

# THE BREATHLESS ATHLETE – THINKING BEYOND ASTHMA

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## INTRODUCTION

At major sporting events, respiratory conditions account for a large proportion of medical consultations<sup>1</sup>. For decades, asthma and exercise-induced bronchoconstriction (EIB) have been considered the primary explanations. While these conditions remain important, they do not account for all respiratory illness in athletes.

In recent years, awareness has increased that exercise-related respiratory symptoms in athletes may also arise from upper airway obstruction. Exercise-induced laryngeal obstruction (EILO), is now recognised as a major and often overlooked differential diagnosis<sup>2</sup>. Structural or inflammatory nasal obstruction may further aggravate symptoms, sleep quality, and increase the sensation of breathing limitation<sup>3</sup>. At the same time, breathing pattern dysfunction (BrPD), although not an obstructive disease, frequently mimics airway obstruction and may coexist with asthma or EILO<sup>1</sup>.

Overlapping and interacting conditions can complicate the diagnostic process. An athlete may have asthma, EIB, EILO, nasal obstruction, BrPD, or a combination of these conditions. Each requires a different therapeutic approach. Acknowledging

this complexity is essential to avoid overtreatment, and potential performance limitation, i.e. by persistent untreated symptoms.

For the clinician, the challenge is to determine where in the respiratory system the limitation arises, under what circumstances it occurs, and whether more than one mechanism is present. This is important because symptom description alone is likely to have limited diagnostic precision and thus if asthma is suspected, but other conditions are not treated, then there can be inappropriate escalation of therapy.

This article aims to give a practical overview of airway disease in athletes, while acknowledging that the sports medicine clinician must also consider important differential diagnoses and concurrent causes of exertional dyspnoea. The aim is to help clinicians with a framework for evaluating and managing the breathless athlete.

## RESPIRATORY PROBLEMS IN ATHLETES

Airway problems in athletes rarely exist in isolation<sup>1</sup>. Instead, they form a continuum that may involve the nose, larynx, trachea,

bronchi, and even the behavioural control of breathing. It may therefore be useful to consider where airflow is being limited, or perceived to be limited, during exercise.

Lower airway dysfunction (LAD), including asthma and EIB, are distinct but may coexist. While asthma is characterised by airway inflammation and bronchial hyperresponsiveness, EIB may also occur in athletes without underlying asthma<sup>4</sup>. Upper airway conditions such as EILO, arise from inappropriate transient obstruction of an otherwise normal larynx during high ventilatory demand<sup>2</sup>. Nasal obstruction may not be the primary problem itself, but add resistance in the early phase of exercise or contribute to chronic symptoms affecting recovery and sleep<sup>3</sup>. However, BrPD reflects inefficient breathing mechanics rather than structural airway disease, but it may coexist with and complicate other respiratory disorders and produce symptoms that are indistinguishable from airway obstruction<sup>1</sup>.

Because these conditions frequently coexist, clinicians should actively look for overlap. A runner with well-controlled asthma may still be limited by EILO. A swimmer with rhinitis may report dyspnoea driven primarily by dysfunctional

**Box 1: THE SPORTS PHYSICIAN SHOULD NOT ASK “DOES THIS ATHLETE HAVE ASTHMA?” BUT CONSIDER THREE QUESTIONS:**

1. *Where does the limitation seem to occur: nose, larynx, lower airways, or breathing mechanics?*
2. *When does it occur: during peak effort, after exercise, or more diffusely across exercise and recovery?*
3. *Does the current working diagnosis explain the athlete’s full symptom pattern and treatment response?*

**Common obstructive airway conditions include:**

- Asthma
- Exercise-induced bronchoconstriction (EIB)
- Exercise-induced laryngeal obstruction (EILO)
- Nasal obstruction

**Important obstructive-mimicking or coexisting conditions include:**

- Breathing pattern dysfunction
- Poor physical conditioning or deconditioning
- Cardiovascular or other non-respiratory causes in selected cases

breathing. Appreciating this spectrum is the first step toward accurate diagnosis (Box 1).

**EXERCISE-INDUCED BRONCHOCONSTRICTION AND ASTHMA**

Consideration of EIB and asthma remains central to the evaluation of respiratory symptoms in athletes and these are often the first diagnoses considered when an athlete reports breathlessness, wheeze, or reduced exercise tolerance<sup>1</sup>. Asthma is a chronic inflammatory airway disease characterised by variable airflow limitation and bronchial hyperresponsiveness, whereas EIB describes transient airway narrowing that occurs in association with exercise<sup>4,5</sup>. The two frequently overlap, but EIB may also occur in athletes without other features of classic asthma, i.e. symptoms outside exercise, variable airflow obstruction at rest caused by inflammation, or a history consistent with chronic asthma<sup>5</sup>.

In athletes, repeated exposure to high ventilation rates places considerable mechanical and osmotic stress on the bronchial epithelium. Athletes participating in endurance sports in cold, or heated dry air or in environments containing irritants such as chlorine or pollution are at increased risk of airway irritation<sup>6</sup>. Over time, these exposures may lead to airway inflammation, epithelial injury, and heightened airway responsiveness, helping explain why asthma is common even in otherwise healthy, high-performing individuals<sup>1</sup>.

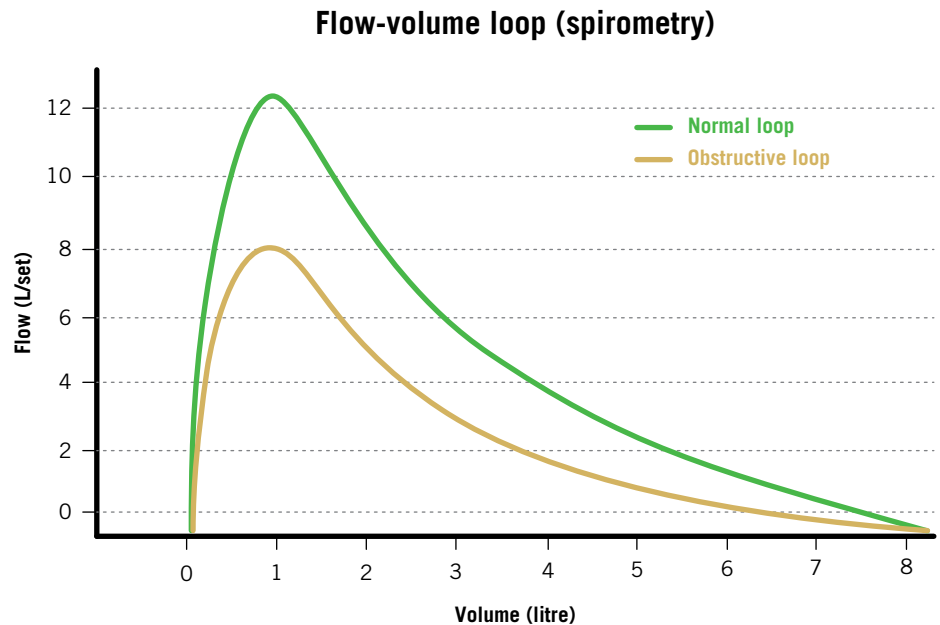
Asthma/EIB typically presents with expiratory symptoms such as chest tightness, cough, wheeze, or excessive

mucus production. A key characteristic is the timing of symptoms, they often peak several minutes after exercise rather than during maximal effort<sup>5</sup>. Athletes may report that they finish an interval or race successfully but develop breathing difficulty shortly afterward. This temporal pattern reflects the physiological cascade of airway cooling, rewarming, and inflammatory mediator release that drives bronchoconstriction<sup>1</sup>.

Objective confirmation is necessary because symptom experience often correlates poorly with airway findings<sup>7</sup>. Spirometry combined with bronchial provocation testing remains the cornerstone of diagnosis. Reliance on symptoms alone risks both overdiagnosis and underdiagnosis, leading either to unnecessary treatment or to missed opportunities for effective therapy.

When accurately identified, EIB and asthma are usually highly manageable. Treatment focuses on optimising anti-inflammatory control, reducing environmental triggers, and using bronchodilator therapy strategically<sup>4</sup>. Many athletes respond well and are able to train and compete without limitation once the condition is correctly managed (Figure 1).

**DISTINGUISHING ASTHMA FROM EIB**  
Although the terms are sometimes used interchangeably in sport, asthma and EIB are not identical entities<sup>5</sup>. Asthma is a chronic inflammatory disease with variable airflow limitation that may be present at rest, fluctuate over time, and be triggered by multiple stimuli including allergens, infections, and exercise<sup>4</sup>. EIB refers specifically to transient bronchoconstriction



**Figure 1:** Spirometry – Flow-volume loop. Spirometry requires maximal inhalation followed by rapid, forceful, and sustained exhalation. Repeated measurements are essential to ensure reproducibility. Common errors include incomplete inhalation, insufficient expiratory effort, and early termination. Forced expiratory volume in 1 second (FEV1) is the most reliable parameter; a 12% increase after bronchodilator administration, or a decrease after exercise, may suggest airflow obstruction.

provoked by airway drying caused by the high ventilatory demands of exercise, and it may occur in individuals both with and without underlying chronic asthma.

Athletes with asthma often report symptoms beyond exercise, such as nocturnal cough, variable wheeze, seasonal fluctuation, or symptoms triggered by allergens or respiratory infections. Lung function may show baseline variability and increased markers of airway inflammation, like exhaled NO (FeNO) or blood eosinophils, can be present<sup>4</sup>. Management therefore focuses on long-term anti-inflammatory control in addition to exercise-related strategies<sup>4</sup>.

Athletes with isolated EIB, however, are typically asymptomatic at rest and between training sessions. Their airway narrowing is driven primarily by the physiological stress of sustained high ventilation, which leads to airway drying, osmotic shifts, and secondary mediator release. Symptoms are often linked to environmental exposure during exercise, particularly cold or dry environments. Treatment may therefore include pre-exercise medication, warm-up strategies, and environmental modification, and avoiding unnecessary escalation of long-term anti-inflammatory therapy where objective evidence of chronic asthma is lacking<sup>5</sup>.

Recognising this is important because it influences both diagnostic testing and management. Demonstrating bronchial hyperresponsiveness in relation to exercise confirms EIB, whereas identifying variable airflow limitation across time, and increased inflammatory markers, supports a diagnosis of asthma. Some athletes, of course, have both conditions, requiring integrated treatment.

However, in athletes, when asthma or EIB is suspected, the diagnostic pathway should not stop at baseline spirometry. Because resting lung function may be normal, indirect provocation tests such as sport-specific exercise challenge or EVH-test are often required, and the choice of test should reflect the athlete's symptom profile and environmental exposure<sup>6</sup>.

For the sports physician, this distinction has practical value. Athletes with probable isolated EIB may not require the same long-term treatment strategy as athletes with established asthma, but both groups require objective confirmation before treatment is escalated (Box 2).

## Box 2: TYPICAL FEATURES OF ASTHMA/EIB

- *Symptoms usually peak after exercise rather than at maximal intensity*
- *Expiratory wheeze, chest tightness, cough*
- *Symptoms respond to appropriate inhaled therapy*
- *Baseline spirometry may be normal*
- *Objective testing (e.g. Provocation testing) is typically required to secure diagnosis*

### EXERCISE-INDUCED LARYNGEAL OBSTRUCTION

EILO refers to inappropriate narrowing of laryngeal structures during exercise, typically occurring at high intensity exercise when airflow demand is greatest<sup>7</sup>. The larynx is normal at rest, and symptoms appear only under stress. This explains why routine examinations often fail to identify the condition.

Athletes with EILO commonly describe difficulty getting air in rather than out, accompanied by throat tightness or inspiratory noise. Symptoms often resolve quickly when exercise stops. These features can be highly characteristic for EILO if specified during history-taking<sup>2</sup>. However, respiratory symptoms can be challenging to describe accurately, and many individuals lack the language to clearly explain their experience of breathing difficulty. As a result, many athletes experience long diagnostic journeys with repeated trials of asthma medication before the correct diagnosis is made<sup>1</sup>.

Recognition of EILO is critical because management differs fundamentally from that of asthma. Treatment focuses on breathing control, laryngeal coordination, with targeted interventions such as speech therapy or inspiratory muscle training<sup>2</sup>.

The clinical suspicion of EILO may be strong from the history, but confirmation usually requires visualisation during symptom reproduction. Resting laryngoscopy may be entirely normal

and cannot exclude dynamic exercise-induced obstruction. The gold standard for diagnosing EILO is continuous laryngoscopy during exercise (CLE) test, which allows direct visualisation of the larynx throughout symptom provocation during exercise to maximal effort<sup>8</sup>. CLE can identify whether obstruction is predominantly supraglottic, glottic, or combined, and this distinction may be relevant for both treatment planning and specialist referral<sup>3</sup>.

For the non-respiratory sports medicine clinician, the point is not to perform CLE personally, but to recognise when it is needed. CLE-test may be needed in athletes with inspiratory symptoms at peak effort, poor response to asthma treatment, or persistent unexplained dyspnoea despite negative lower airway testing. However, breathing training may be an appropriate first step, with a CLE test considered if symptoms persist or the response is insufficient (Box 3).

### HOW COMMON IS EILO IN ATHLETES?

Population studies suggest a prevalence of EILO of approximately 5–8% in adolescents, but higher rates have been reported in selected athletic populations<sup>2</sup>. Among athletes referred for unexplained exertional dyspnoea, the prevalence is even higher<sup>2</sup>. In several studies, the majority of athletes diagnosed with EILO had previously used asthma medication, often for years, with minimal or no effect on exercise-related symptoms<sup>2</sup>. However, coexistence with

## Box 3: KEY CLINICAL CHARACTERISTICS OF EILO

- *Symptoms occur during high-intensity exercise, often at peak effort*
- *Predominantly inspiratory breathing difficulty*
- *Stridor or high-pitched inspiratory noise may be present*
- *Rapid symptom resolution within minutes of stopping exercise*
- *Little or no response to asthma medication*

asthma is common, further complicating clinical assessment and increasing the risk of unnecessary escalation of medical treatment.

#### DISTINGUISHING LOWER AIRWAY DYSFUNCTION (LAD) FROM EILO

Differentiating LAD from upper airway obstruction is important. EIB and asthma are characterised by expiratory airflow limitation that typically worsens after exercise, while EILO causes inspiratory difficulty at peak effort and resolves rapidly when exercise stops<sup>2</sup>. A careful history, focusing on when symptoms are most pronounced, is therefore essential to help identify the underlying cause and where the limitation is likely to occur within the airway<sup>2</sup>. This may guide a more targeted diagnostic evaluation, help avoid delays in the diagnostic process, and avoid unnecessary escalation of asthma therapy. Observing the athlete during symptomatic episodes, or reviewing video recordings of breathing difficulties during exercise, can also be valuable and assist in differentiating between potential causes<sup>2</sup>.

#### WHY MISDIAGNOSIS HAPPENS

Several factors contribute to the misdiagnosis of obstructive airway disease in athletes. Clinical evaluation often relies heavily on symptom reporting rather than objective testing, despite the well-recognised limitations of symptoms in distinguishing between different respiratory conditions<sup>9</sup>. In addition, awareness of upper airway disorders such as EILO may be limited, and a poor response to asthma treatment is sometimes interpreted as reflecting greater disease severity rather than reconsideration of the diagnosis. Limited access to appropriate diagnostic tools may further complicate the evaluation. As a result, athletes with persistent respiratory symptoms may receive escalating asthma therapy instead of undergoing a more thorough reassessment.

A further problem in sports medicine is that clinicians may be reassured by normal findings at rest. However, many relevant disorders in this setting are exercise-induced and intermittent. Resting examination alone may therefore be insufficient to explain symptoms that occur only during high ventilatory demand.

### Box 4: KEY CLINICAL CHARACTERISTICS OF BRPD

- *Symptoms during or after exercise*
- *Marked sensation of air hunger*
- *Inspiratory and/or expiratory symptoms*
- *Irregular breathing pattern*
- *Asynchronous abdominal and thoracic breathing*
- *Accessory muscle use*
- *Apical breathing*
- *Poor or insufficient response to asthma treatment*

#### BREATHING PATTERN DYSFUNCTION, AN IMPORTANT NON-OBSTRUCTIVE CAUSE

BrPD is increasingly recognised in athletic populations, especially among individuals with persistent breathing symptoms despite normal lung function testing. It reflects altered breathing mechanics, including excessive upper chest activity, rapid shallow or irregular breathing, or poor synchronisation between upper and lower thorax<sup>10</sup>.

Although BrPD does not represent structural airway obstruction, the subjective sensation of dyspnoea can be profound. Athletes may report an inability to take a satisfying breath or describe early breathing distress disproportionate to workload. Because objective tests are often normal, the condition may be misinterpreted as unexplained asthma or anxiety.

Identifying BrPD is important because treatment is behavioural rather than pharmacological. Breathing retraining and reassurance may improve symptoms and restore confidence in exercise.

BrPD should not be regarded solely as a diagnosis of exclusion. In practice, it is often identified through careful observation of breathing mechanics, thoracoabdominal motion, accessory muscle recruitment, symptoms and breathing rhythm during exertion. BrPD may coexist with asthma or EILO, meaning that a normal airway test,

or the identification of one abnormality elsewhere in the airway does not always provide the full explanation for the athlete's symptoms (Box 4).

#### NASAL OBSTRUCTION

The nasal airway is often overlooked in sports medicine discussions, yet it plays an important role in breathing. Structural abnormalities such as septal deviation or dynamic nasal valve collapse, as well as inflammatory conditions like allergic or non-allergic rhinitis, are common among athletes<sup>3</sup>.

While nasal resistance rarely limits maximal ventilation during intense exercise, when there is a natural switch to oral breathing, it may contribute to dyspnoea sensation, sleep disruption, or impaired recovery. In sports with repeated harmful environmental exposure, such as swimming or cold-weather endurance events, nasal pathology may be relevant<sup>3</sup>.

Although the nose is seldom the sole explanation for severe exertional dyspnoea, untreated nasal disease may promote mouth breathing and complicate the management of coexisting lower or upper airway disease.

Addressing nasal obstruction through medical or surgical management can therefore complement treatment of lower or upper airway conditions and improve overall respiratory comfort (Box 5).

### Box 5: FOR CLINICAL PRACTICE, IT MAY BE USEFUL TO DISTINGUISH BETWEEN TWO BROAD NASAL PHENOTYPES

- *Inflammatory disease, such as allergic or non-allergic rhinitis, where topical anti-inflammatory treatment and trigger management may be appropriate*
- *Structural obstruction, such as septal deviation or valve dysfunction, where ENT assessment may be more relevant*

**A PRACTICAL DIAGNOSTIC APPROACH**

Given the overlap among these conditions, diagnosis must be structured and objective. Clinical history remains valuable but should be used to guide testing rather than establish conclusions. Understanding when symptoms occur, how they resolve, and what type of breathing difficulty is described helps direct further investigation.

Baseline spirometry provides an essential starting point, followed where appropriate, by bronchial provocation or exercise testing to confirm or exclude EIB. When inspiratory symptoms dominate or treatment response is poor, visualisation of the larynx during exercise using continuous laryngoscopy becomes essential. Clinicians should also remain aware to symptoms or findings suggesting BrPD or nasal disease.

Assessment is rarely truly linear. The history should suggest which mechanism is most likely, and objective testing is then used to confirm, refute, or broaden the working hypothesis. Clinicians should also remain open to the possibility that more than one diagnosis may coexist (Figure 2).

**MANAGEMENT**

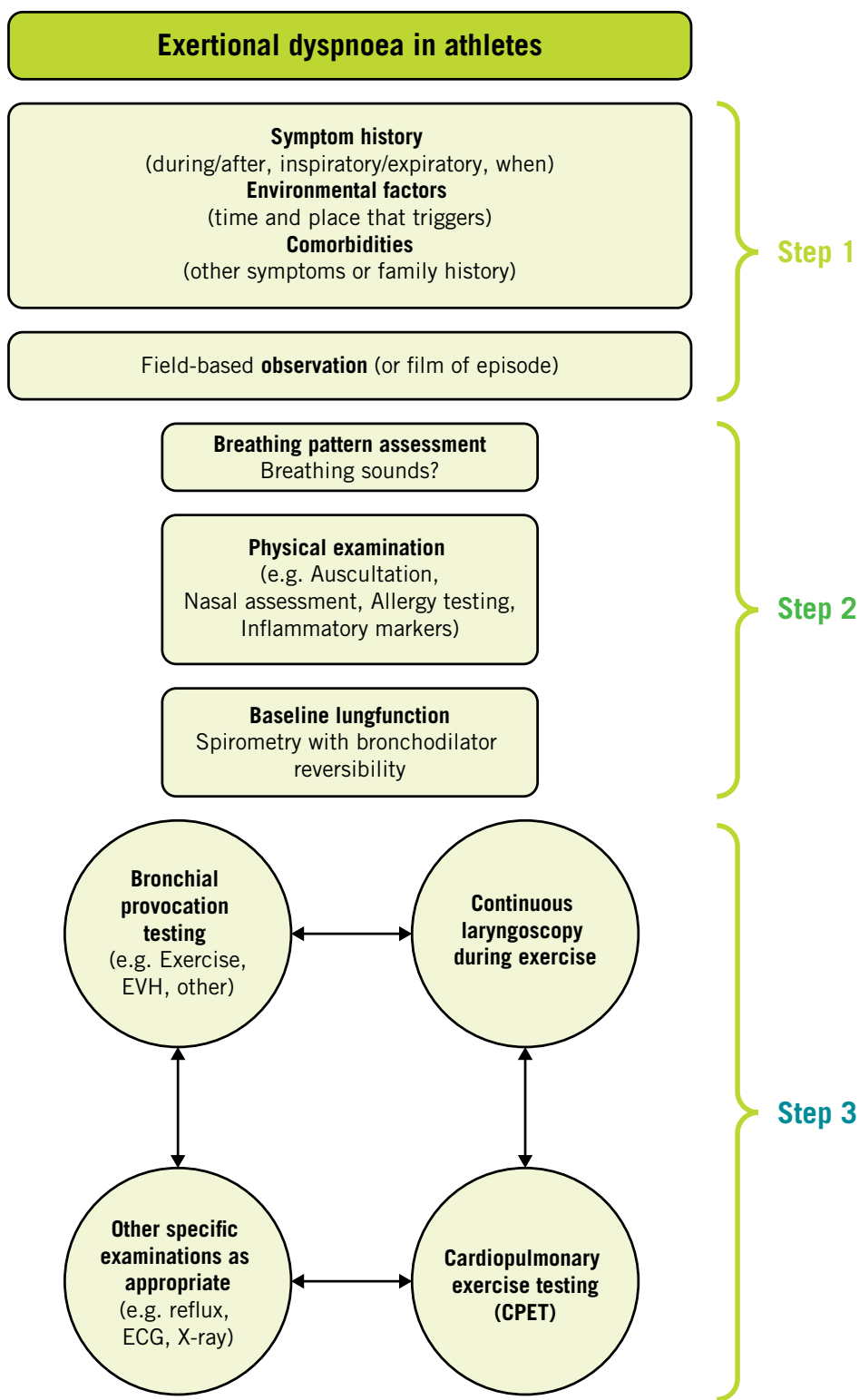
Management should be directed at the confirmed diagnosis. Asthma and EIB require optimisation of medical therapy and environmental strategies<sup>4</sup>. EILO responds best to breathing control interventions<sup>2</sup>. Nasal disease may require topical therapy or specialist referral, while BrPD improves with targeted breathing retraining and education<sup>1</sup>.

When multiple conditions coexist, coordinated management is necessary. Treating only one component may leave the athlete symptomatic despite technically correct therapy (Box 6).

When possible, treatment response should not be judged by symptoms alone. Reassessment may include symptom pattern, exercise tolerance, training response, and repeat objective testing when clinically indicated.

Many athletes improve once EILO is correctly identified and managed, although the degree of improvement will depend on severity, adherence, coexisting conditions, and access to appropriate support (Box 7).

A poor response to appropriate asthma therapy should always prompt reassessment rather than escalation. Additionally, in athletes, one diagnosis may be correct but incomplete. For example, confirming



**Figure 2:** Stepwise diagnostic approach to exertional dyspnoea in athletes. In clinical practice, no single test is sufficient for all athletes with exertional dyspnoea. A more useful approach is to begin with symptom timing and symptom character, then select the most appropriate first-line objective test while remaining alert to overlap between diagnoses.

*Steps 1-3 are continued on the next page.*

1

**Step 1A: Careful history**

The clinical history should focus on the timing and nature of symptoms:

- Do symptoms peak during exercise or after stopping?
- Is breathing difficulty predominantly inspiratory or expiratory?
- Is there noisy breathing or stridor at high intensity?

History should explore timing of symptoms (during vs after exercise), inspiratory vs expiratory limitation, environmental triggers, seasonal patterns, and previous treatment response.

Local environmental factors such as cold climate, altitude, pollution exposure, or chlorinated pool training should be considered.

The history should also consider comorbidities including allergic disease, gastro-oesophageal reflux, anxiety traits, and relevant family history of asthma or other respiratory disease.

As a rule, symptoms at peak exercise with inspiratory difficulty should increase suspicion of EILO, whereas symptoms that worsen after exercise should increase suspicion of EIB. Symptoms at rest or at night increase suspicion of asthma. Symptoms that are vague, inconsistent, or poorly matched to objective airway findings should prompt consideration of BrPD or mixed mechanisms.

**Step 1B: Field-based observation, i.e. during training or competition**

Whenever possible, direct observation of the athlete under real training conditions provides valuable information. Inspiratory noise, early termination of effort, visible upper chest dominance, or distress at peak intensity may guide suspicion toward asthma/EIB, EILO or BrPD.

A film of an episode of the breathing problem may also be helpful, if observation is not feasible.

This is especially useful in sports medicine because many of these symptoms are intermittent and difficult to reproduce in the clinic.

2

**Step 2A: Breathing pattern dysfunction assessment**

Observation of thoracoabdominal coordination, respiratory rate patterns, and apical breathing during exercise observation may identify BrPD.

**Step 2B: Physical examination, including nasal assessment and allergy testing**

Assessment should extend beyond chest auscultation and include identifying contributing conditions.

Nasal patency, septal deviation, turbinate hypertrophy, or signs of rhinitis should be evaluated. Chronic mouth breathing, snoring, or sleep disturbance may suggest clinically significant nasal obstruction.

Testing could also include allergy testing and inflammation markers.

**Step 2C: Baseline lung function with bronchodilator reversibility**

Spirometry with bronchodilator reversibility should usually be part of first-line assessment in all athletes presenting with exertional respiratory symptoms.

Athletes may often have normal spirometry or even supernormal.

Demonstration of variable airflow limitation of 12% or more supports asthma, while normal spirometry does not exclude EIB or EILO.

3

**Step 3A: Objective lower airway provocation testing**

Objective testing for asthma/EIB is essential and may include:

- Standardised exercise testing in lab or in the field
- Eucapnic voluntary hyperpnoea (EVH)
- Other bronchial provocation tests, where appropriate

Objective confirmation is necessary before long-term pharmacological treatment is escalated. For many sports physicians, this step may represent the threshold between initial assessment and referral to a more specialised respiratory service.

**Step 3B: Assessment of the larynx**

In athletes with inspiratory symptoms, poor response to asthma therapy, or unexplained limitation, Continuous laryngoscopy during exercise (CLE) enables direct visualisation of laryngeal behaviour at peak intensity and is the gold standard for diagnosing EILO. CLE allows direct visualisation of laryngeal behaviour during symptom reproduction, identification of the level of obstruction, and grading of severity.

Some athletes with EILO may respond well to breathing guidance alone, whereas others need a CLE-test to confirm the diagnosis and guide appropriate treatment, including biofeedback training.

**Step 3C: Cardiopulmonary exercise testing (CPET)**

In complex cases, CPET provides integrated assessment of ventilatory limitation, cardiovascular capacity, and metabolic response. CPET may also be helpful when the clinician suspects that the athlete's limitation is multifactorial, not purely respiratory, or poorly explained by prior airway findings.

**Step 3D: Other specific examinations as appropriate**

In complex cases, further investigations or specialist referral may be required, including evaluation for gastro-oesophageal reflux, imaging, or other targeted assessments.

**BOX 6: IMPORTANT QUESTIONS FOR MANAGEMENT:**

1. *What is the confirmed mechanism?*
2. *Are there contributing or coexisting conditions that also need treatment?*
3. *How should treatment response be monitored objectively and in relation to sport participation?*

**Managing Asthma/EIB**

- *Optimise inhaled therapy according to guidelines*
- *Address environmental triggers*
- *Ensure non-pharmacological interventions are considered and discussed with athlete*
- *Monitor response objectively*
- *Include a strategy for medication reduction alongside a defined rescue plan*
- *Aim to use the minimum effective treatment while ensuring adequate control*
- *Remember to use medication in accordance with WADA guidelines*

**Managing EILO (and/or BrPD)**

*Management is primarily non-pharmacological:*

- *Education and reassurance*
- *Breathing technique training and biofeedback*
- *Inspiratory muscle training or speech therapy*
- *Surgery reserved for selected severe cases of supraglottic EILO*

**BOX 7: COMMON PITFALLS**

*Factors that may contribute to misdiagnosis of obstructive airway disease in athletes:*

- *Over-reliance on symptoms rather than objective testing*
- *Assumption that poor response to asthma treatment reflects disease severity*
- *Overlooking upper airway obstruction*
- *Relying solely on resting examinations to assess exercise-related symptoms*
- *Failing to consider coexisting upper and lower airway disease*

mild EIB does not exclude coexisting EILO or dysfunctional breathing if symptoms remain disproportionate.

#### PERFORMANCE AND RETURN-TO-SPORT

Respiratory symptoms affect more than physiology. They influence confidence, pacing strategy, and willingness to train. Athletes with unresolved breathing problems often reduce intensity or avoid competition. Accurate diagnosis therefore has psychological as well as physiological benefits, enabling athletes to return to training with clarity and reassurance.

Return-to-sport decisions should focus on symptom control, athlete confidence, and functional testing where relevant.

In many cases, athletes can continue modified training while the diagnostic process is ongoing, provided serious pathology is not suspected and symptoms are monitored. Temporary reduction in intensity may be appropriate when symptoms are severe, poorly understood, or associated with distress, loss of control, or major performance impairment.

When a diagnosis is established, return-to-sport planning is related to the diagnosis. In asthma/EIB, the priority is adequate control and treatment response. In EILO and BrPD, graded return may depend more on symptom understanding, breathing control during exertion, and restoration of confidence.

#### TAKE-HOME MESSAGES

The breathless athlete should not automatically be labelled asthmatic. Instead, clinicians should evaluate the entire airway system and the mechanics of breathing during exercise. Recognising the interplay between asthma/EIB, EILO, nasal obstruction, and breathing pattern dysfunction allows for precise, individualised care that improves both health and performance (Box 8).

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### BOX 8: HOW TO APPROACH THE BREATHLESS ATHLETE IN DAILY PRACTICE:

1. Do not rely on symptom history alone
2. Always consider both upper and lower airway obstruction
3. Observe the athlete during exercise to assess the nature and timing of breathing difficulties
4. Use objective testing early in the diagnostic process
5. Suspect EILO and/or BrPD in athletes with poor response to asthma therapy
6. Treat the right airway problem, not just the most familiar diagnosis
7. Remember: Examine – Treat – Repeat

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