

## Online supplement for “Key recommendations for primary care from the 2022 Global Initiative for Asthma (GINA) update”

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## Assessment of asthma control

The level of asthma control is the extent to which the features of asthma can be observed in the patient, or have been reduced or removed by treatment.

Asthma control is assessed in two domains: symptom control (Supplementary Figure 1A below) and risk of adverse outcomes (Supplementary Figure 1B).

Poor symptom control is burdensome to patients and increases the risk of exacerbations, but patients with good symptom control can still have severe exacerbations. See GINA 2022 Box 3-8 for strategies to treat modifiable risk factors for exacerbations.

### Supplementary Figure 1. GINA assessment of asthma control in adults, adolescents and children 6–11 years

A. Asthma symptom control		Level of asthma symptom control		
In the past 4 weeks, has the patient had:		Well controlled	Partly controlled	Uncontrolled
<ul style="list-style-type: none"> <li>• Daytime asthma symptoms more than twice/week? Yes <input type="checkbox"/> No <input type="checkbox"/></li> <li>• Any night waking due to asthma? Yes <input type="checkbox"/> No <input type="checkbox"/></li> <li>• SABA reliever for symptoms more than twice/week?* Yes <input type="checkbox"/> No <input type="checkbox"/></li> <li>• Any activity limitation due to asthma? Yes <input type="checkbox"/> No <input type="checkbox"/></li> </ul>	}	None of these	1–2 of these	3–4 of these
B. Risk factors for poor asthma outcomes				
<p>Assess risk factors at diagnosis and periodically, particularly for patients experiencing exacerbations.</p> <p>Measure FEV<sub>1</sub> at start of treatment, after 3–6 months of controller treatment to record the patient's personal best lung function, then periodically for ongoing risk assessment.</p>				
<p><b>Having uncontrolled asthma symptoms is an important risk factor for exacerbations.</b></p> <p>Additional <b>potentially modifiable risk factors for flare-ups (exacerbations)</b>, even in patients with few symptoms<sup>†</sup> include:</p> <ul style="list-style-type: none"> <li>• <b>Medications:</b> high SABA use (≥3x200-dose canisters/year associated with increased risk of exacerbations; increased mortality particularly if ≥1 canister per month); inadequate ICS: not prescribed ICS; poor adherence; incorrect inhaler technique</li> <li>• <b>Other medical conditions:</b> obesity; chronic rhinosinusitis; GERD; confirmed food allergy; pregnancy</li> <li>• <b>Exposures:</b> smoking; e-cigarettes; allergen exposure if sensitized; air pollution</li> <li>• <b>Context:</b> major psychological or socioeconomic problems</li> <li>• <b>Lung function:</b> low FEV<sub>1</sub>, especially &lt;60% predicted; high BD responsiveness</li> <li>• <b>Type 2 inflammatory markers:</b> higher blood eosinophils; elevated FeNO (in adults with allergic asthma taking ICS)</li> </ul> <p>Other major independent risk factors for flare-ups (exacerbations)</p> <ul style="list-style-type: none"> <li>• Ever intubated or in intensive care unit for asthma</li> <li>• ≥1 severe exacerbation in last 12 months</li> </ul>				<p><b>Having any of these risk factors increases the patient's risk of exacerbations even if they have few asthma symptoms</b></p>
<p>Risk factors for developing persistent airflow limitation</p> <ul style="list-style-type: none"> <li>• History: preterm birth, low birth weight and greater infant weight gain; chronic mucus hypersecretion</li> <li>• Medications: lack of ICS treatment in patients who had a severe exacerbation</li> <li>• Exposures: tobacco smoke; noxious chemicals; occupational exposures</li> <li>• Investigations: low initial FEV<sub>1</sub>; sputum or blood eosinophilia</li> </ul>				
<p>Risk factors for medication side-effects</p> <ul style="list-style-type: none"> <li>• Systemic: frequent OCS; long-term, high dose and/or potent ICS; also taking P450 inhibitors</li> <li>• Local: high dose or potent ICS; poor inhaler technique</li> </ul>				

BD: bronchodilator; FEV<sub>1</sub>: forced expiratory volume in 1 second; ICS: inhaled corticosteroid; OCS: oral corticosteroid; P450 inhibitors: cytochrome P450 inhibitors such as ritonavir, ketoconazole, itraconazole; SABA: short-acting beta<sub>2</sub>-agonist.

\*Based on short-acting beta<sub>2</sub> agonist (as-needed ICS-formoterol reliever not included); excludes reliever taken before exercise.

<sup>†</sup>'Independent' risk factors are those that are significant after adjustment for the level of symptom control.

GINA 2022 recommendations for assessing asthma control in two domains: symptom control, and risk factors for poor outcomes. Adapted with permission from Box 2-2 in GINA 2022.<sup>1</sup>

1. Global Initiative for Asthma. *Global Strategy for Asthma Management and Prevention, 2022*, (GINA, 2022). Available at: [www.ginasthma.org/reports](http://www.ginasthma.org/reports)