# GINA 2026: The Precision Pathway

## Global Strategy for Asthma Management and Prevention — Executive Clinical Reference

Distilled decision frameworks, diagnostic algorithms, and 2026 paradigm shifts for primary and specialized care.

# 2026 Paradigm Shifts: Critical Updates

## O2 Saturation Thresholds

Revised downward. Supplemental oxygen is **NOT recommended** unless saturation falls below 92%. **If administered, the upper target limit is 95%** (or ≥92% for children ≤5).

## SABA Over-Treatment Warnings

Increasing evidence of SABA toxicity during exacerbations. Recommending highly conservative dosing to avoid lactic acidosis masquerading as worsening asthma.

## Airway Assessment Tools

Introduction of CAAT (Chronic Airways Assessment Test) for adults, integrating sputum and energy levels; and **Peds-AIRQ** for children 5-11, linking symptoms with a 12-month exacerbation history.

## Pediatric Track 1 Expansion

Based on the CARE study, low-dose budesonide-formoterol used as-needed in children 6-11 reduces moderate-severe exacerbation risk by nearly half compared to SABA alone, with no impact on growth velocity.

# The 2026 Delta Matrix: Updating Clinical Habits

| | Legacy Practice | 2026 Update |
|---|---|---|
| **O2 Administration in Acute Care** | Liberal use, targeting near 100% | Supplement ONLY if <92%. Target strictly capped at 95%. |
| **Severe Asthma Biologicals** | Limited standard anti-IgE and anti-IL5 options | Addition of depemokimab (26-week injection) and biosimilar omalizumab-igec. Distinct pathways based on comorbidities (e.g., nasal polyps) |
| **Bronchodilator Responsiveness Criteria** | Debate between ≥12%/200mL vs. >10% predicted | Firm retention of ≥12% and ≥200mL. (The >10% predicted criterion underdiagnosed asthma, particularly in young males) |
| **Inhaler Technique Protocol** | General “shake well” advice | Mandatory: Shake suspension pMDIs **IMMEDIATELY** before each single actuation to prevent massive dose variations |

# The Danger of the "Silent" Exacerbation: SABA Toxicity


## CLINICAL TAKEAWAY:

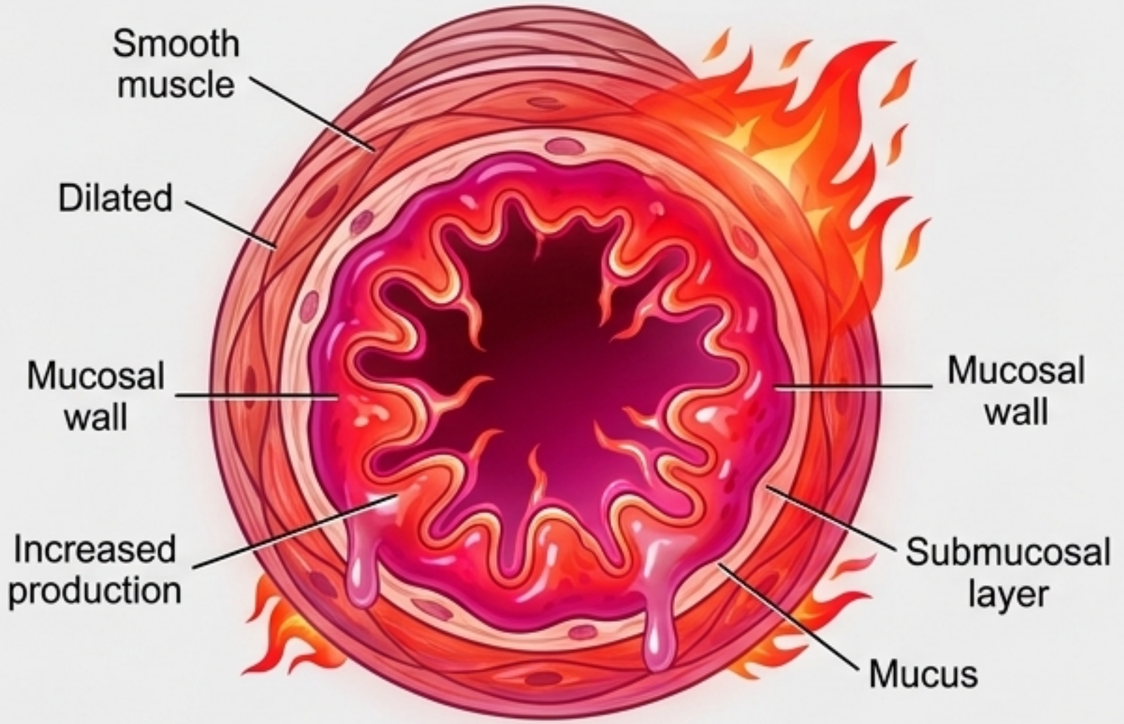
Review patient response after INITIAL bronchodilator administration.

If symptoms improve, pause SABA.

If worsening, transfer to higher-level care immediately.

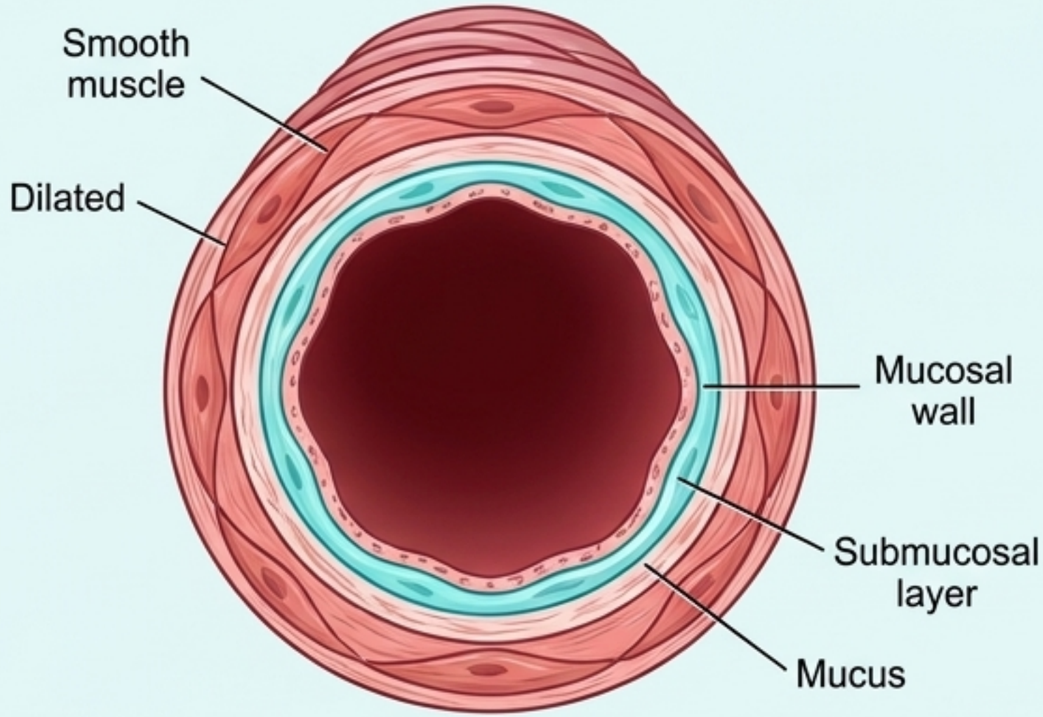
# Track 1 vs. Track 2: The Physiological Imperative

## Track 2 (SABA-Only Reliever)




SABA temporarily relaxes smooth muscle, opening the airway, but leaves the underlying inflammatory “fire” burning. Risk of severe exacerbations remains high.

## Track 1 (ICS-Formoterol AIR) [PREFERRED]




Anti-Inflammatory Reliever (AIR) therapy simultaneously opens the airway AND delivers targeted inhaled corticosteroids to extinguish the underlying inflammation.

Track 1 (MART/AIR) requires only a single combination medication, reducing technique errors, avoiding selective non-adherence, and massively reducing severe exacerbation risk.

# Phase 1: Presentation & Phenotypes

Asthma is a heterogeneous disease defined by variable respiratory symptoms (wheeze, shortness of breath, chest tightness, cough) and variable expiratory airflow.

Card 1

## Allergic Asthma

Often commences in childhood; associated with eczema/rhinitis.
Eosinophilic sputum.
Responds well to ICS.

UI Profile

## Non-Allergic Asthma

Sputum may be neutrophilic, eosinophilic, or paucigranulocytic.
Often shows lesser short-term response to ICS.

UI Profile

## Adult-Onset (Late-Onset)

Predominantly female.
Often non-allergic.
Requires higher ICS doses; rule out occupational exposure.

UI Profile

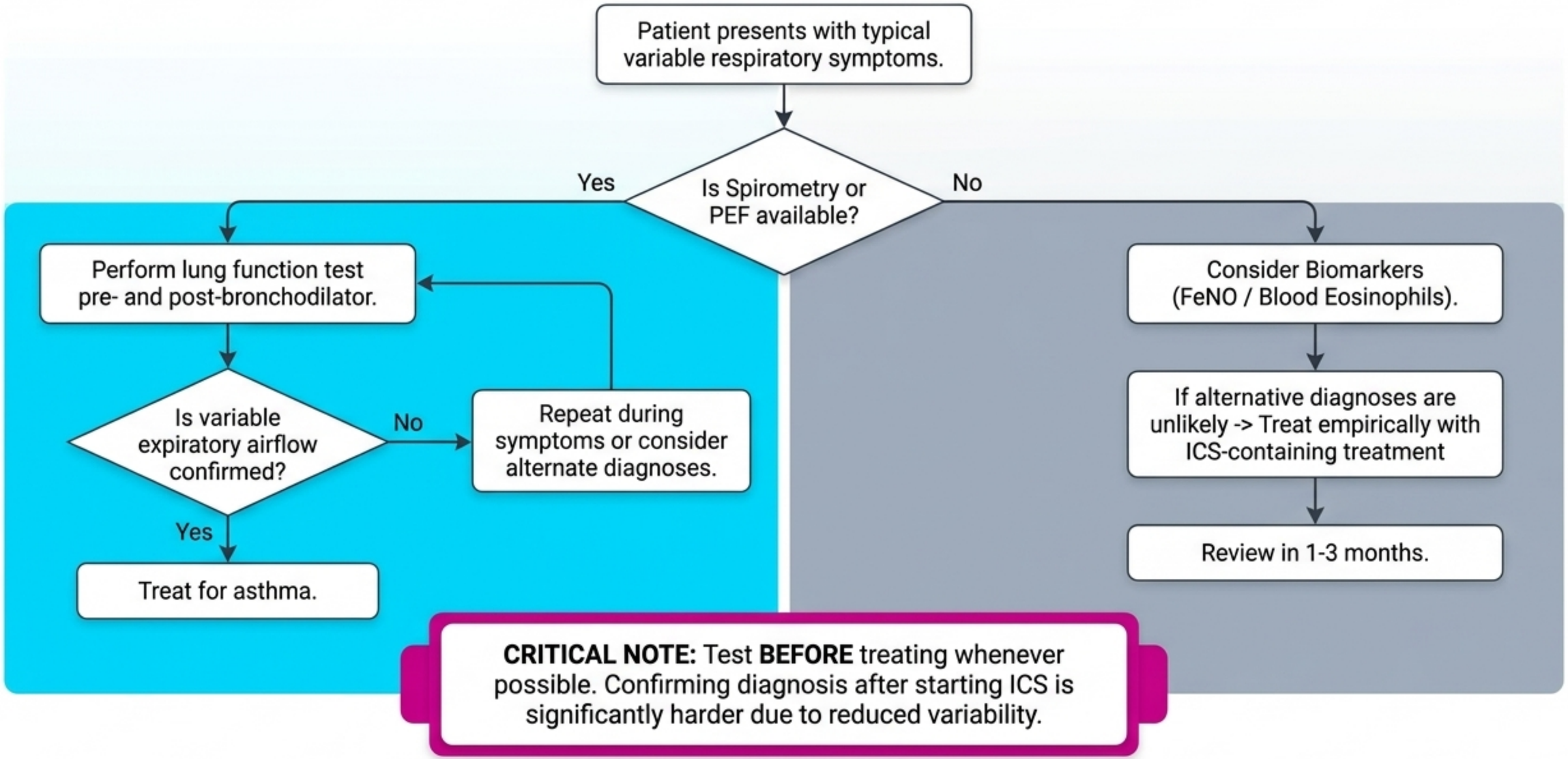
## Cough Variant

Persistent cough is the ONLY symptom.
Spirometry usually normal; requires bronchial provocation testing.

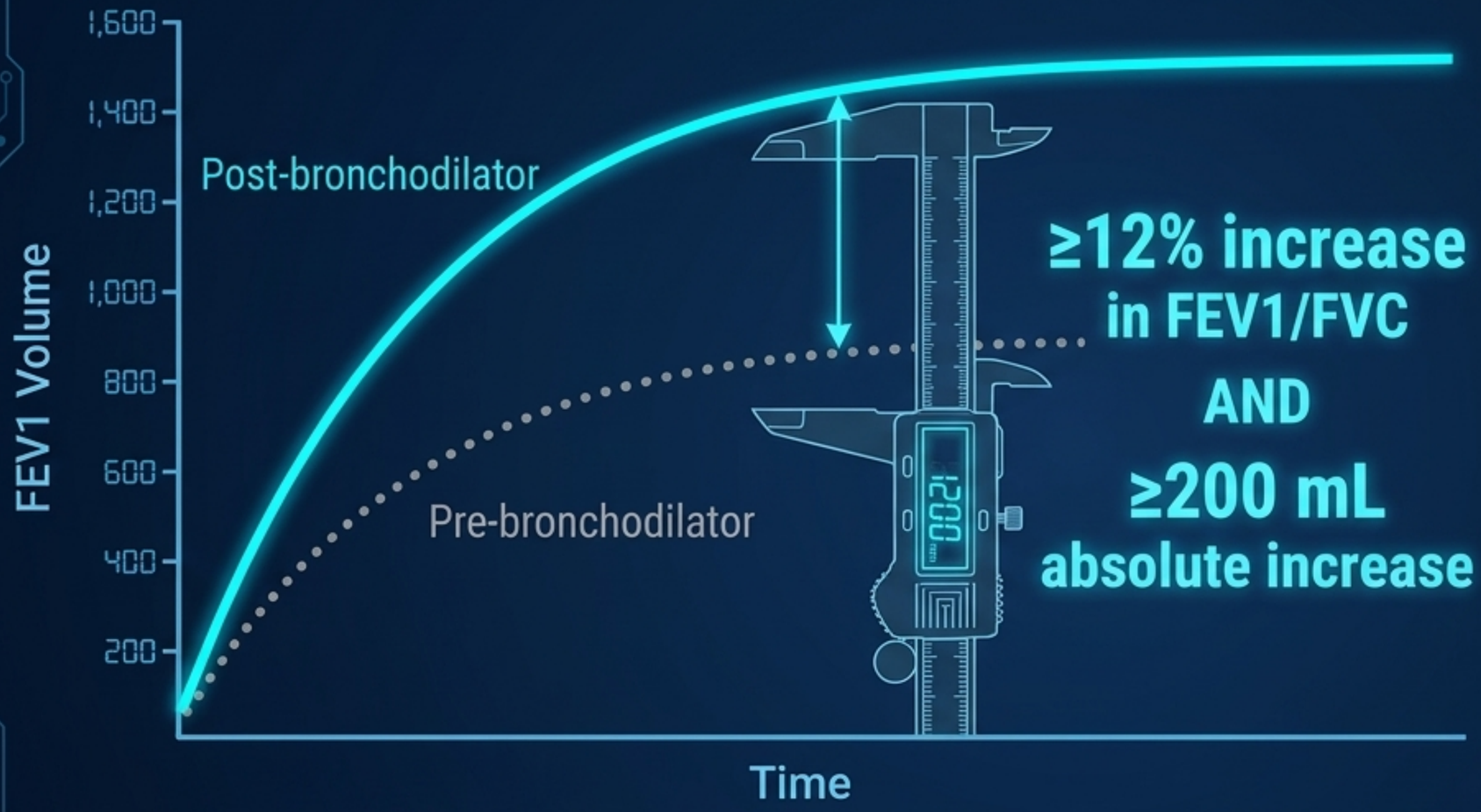
## Asthma with Obesity

Prominent respiratory symptoms with little eosinophilic inflammation.
Distinct inflammatory pattern.

# Phase 2: The Diagnostic Decision Tree



# Defining Variable Expiratory Airflow




## Alternative Testing

- **PEF Variability:** Average daily diurnal variability >10% (Adults) or >13% (Children) over 2 weeks.
- **Therapeutic Trial:** Increase in FEV1 by ≥12% and ≥200 mL after 4 weeks of daily ICS.
- **Provocation:** Fall in FEV1 ≥20% with methacholine, or ≥15% with hyperventilation/saline.

**RED FLAG:** If $FEV_1$ decreases during a challenge test, always check the $FEV_1$/FVC ratio. A false reduction can occur due to incomplete inhalation (e.g., inducible laryngeal obstruction).

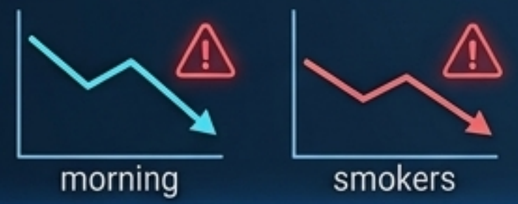
# Differentiating Asthma: Age-Stratified Mimics

| | |
|---|---|
| **Ages 6-11** | - **Sudden onset / unilateral wheeze ->** Inhaled foreign body.<br>- **Recurrent infections / productive cough ->** Bronchiectasis, Primary ciliary dyskinesia. |
| **Ages 12-39** | - **Dizziness / paresthesia / sighing ->** Hyperventilation, dysfunctional breathing.<br>- **Cough triggered by strong smells / stridor ->** Inducible laryngeal obstruction, GERD. |
| **Ages 40+** | - **Dyspnea on exertion / non-productive cough / clubbing ->** Parenchymal lung disease.<br>- **Cough / sputum / smoking history ->** COPD (Assess for Asthma+COPD overlap).<br>- **Treatment with ACE inhibitors ->** Medication-related cough. |

# The Role (and Limits) of Type 2 Biomarkers

## FeNO (Fractional Exhaled Nitric Oxide)

- **Diagnostic Threshold:** >50 ppb (Adults), >35 ppb (Children).
- **Caveats:** Lower in the early morning, lower in smokers. Elevated by allergic rhinitis/eczema.




## Blood Eosinophils

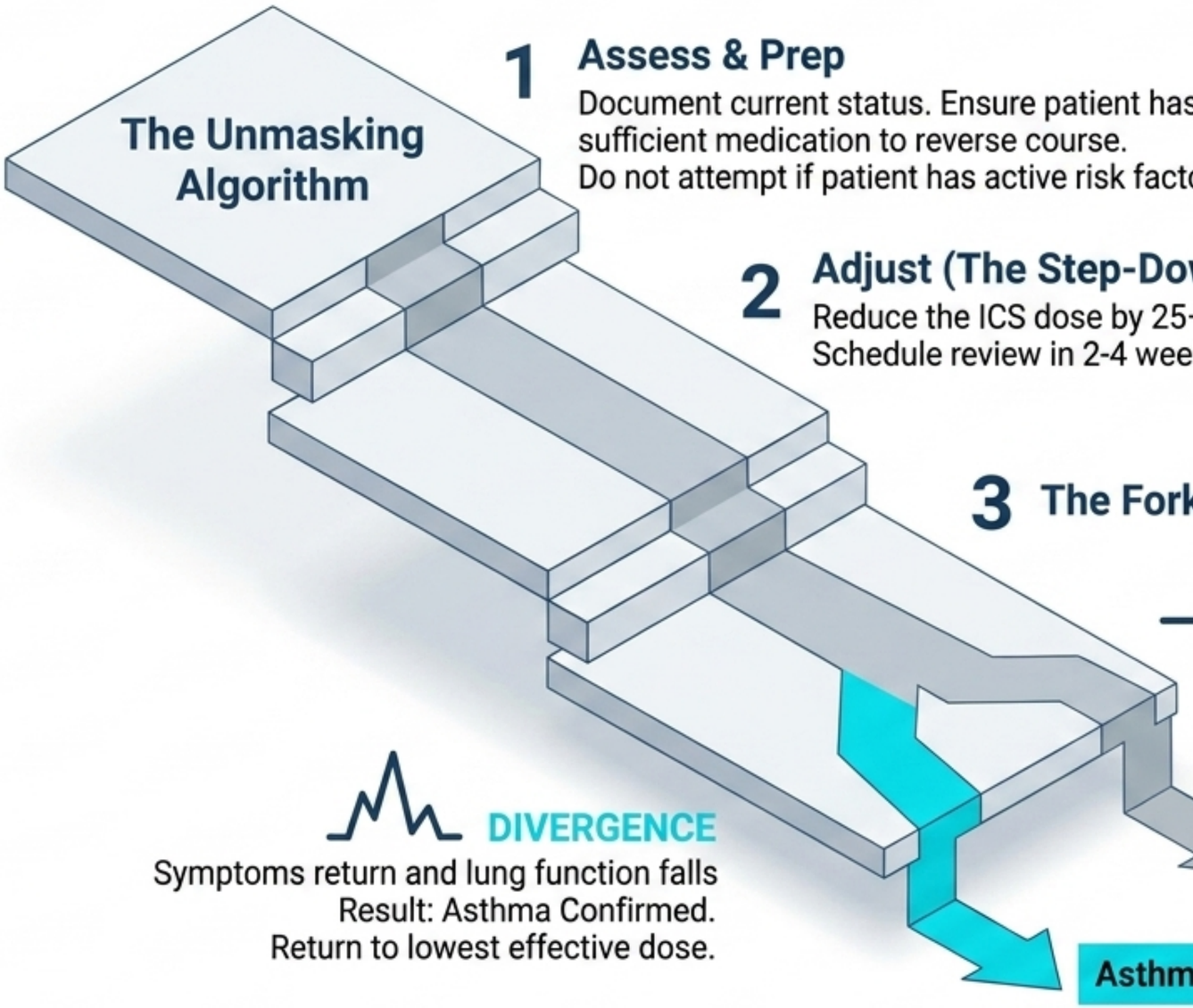
- **Diagnostic Threshold:** Above national/regional reference range.
- **Caveats:** Higher in the early morning. Elevated by parasitic infections, atopic dermatitis, and EGPA. Suppressed by systemic/inhaled corticosteroids.

## Sputum Eosinophils

- **Diagnostic Threshold:** Elevated in induced sputum.
- **Caveats:** Elevated in non-asthma eosinophilic bronchitis and ABPA.

**Biomarkers SUPPORT a Type 2 diagnosis, but lower levels DO NOT rule out asthma. They are supplementary, not definitive.**

# Confirming Diagnosis on Existing ICS Therapy




## 1 Assess & Prep

Document current status. Ensure patient has a written action plan and sufficient medication to reverse course.
Do not attempt if patient has active risk factors for exacerbations.

## 2 Adjust (The Step-Down)

Reduce the ICS dose by 25–50% (or stop maintenance LABA).
Schedule review in 2-4 weeks.

## 3 The Fork (Review Response)

**FLATLINE**

No change in symptoms or lung function.
Result: Consider ceasing ICS entirely.
Monitor closely for 12 months.
Investigate alternative diagnoses.

**Investigate Alternatives**

**DIVERGENCE**

Symptoms return and lung function falls
Result: Asthma Confirmed.
Return to lowest effective dose.

**Asthma Confirmed**

Phase 3: The Assessment Equation

# Asthma Control = Symptom Control + Future Risk


A patient can have perfect symptom control and still be at imminent risk for a fatal exacerbation. Both domains must be assessed independently at every visit.

# Domain 1: Assessing Symptom Control

## The 4-Week Checklist

(If 1-2 = Partly Controlled; 3-4 = Uncontrolled)

- [ ] **1.** Daytime symptoms more than twice a week?
- [ ] **2.** Any night waking due to asthma?
- [ ] **3.** SABA reliever used more than twice a week?
- [ ] **4.** Any activity limitation due to asthma?

### New 2026 Tool Integrations

**CAAT (Chronic Airways Assessment Test)**: An 8-item tool for adults that moves beyond standard metrics to include sputum and energy evaluations.

**Peds-AIRQ (Pediatric Asthma Impairment and Risk Questionnaire):** For ages 5-11. Uniquely links past 2-week symptom interference with 12-month exacerbation history.

# Domain 2: Assessing Future Exacerbation Risk

**Future Risk Dashboard**

## Medication & Clinical Risks

- **SABA Over-use**: ≥3 canisters per year (Exponential risk increase at ≥1 canister/month).
- **Low FEV1** (<60% predicted) or high bronchodilator responsiveness.
- History of **intubation** or **ICU admission** for asthma. ≥1 severe exacerbation in the last year.

**Future Risk Dashboard**

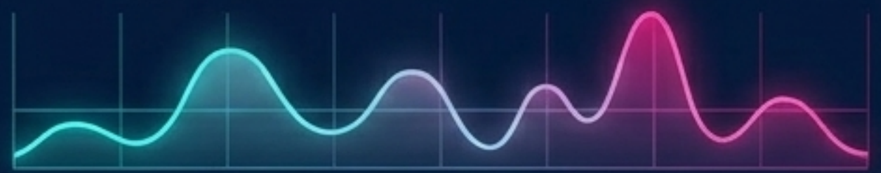

## Comorbidities

- Obesity, GERD, Chronic Rhinosinusitis, confirmed food allergies.

**Future Risk Dashboard**

## Exposures

Environmental & Behavioral Risks



- Tobacco **smoking**, e-cigarettes, high air pollution, allergen exposure in sensitized patients.

**Future Risk Dashboard**

## Type 2 Inflammatory Markers

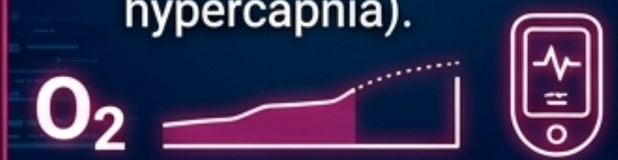

- Raised blood eosinophils; **High FeNO**.

# Acute Assessment & Management Thresholds

## The O2 Target Guardrails

**Do NOT administer oxygen** unless saturation falls **below 92%.**

Maximum upper limit target is 95% (to prevent worsening hypercapnia).



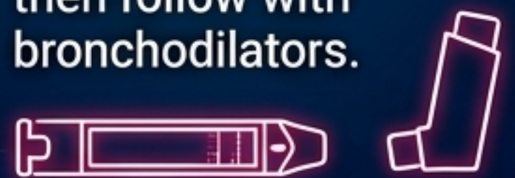

## Standardized Severity Scoring

Strongly recommending the use of validated clinical scores for children <18 years presenting with exacerbation.

**Example:** PRAM (Pediatric Respiratory Assessment Measure) to dictate mild vs. severe clinical pathways.

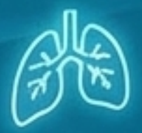
## The Anaphylaxis Protocol

If patient presents with features of **anaphylaxis** alongside asthma: Administer **Epinephrine FIRST** (IM or intranasal), then follow with bronchodilators.



# The 2026 Treatment Framework

## Track 1: The Preferred Pathway (ICS-Formoterol)



- Uses a single inhaler for both maintenance and Anti-Inflammatory Reliever (AIR) therapy across Steps 1-4.
- Substantially reduces risk of severe exacerbations and systemic corticosteroid exposure.
- Eliminates selective non-adherence by combining disease modification with symptom relief.

## Track 2: The Alternative Pathway (ICS + SABA)

- Requires two separate inhalers (maintenance + reliever).
- Newly updated to include ICS-SABA as an AIR in Step 1.
- Demands rigorous inhaler technique training to ensure patients do not rely solely on the SABA reliever.