2025 GINA report for asthma

Published **Online**
June 26, 2025
https://doi.org/10.1016/S2213-2600(25)00242-5

For the **2025 GINA report** see https://ginasthma.org/2025-gina-strategy-report/

On May 6, 2025, the Global Initiative For Asthma (GINA) published the 2025 update to their Global Strategy for Asthma Management and Prevention guidance report. Chair of the GINA Dissemination Working Group Mark L Levy (Kenton Bridge Medical Centre, Harrow, UK) emphasised to *The Lancet Respiratory Medicine* that clinicians should "use the GINA guidance for up-to-date evidence (as no other guideline is updated annually…to this level)."

In the 2025 report, the two-track approach has been retained regarding treatment recommendations for adults and adolescents (p 77). Although track 1 is preferred—ie, use of a single combined inhaled corticosteroid (ICS)–formoterol device as both the preferred controller and reliever medication, the less-preferred treatment track 2, consisting of an alternative controller plus a short-acting β-2 agonist (SABA) reliever, has been retained because many low-income countries do not have access to combination ICS–formoterol. However, it is important to remember that ICS-formoterol anti-inflammatory reliever is preferred as it significantly reduces the risk of severe exacerbations and need for urgent health care compared with SABA-based regimens. SABA-only treatment and over-use of SABA are risk factors for exacerbations and uncontrolled asthma. The GINA report notes that dispensing of three or more SABA canisters per year is associated with an increased risk of emergency department visit or hospitalisation, and dispensing of 12 or more canisters annually is associated with an increased risk of death. If the track 2 approach has to be used, GINA recommends clinicians to check that patients are adherent to maintenance ICS or ICS–long-acting muscarinic antagonist (LAMA) medication, otherwise they will be using SABA alone. The report also emphasises that high ICS doses should be used only for a maximum of 3–6 months if possible in track 2, and that maintenance oral corticosteroids should only be used as a last resort.

Key changes in the 2025 GINA report include major updates to the sections on asthma diagnosis and treatment, and asthma exacerbations, in children aged 5 years and younger (pp 181, 189, and 201). The report states that "the most important change is confirmation that the diagnosis of asthma can be made in this age-group." For a diagnosis of asthma to be confirmed in children aged 5 years and younger, all three of the following clinical criteria are required to be met: (1) recurrent acute wheezing episodes or at least one wheezing episode with asthma-like symptoms between episodes; (2) no likely alternative cause for the respiratory symptoms; and (3) a timely clinical response of respiratory symptoms or signs to asthma treatment of either a response to SABA within minutes or a reduction in wheezing episodes during a 2–3 months' diagnostic trial of daily ICS plus as-needed SABA. If only one or two criteria are met, the condition should be recorded as suspected asthma and follow-up continued. Experts in paediatric respiratory care welcome these updates: Leonard B Bacharier (Vanderbilt University Medical Center, Nashville, TN, USA) commented "A major advance in GINA 2025 is an approach to diagnosis of asthma in preschool children, a highly relevant and often confusing topic. This approach is largely clinical, and recommends that asthma should be diagnosed in children 5 years and younger if they demonstrate recurrent wheezing, have no likely alternative cause for the symptoms, and experience a timely response to either rapid acting or long-term asthma medications." Levy added "This is very clear, helpful advice for GPs and Accident & Emergency paediatric doctors, which will reduce attacks and may indeed save lives. If the words asthma or possible asthma are recorded in the medical record, and parents are informed of the diagnosis or suspected diagnosis, future management will improve because appropriate medication and care is more likely. We need to put an end to young children bouncing in and out of emergency departments and hospital with repeated episodes where a diagnosis of 'wheeze' or 'acute viral wheeze' is used. There are about half a million children in the UK [alone], many under 5 years old, who have been prescribed inhalers without a diagnosis."

For children aged 5 years and younger with mild persistent asthma (step 2)—eg, symptoms occurring more than 2 days per week with a history of severe wheezing episodes, GINA recommends controller treatment with daily low-dose ICS with as-needed SABA as reliever. For children who have symptoms for 2 days per week or less and no history of severe wheezing (step 1), there is insufficient evidence for daily controller treatment in this group and current recommendations for this group are to use SABA as needed. However, several studies of ICS–formoterol as anti-inflammatory

Ian Hooton/Science Photo Library

For the **ORACLE study** see **Articles** *Lancet Respir Med* 2025; **13:** 505–16

reliever therapy are ongoing in children including those aged 5 years and younger. Levy commented that this treatment option would be beneficial in younger children "based on research on the dangers of prescribing SABAs without inhaled corticosteroids in older children. Clearly more research is needed, however unopposed SABA is dangerous in other ages so that can't be ignored."

Treatment of asthma exacerbations in children aged 5 years and younger, indicated by worsening of respiratory symptoms such as a dry cough, difficulty breathing, and reduced exercise tolerance, should be treated with SABA delivered by pressurised metered-dose inhaler (pMDI) or nebuliser, plus oxygen if needed to maintain saturation at 94% or more. For additional options within the first hour of treatment, there is now more supportive evidence to recommend intravenous isotonic magnesium sulphate as an alternative to ipratropium bromide; however, nebulised magnesium is no longer recommended.

The criteria for an initial diagnosis of asthma in adults, adolescents, and children aged 6–11 years are typical variable respiratory symptoms such as wheeze, shortness of breath, chest tightness, or cough with possible worsening of symptoms after exercise, and variable expiratory airflow with spirometry or peak expiratory flow (PEF). Biomarker levels play a limited supportive role in diagnosis, where in a patient with typical asthma symptoms elevated fractional exhaled nitric oxide (FeNO) or elevated blood eosinophil counts can support a diagnosis of type 2 asthma. In patients with severe asthma taking high-dose ICS, a blood eosinophil count of at least 150 cells per µL or more suggests the presence of type 2 inflammation, while a blood eosinophil count of at least 300 cells per µL or more is a common threshold to be eligible for treatment with type 2-targeted biologics. For FeNO levels, as there are no current population reference values, GINA suggests that high FeNO is suggested by levels of more than 50 parts per billion (ppb) in ICS-naive individuals, of at least 25 ppb in those on medium-dose ICS, and of at least 20 ppb in those on high-dose ICS.

The main change to the 2025 diagnostic guidance is that the term "variable expiratory airflow limitation" has been replaced with "variable expiratory airflow" and that airflow limitation does not have to be present as the time of diagnosis. Levy commented "This is important because of the variable nature of asthma. Someone's lung function may be 100% normal at times." He additionally noted that the 2025 report included emphasis on the utility of PEF in the diagnosis of variable expiratory airflow, with excessive variability in twice-daily PEF over 2 weeks of more than 10% in adults or more than 13% in children deemed as a feature of variable lung function.

A new appendix on biomarkers of type 2 inflammation has been added to the end of the GINA report (p 217), collating information and citing research on the role of these biomarkers, particularly blood eosinophils and FeNO. As well as their utility in supporting a diagnosis of asthma, the new research on these biomarkers is "supportive of the longstanding GINA recommendations for assessing risk of future exacerbations", says Levy. The report cites publication of the ORACLE study as adding to the recommendation that multiple factors including type 2 biomarkers should be considered when assessing a patient's risk of future exacerbations. However, factors contributing to the variability in blood eosinophil count and FeNO levels should also be considered when assessing a patient's eligibility for type 2-inflammation targeted biologic therapy and when comparing their results with absolute thresholds. Such factors include circadian variability, patient sex, and smoking status: blood eosinophil counts are higher in the morning, in males, and in smokers, than in the afternoon, females, and non-smokers, respectively. FeNO is higher in the afternoon, in males, and non-smokers, compared with in the morning, females, and current smokers, respectively.

Box 2-2B on page 37 has been updated to reflect the multiple factors that should be considered when assessing patients' risk of future exacerbations (even if a patient has only a few asthma symptoms). In addition to raised levels of type 2 inflammatory biomarkers, other factors that increase the risk of exacerbations include SABA over-use, which is also associated with increased mortality if one or more canisters per month are used; inadequate ICS; smoking exposure; low FEV_1, especially less than 60% predicted; and a history of one or more exacerbations in the past year. Levy commented "Asthma control is assessed in two domains—current symptoms and risk of future attacks—so simply asking someone once a year 'how their asthma is that day', like with an ACT questionnaire, instead of also checking for risk, such as previous attacks in the last year, puts patients at risk."

Priya Venkatesan