

[Use of Omalizumab-biosimilars for CRSwNP in the German Health Care System - a Position Paper of the German Societies for Allergy AeDA and ORL DGHNO-KHC].

Global Initiative for Asthma · 2026

Study Guide: Global Strategy for Asthma Management and Prevention (2019 Update)

This study guide provides a comprehensive overview of the 2019 GINA (Global Initiative for Asthma) strategy. It is designed to assist health professionals and policy-makers in understanding the evidence-based management of asthma across various age groups and clinical settings.

Part 1: Key Concepts in Asthma Management

Definition and Nature of Asthma

Asthma is defined as a **heterogeneous disease**, typically characterized by chronic airway inflammation. It is not a single disease entity but rather a collection of different underlying processes (phenotypes) that result in similar clinical features.

Clinical Characteristics:

- **Variable Respiratory Symptoms:** Patients experience episodes of wheeze, shortness of breath, chest tightness, and cough.
- **Variable Expiratory Airflow Limitation:** The difficulty in breathing out varies over time and in intensity. While often reversible, this limitation can become persistent later in the course of the disease due to airway wall remodeling.
- **Triggers:** Symptoms are often brought on by exercise, allergens, irritants, weather changes, or viral respiratory infections.

Common Asthma Phenotypes

Recognizable clusters of demographic, clinical, and pathophysiological characteristics are termed "phenotypes."

Phenotype	Characteristics	Typical Response
Allergic Asthma	Often starts in childhood; associated with history of eczema, allergic rhinitis, or food/drug allergy. Sputum often shows eosinophilic inflammation.	Usually responds well to Inhaled Corticosteroids (ICS).
Non-allergic Asthma	Sputum may be neutrophilic, eosinophilic, or paucigranulocytic.	Often demonstrates less short-term response to ICS.
Adult-onset (Late-onset)	Frequently presents in adults, especially women. Often non-allergic.	Patients may require higher ICS doses or be relatively refractory to corticosteroids.
Asthma with Persistent Airflow Limitation	Found in patients with long-standing asthma.	Thought to be due to airway wall remodeling rather than simple inflammation.
Asthma with Obesity	Prominent respiratory symptoms with little eosinophilic airway inflammation.	Variable.

Fundamental Management Shift (2019 Update)

The 2019 update introduced the most significant change in asthma management in 30 years: **Short-acting beta2-agonist (SABA)-only treatment is no longer recommended for adults and adolescents.**

Rationale for the Change:

- SABA-only treatment increases the risk of severe exacerbations and asthma-related death.
- Adding an Inhaled Corticosteroid (ICS) significantly reduces these risks.
- **New Recommendation:** All adults and adolescents should receive ICS-containing controller treatment (either daily or symptom-driven in mild cases) to minimize the risk of severe exacerbations.

Part 2: Diagnostic Criteria and Methodology

The Diagnostic Process

Diagnosis is based on identifying a pattern of characteristic symptoms and documenting variable expiratory airflow limitation.

Factors Increasing Probability of Asthma:

- Presence of more than one type of symptom (wheeze, cough, etc.).
- Symptoms worse at night or in the early morning.
- Symptoms vary in intensity and over time.

- Symptoms triggered by laughter, exercise, or cold air.

Factors Decreasing Probability of Asthma:

- Isolated cough with no other respiratory symptoms.
- Chronic sputum production.
- Shortness of breath associated with dizziness or tingling (paresthesia).
- Chest pain.
- Exercise-induced dyspnea with noisy inspiration (stridor).

Objective Lung Function Testing

Whenever possible, evidence for the diagnosis should be documented **before** starting controller treatment, as symptoms and airflow limitation may improve with therapy, making confirmation difficult.

Test	Criterion for Asthma (Adults)	Criterion for Asthma (Children 6–11)
FEV1/FVC Ratio	Reduced if $< 0.75 - 0.80$	Reduced if < 0.90
Positive Bronchodilator (BD) Reversibility	FEV1 increase $>12\%$ and >200 mL (10–15 mins after 200–400 mcg albuterol)	FEV1 increase $>12\%$ predicted
PEF Variability	Average daily diurnal variability $>10\%$ over 2 weeks	Average daily diurnal variability $>13\%$ over 2 weeks
Exercise Challenge	Fall in FEV1 $>10\%$ and >200 mL	Fall in FEV1 $>12\%$ predicted, or PEF $>15\%$
Anti-inflammatory Trial	FEV1 increase $>12\%$ and >200 mL after 4 weeks of treatment	N/A

Part 3: Short-Answer Practice Questions

1. Why does GINA emphasize "testing before treating" when diagnosing asthma? *Answer:*

Documentation of variable airflow limitation should occur before starting controller treatment because the medication often normalizes lung function and resolves symptoms, making it significantly harder to confirm the diagnosis later.

2. What is the significance of the FEV1/FVC ratio in diagnosis? *Answer:* It is used to confirm expiratory airflow limitation. In adults, a ratio of less than 0.75–0.80 generally suggests limitation, while in children, the threshold is higher, typically less than 0.90.

3. Name three triggers commonly associated with asthma symptoms. *Answer:* Viral infections (colds), exercise, allergen exposure, changes in weather, laughter, or irritants (smoke, strong smells).

4. What are the "preferred" reliever options for Step 1 and Step 2 in adults/adolescents as of 2019?

Answer: Low dose ICS-formoterol taken as needed for symptom relief.

5. How frequently should a patient be followed up after an emergency department visit or hospitalization for a severe exacerbation?

Answer: Follow-up is recommended within 2 days (48 hours) of discharge.

6. For children 5 years and younger, what is the recommendation regarding the use of Oral Corticosteroids (OCS) for exacerbations?

Answer: OCS are generally not recommended for pre-school children except in emergency department or hospital settings.

Part 4: Essay Prompts for Deeper Exploration

1. **The Evolution of Mild Asthma Management:** Discuss the evidence and safety concerns that led to the 2019 recommendation against SABA-only treatment. Contrast the previous "as-needed SABA" approach with the current "ICS-containing" strategy for mild asthma.
2. **The Challenges of Differential Diagnosis:** Asthma can often be misdiagnosed or overlap with other conditions. Analyze the clinical features and diagnostic steps required to distinguish asthma from Chronic Obstructive Pulmonary Disease (COPD) and Inducible Laryngeal Obstruction (ILO).
3. **Phenotype-Guided Therapy:** Explain the concept of asthma phenotypes. How does identifying a specific phenotype (such as Allergic or Adult-onset asthma) influence the expected treatment response and the choice of medication?
4. **Implementing Global Strategies Locally:** The GINA report acknowledges that "fixed" international guidelines may not work in all locations. Discuss the barriers to implementation in low-resource settings and how health systems can adapt GINA recommendations to fit local practices.

Part 5: Glossary of Important Terms

- **Airway Hyperresponsiveness:** An exaggerated narrowing of the airways in response to stimuli that would not affect a healthy person.
- **Airway Remodeling:** Structural changes in the airway walls (such as thickening) caused by long-standing inflammation, leading to persistent airflow limitation.
- **Asthma-COPD Overlap (ACO):** A clinical description for patients who have features of both asthma and chronic obstructive pulmonary disease.
- **Bronchodilator (BD) Reversibility:** An improvement in FEV1 (or PEF) after the inhalation of a bronchodilator, indicating that the airflow limitation is at least partially reversible.
- **Controller Treatment:** Medications (usually containing ICS) taken regularly or as-needed to reduce airway inflammation, control symptoms, and reduce future risk of exacerbations.

- **Exacerbation:** A flare-up or episode of worsening symptoms and lung function that represents a change from the patient's usual status and may require a change in treatment.
- **FEV1 (Forced Expiratory Volume in 1 Second):** The volume of air that can be forcibly expired in the first second of a forced expiratory maneuver.
- **Heterogeneous Disease:** A disease with different underlying causes and various clinical presentations.
- **ICS (Inhaled Corticosteroid):** The cornerstone of asthma treatment; an anti-inflammatory medication used to reduce airway inflammation.
- **LABA (Long-Acting Beta2-Agonist):** A medication that relaxes airway smooth muscle for an extended period; always used in combination with an ICS for asthma.
- **PEF (Peak Expiratory Flow):** The maximum speed of expiration, measured with a peak flow meter.
- **SABA (Short-Acting Beta2-Agonist):** A "reliever" medication used for rapid relief of asthma symptoms (e.g., albuterol).
- **Variable Airflow Limitation:** The hallmark of asthma, where the degree of obstruction in the airways changes over time, often resolving spontaneously or with treatment.