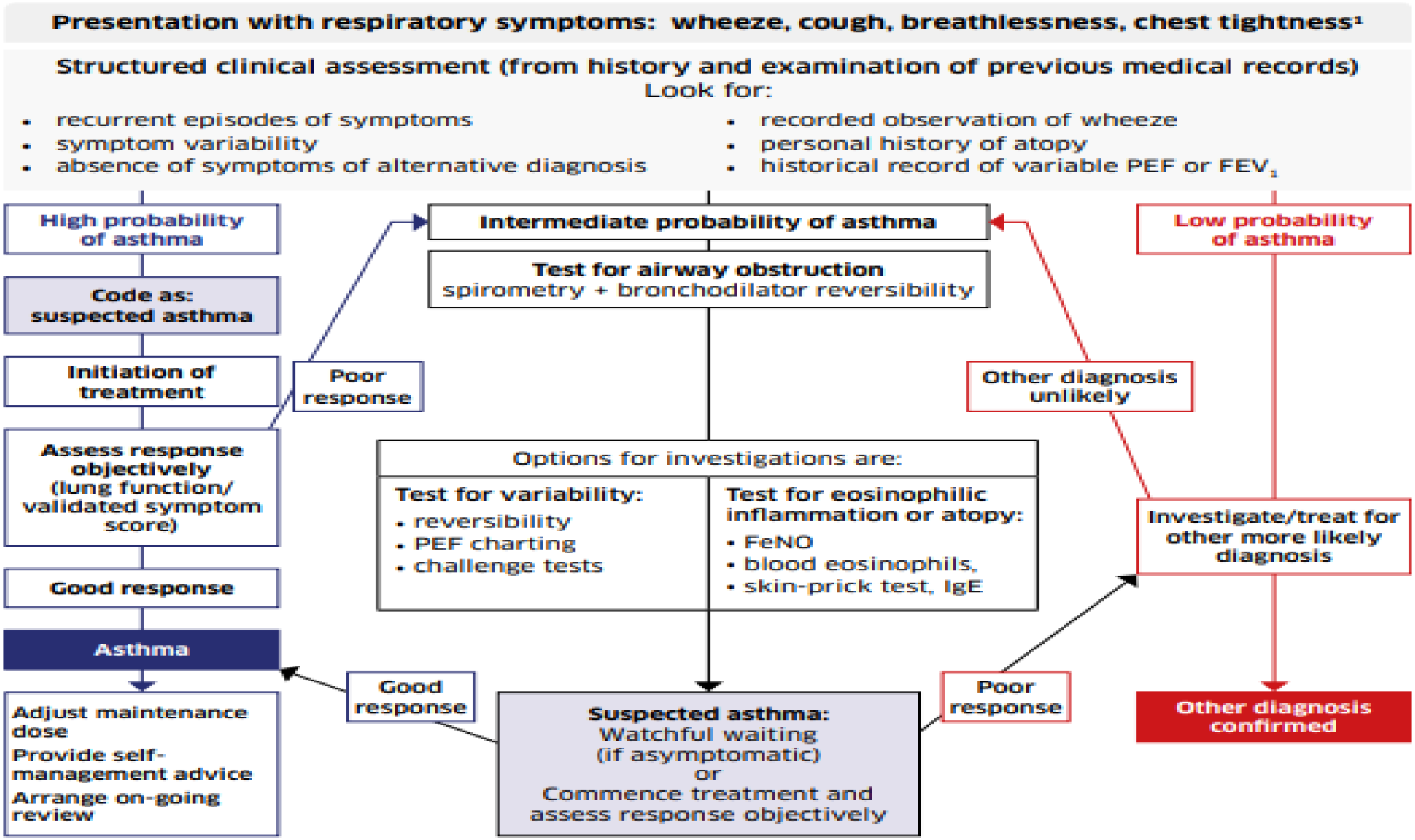

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What objective test do I need to do?

- Validated symptom questionnaire
  ACT/ C-ACT score – poor control less than 20 for adults, less than 19 for children, mini AQLQ

- Lung function testing if available- feno and spirometry

- Peak flow tests- measure morning and evening for 2-4 weeks, best of 3 blows

19 If you child's score is less than 19, it may be a sign that their asthma is not as controlled as it could be. Take this score to your doctor to talk about the results.

Have you child answer these questions:

Score

1. How is your asthma today?

2. How much of a problem is your asthma when you exercise or play sports?

3. Do you cough because of your asthma?

4. Do you wake up during the night because of your asthma?

Please complete the following questions on your own:

5. During the last 4 weeks, how many days did your child have day time asthma symptoms?

5	4	3	2	1	0
Not at all	1-3 days	4-10 days	11-18 days	19-24 days	Everyday

6. During the last 4 weeks, how many days did your child wheeze during the day because of asthma?

5	4	3	2	1	0
Not at all	1-3 days	4-10 days	11-18 days	19-24 days	Everyday

7. During the last 4 weeks, how many days did your child wake up in the night because of asthma?

5	4	3	2	1	0
Not at all	1-3 days	4-10 days	11-18 days	19-24 days	Everyday

Total Score

Asthma Control Test

Ages 12+

1 **In the past 4 weeks, how much of your time did your asthma keep you from getting as much done at work, school, or at home?**

All of the time	Most of the time	Some of the time	A little of the time	None of the time	score
1	2	3	4	5	

2 **During the past 4 weeks, how often have you had shortness of breath?**

More than once per day	Once per day	3–6 times per week	Once or twice per week	Not at all	score
1	2	3	4	5	

3 **During the past 4 weeks, how often did your asthma symptoms (wheezing, coughing, shortness of breath, chest tightness or pain) wake you up at night or earlier than usual in the morning?**

4 or more times per day	1 or 2 times per day	2 or 3 times per week	Once per week or less	Not at all	score
1	2	3	4	5	

4 **During the past 4 weeks, how often have you used your rescue inhaler or nebulizer medication (such as albuterol)?**

3 or more times per day	1 or 2 times per day	2 or 3 times per week	Once a week or less	Not at all	score
1	2	3	4	5	

5 **How would you rate your asthma control during the past 4 weeks?**

Not controlled at all	Poorly controlled	Somewhat controlled	Well controlled	Completely controlled	score
1	2	3	4	5	

total

How to calculate peak flow variability (GINA 2023)

- Twice per day readings (Best of 3)
- Calculate daily score using: (Highest - Lowest) / mean of (highest +lowest) x 100
- Add up each daily score (1-2 weeks) and calculate the mean.

- Ashdown, H., Brown, T., Hickman, K., Roberts, A., & Stonham, C. A PCRS consensus on how to calculate and interpret peak expiratory flow rate variability and reversibility for asthma diagnosis.

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Nice guideline: diurnal variability of 20%

GINA guideline: Diurnal variability of >10% in adults and >13% in children should be demonstrated

What next?

- Follow up 6-8 weeks
  Good response confirm asthma diagnosis
- Repeat ACT/C-ACT – look for improvement in score
- Variation of more than 20% in peak flow readings supports asthma diagnosis (NICE) 13% (GINA)
- Repeat spirometry and FENO if done at previous appointment
- Poor response – check inhaler technique, and adherence, arrange further tests and Consider alternative diagnosis

Spirometry and Feno results

Feno result for children

Age 5-16 yrs 35pbb or above strongly suggests an asthma diagnosis.

Age 17yrs + 40pbb or above strongly suggests asthma diagnosis

Spirometry

Age 5-16 yrs improvement of 12% or more in FEV1 as a positive test.

Age 17+ 12% or more and an increase of 200ml or more as a positive test

purpose of a trial of treatment

To see if airflow obstruction reverses to normal after treatment

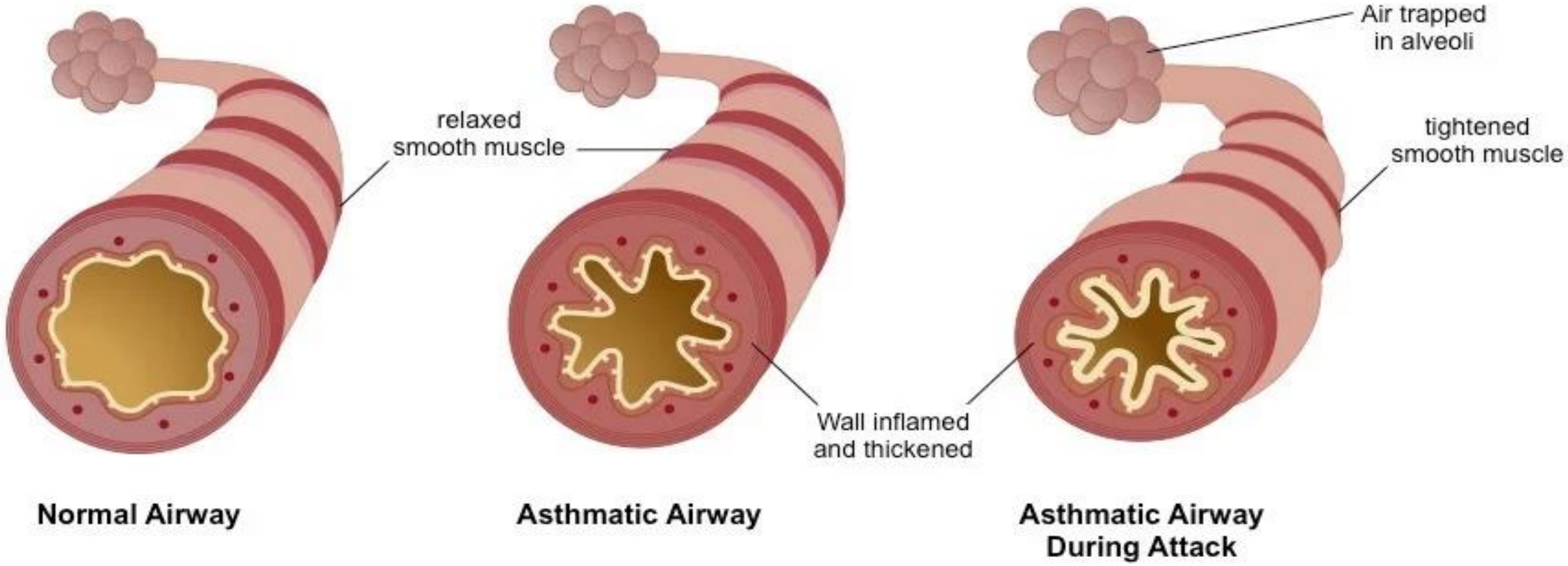
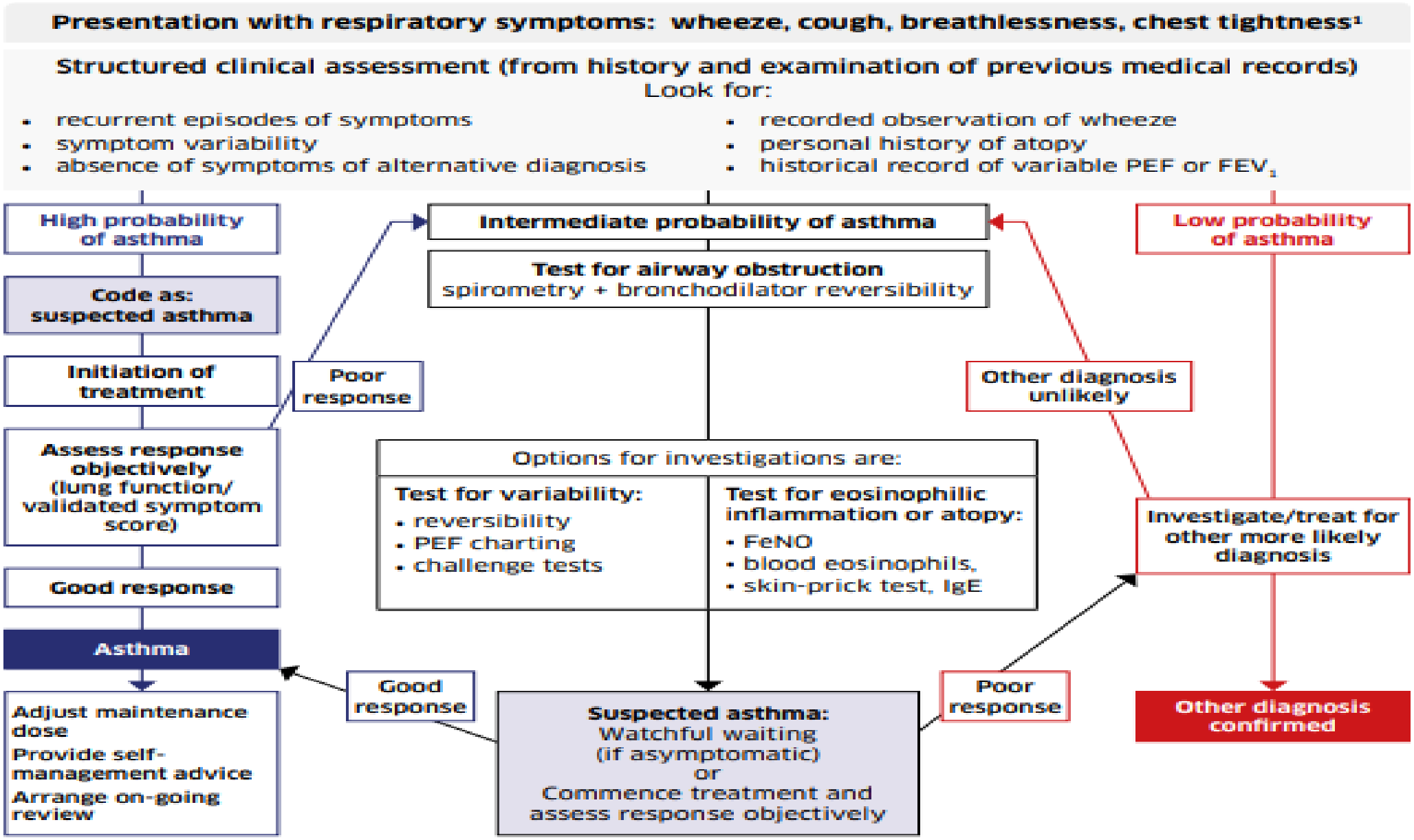


Figure 1: Diagnostic algorithm



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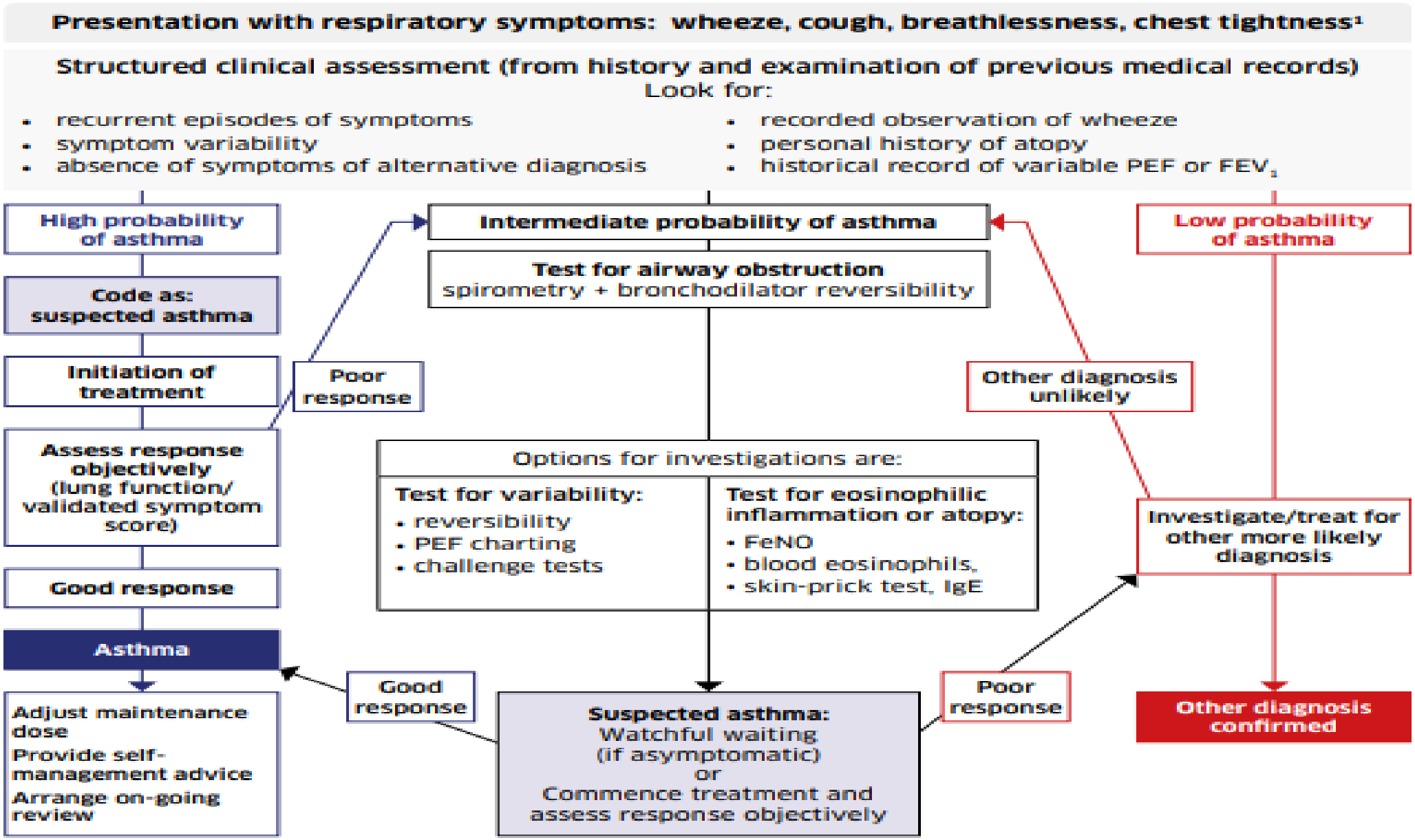
Scenario 2

14 year old girl presents with a cough, has had this throughout the winter, had covid 2 months ago, hasn't been the same since. Struggles when exercising, plays netball twice a week, has to sometimes have a break during a match as feels she can't catch her breath, is worried might lose her place on the netball team.
No immediate family history of asthma but uncle has asthma
Not allergic to anything she is aware of.
Intermediate probability of asthma

Figure 1: Diagnostic algorithm



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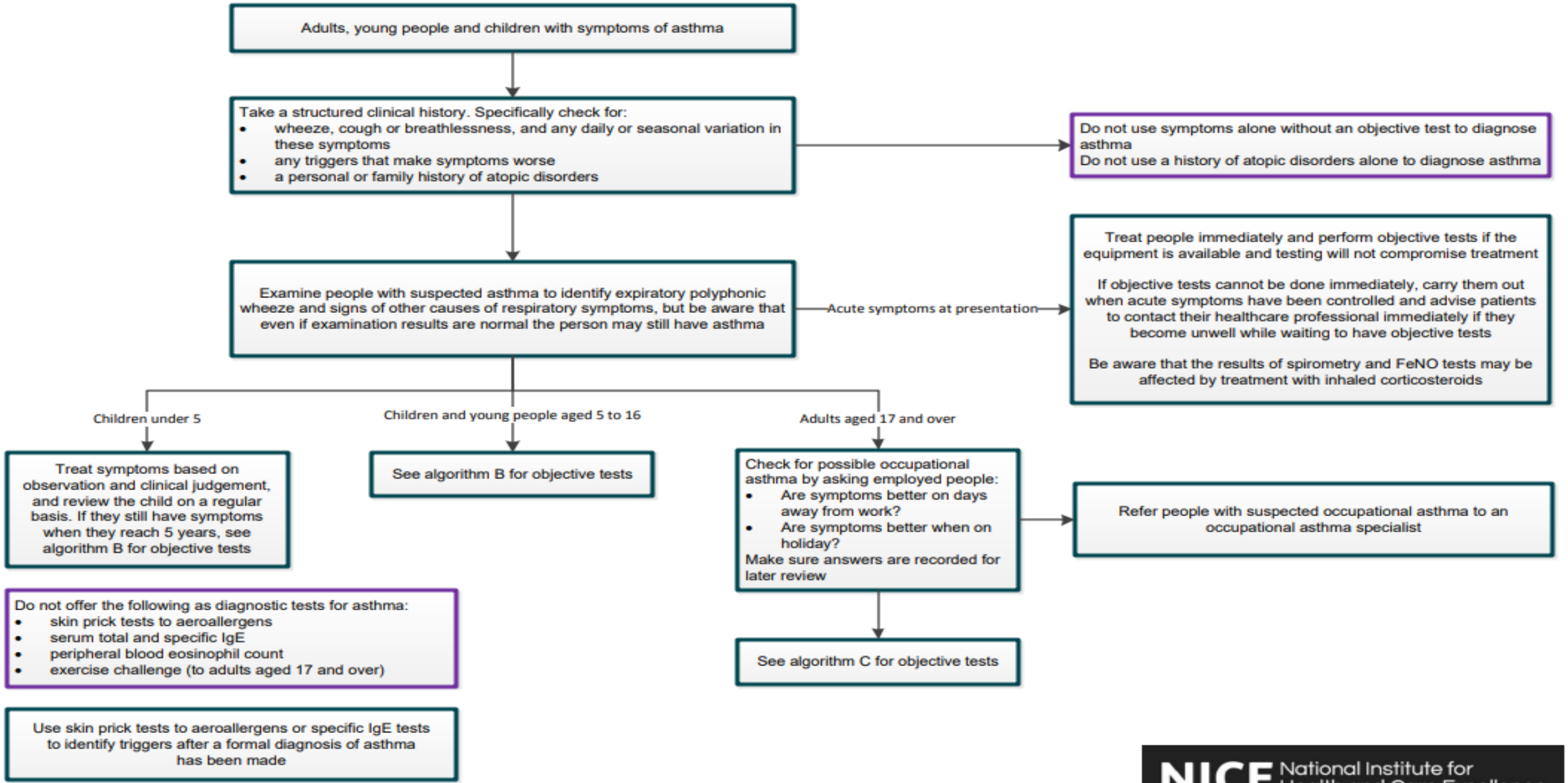
Algorithm A Initial clinical assessment for adults, young people and children with suspected asthma



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

Order of tests

- Perform spirometry in children and young people with symptoms of asthma
- Consider BDR test if spirometry shows an obstruction

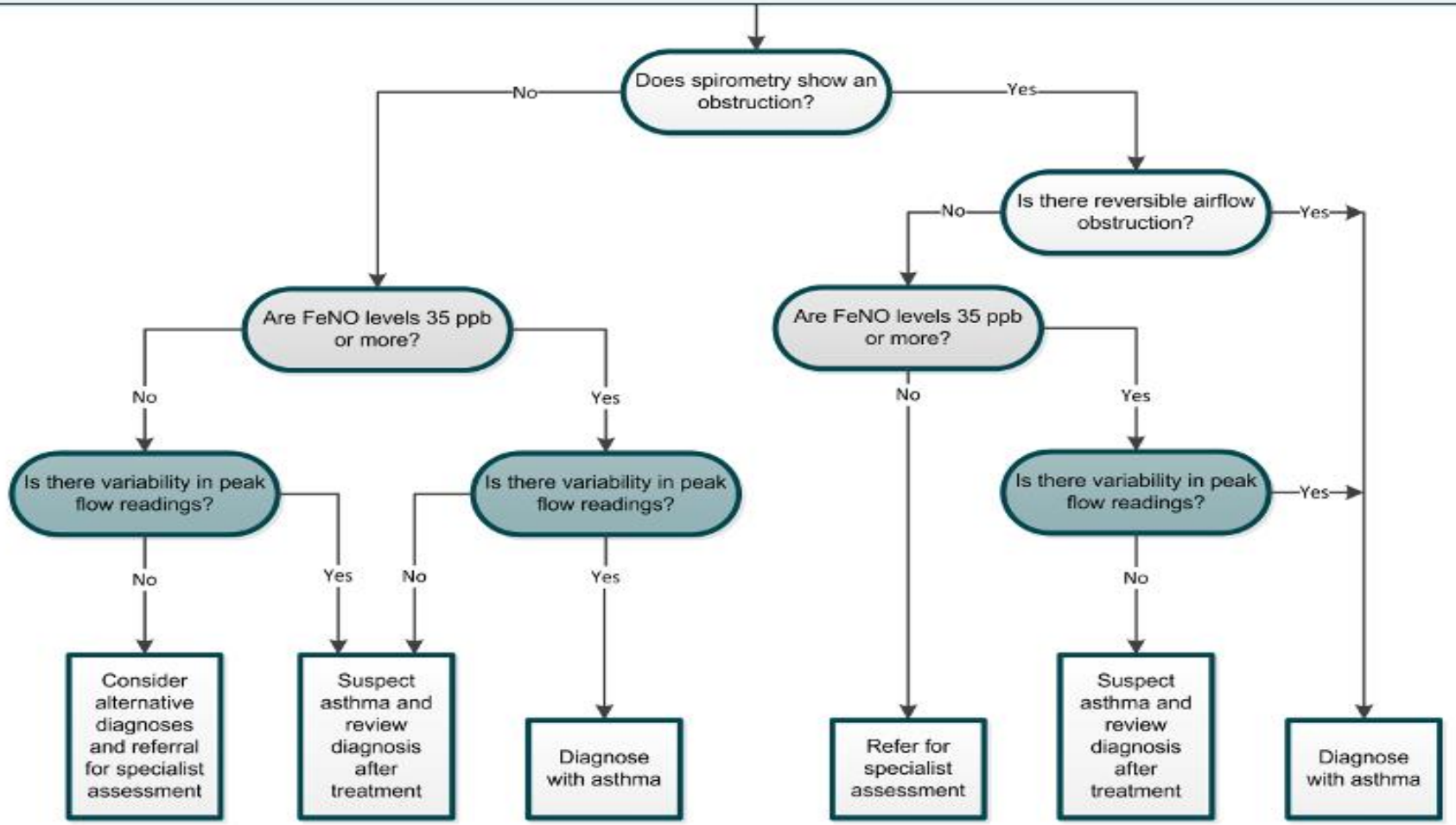
If a child is unable to perform objective tests:
- treat based on observation and clinical judgement **and**
- try doing the tests again every 6 to 12 months

If diagnostic uncertainty remains after spirometry and BDR, consider FeNO

If diagnostic uncertainty remains after FeNO, monitor peak flow variability for 2 to 4 weeks

Abbreviations:
FeNO, fractional exhaled nitric oxide
BDR, bronchodilator reversibility

Interpretation of test results for children and young people aged 5 to 16 with symptoms suggestive of asthma



Positive test thresholds
Obstructive spirometry: FEV1/FVC ratio less than 70% (or below the lower limit of normal if available)
FeNO: 35 ppb or more
BDR: improvement in FEV1 of 12% or more
Peak flow variability: variability over 20%

Feno result 34pbb
Spirometry normal

Progress to trial of treatment with peak flow readings

6-8 weeks later

Good response to ICS

Now able to play netball without stopping

Peak flow showed a variation of more than 20%

ACT score now improved to 23

Continue with ICS

When would a trial of treatment be used?

High probability of asthma

Spirometry and feno may have been done and shown a normal result- spirometry has a false negative rate of 50%, feno may be affected by other factors such as allergic rhinitis.

Not able to perform spirometry or feno

What else do we need to consider?

Give an trial of treatment plan and go through this with them.
Give a SABA inhaler as well and explain what to do if their symptoms deteriorate and what to do during an asthma attack?
Optimise treatment and discuss follow up appointments.

Conclusion

A trial of treatment is a useful way to support asthma diagnosis when it is necessary to start treatment straight away.

It can be used to support an asthma diagnosis when test results are unclear, or the patient is unable to perform FENO and spirometry.

Objective testing before and after treatment is essential to measure the response to treatment.

Always make sure the patient knows what to do if their symptoms deteriorate during their treatment trial.

Questions

Survey

https://forms.office.com/e/Ah2iqU7vt4