

The diagnosis of asthma in adults

NHS Calderdale, NHS Greater Huddersfield, NHS North Kirklees, NHS Wakefield CCGs, Mid Yorkshire Hospitals Trust, Calderdale and Huddersfield Foundation Trust and Locala CIC (Version 290819)

The diagnosis of asthma is clinical. There are no gold-standard diagnostic criteria and no unequivocal evidence-based recommendation on how to make a diagnosis of asthma.

Current guidance is to consider the following when making a diagnosis

- An appropriate history (more than one of: wheeze, breathlessness, chest tightness, cough)
- Tests influence the probability of asthma but do not prove a diagnosis
- Asthma status and the outcome of tests can vary over time

An appropriate history – Factors that increase probability of asthma		
<ul style="list-style-type: none"> • Cough • Wheeze • Shortness of breath • Chest tightness 	<ul style="list-style-type: none"> • Symptom VARIABILITY, especially during the night and in the early morning. • Symptoms following exercise or exposure to trigger factors or irritants e.g., Occupational exposures, Pets, DIY, Dust 	<ul style="list-style-type: none"> • Symptoms after Aspirin, Non-Steroidal, Anti-inflammatory Drugs or Beta-Blockers. • Childhood or family history of atopy including asthma.

Diagnostic and Action Algorithm based on clinical probability of asthma

High probability

- Code as suspected asthma
- Initiate treatment - Inhaled corticosteroid for 6 weeks and review
- Assess response objectively - use lung function or validated symptom score, record variability:
 - **If good response to treatment**, code as asthma, adjust medication dose, provide self-management support (including Asthma Control Plan, rescue medication and education) and arrange ongoing review
 - **If poor response** proceed as for intermediate probability as asthma

Intermediate probability

- Test for airway obstruction using spirometry
- Test for bronchodilator reversibility using either reversibility to bronchodilator or PEF charting
- Watchful waiting if asymptomatic or commence treatment and assess response objectively
 - **If good response to treatment** code as asthma, adjust medication dose, provide self-management support (including Asthma Control Plan, rescue medication and education) and arrange ongoing review
 - **If poor response** proceed as for low probability as asthma

If diagnosis remains unclear refer for specialist opinion:

Additional investigations to be undertaken under specialist care:

- Blood eosinophilia, IgE, RAST, skin prick test
- Fractional exhaled Nitric Oxide (FeNO)

Low probability of asthma

- Investigate for other diagnosis:
 - If other diagnosis unlikely proceed as for intermediate probability of asthma

Spirometry and bronchodilator reversibility

- Spirometry is the preferred investigation for identifying airflow obstruction.
- Normal spirometry in an asymptomatic patient does not exclude asthma.
- Consider other causes for airflow obstruction based on history (e.g. COPD, bronchiectasis).

A combined diagnosis of both asthma and COPD is possible and treatment should aim to fully treat the reversible component. Inhaled Cortico Steroid must be maintained - refer to Asthma COPD Overlap Syndrome Guidance

Demonstrating variability

PEF monitoring is most commonly used:

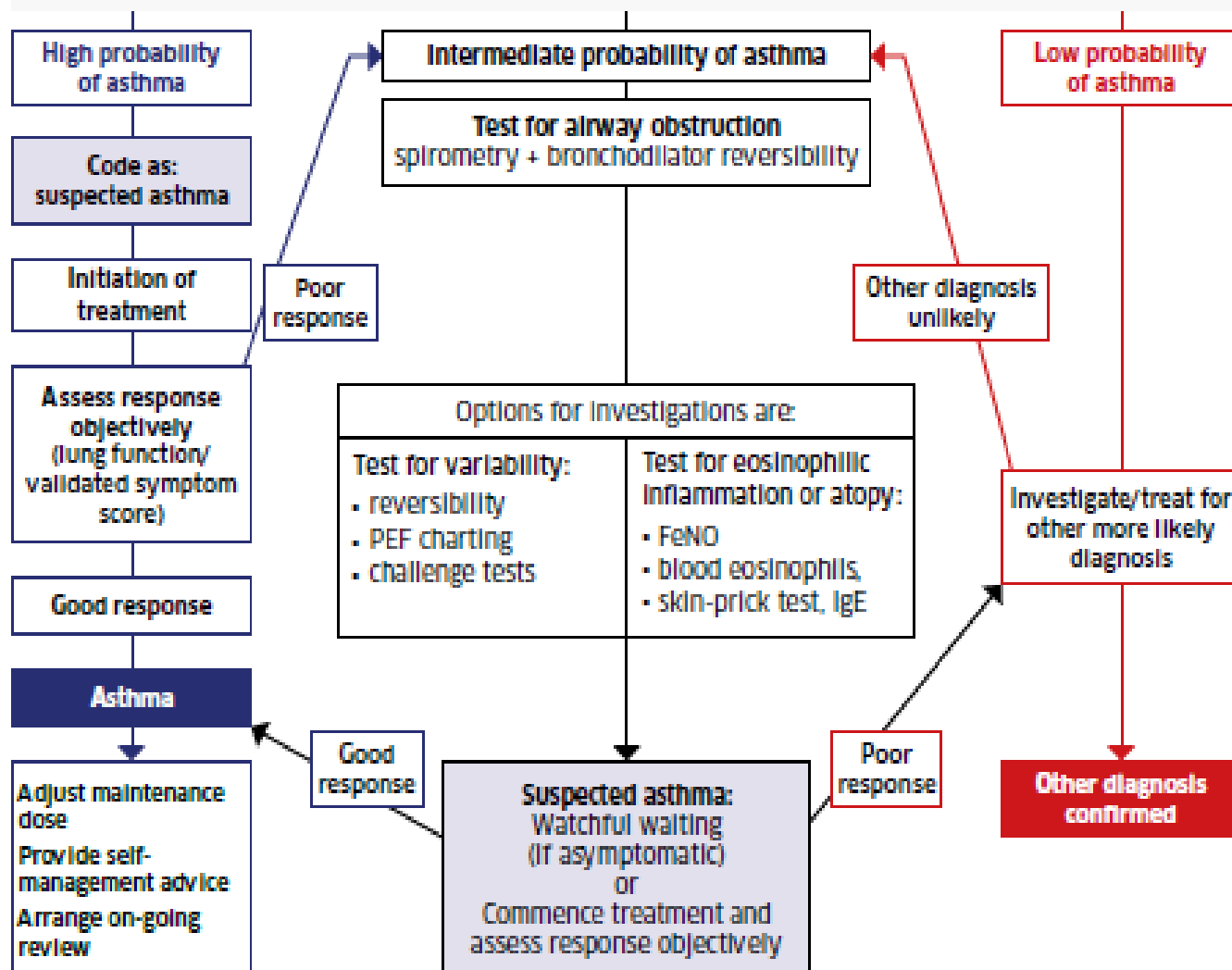
- Best of 3 forced blows recorded twice daily for 2 weeks
- Greater than 20% variability in readings
- Improvement of greater than 20% with salbutamol, inhaled corticosteroid for 6 weeks or oral prednisolone for 14 days
- To calculate variability: subtract the lowest reading from the highest, divide by the highest reading and multiply by 100 .e.g. 450 (highest reading) – 360 (lowest reading) = 90 (variation) $90 \div 450 \times 100 = 20\%$ variability

Presentation with respiratory symptoms: wheeze, cough, breathlessness, chest tightness¹

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 FEV₁



¹In 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 probability of asthma.

Referral Criteria Adults

- Diagnosis unclear
- Poor response to asthma treatment
- Multiple exacerbations/courses of prednisolone or ED attendance with asthma
- Suspected occupational asthma (symptoms that improve when patient is not at work, adult onset asthma and workers in high-risk occupations, worsening since change in work)
 - *Do your symptoms get worse at or after work, or disturb your sleep after work?*
 - *Do your symptoms improve on the days you're not at work (e.g. holiday)?*
 - *Do you experience rhinitis or conjunctivitis at or after being at work*
- Severe/life-threatening asthma attack
- Referral for tests not available in primary care

E-consultation is available and should be considered as first line - sufficient clinical detail is required for a meaningful response

'Red flags' and indicators of other diagnoses

- Prominent systemic features (myalgia, fever, weight loss)
- Unexpected clinical findings (e.g. crackles, clubbing, cyanosis, cardiac disease, monophonic/unilateral wheeze or stridor)
- Persistent non-variable breathlessness
- Chronic sputum production
- Unexplained restrictive spirometry
- Chest X-ray shadowing
- Marked blood eosinophilia
- Patient or parental anxiety or need for reassurance

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References

British Thoracic Society/ Sign Guidance:

<https://www.brit-thoracic.org.uk/quality-improvement/guidelines/asthma/>

NICE Asthma: diagnosis, monitoring and chronic asthma management

<https://www.nice.org.uk/guidance/ng80>

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