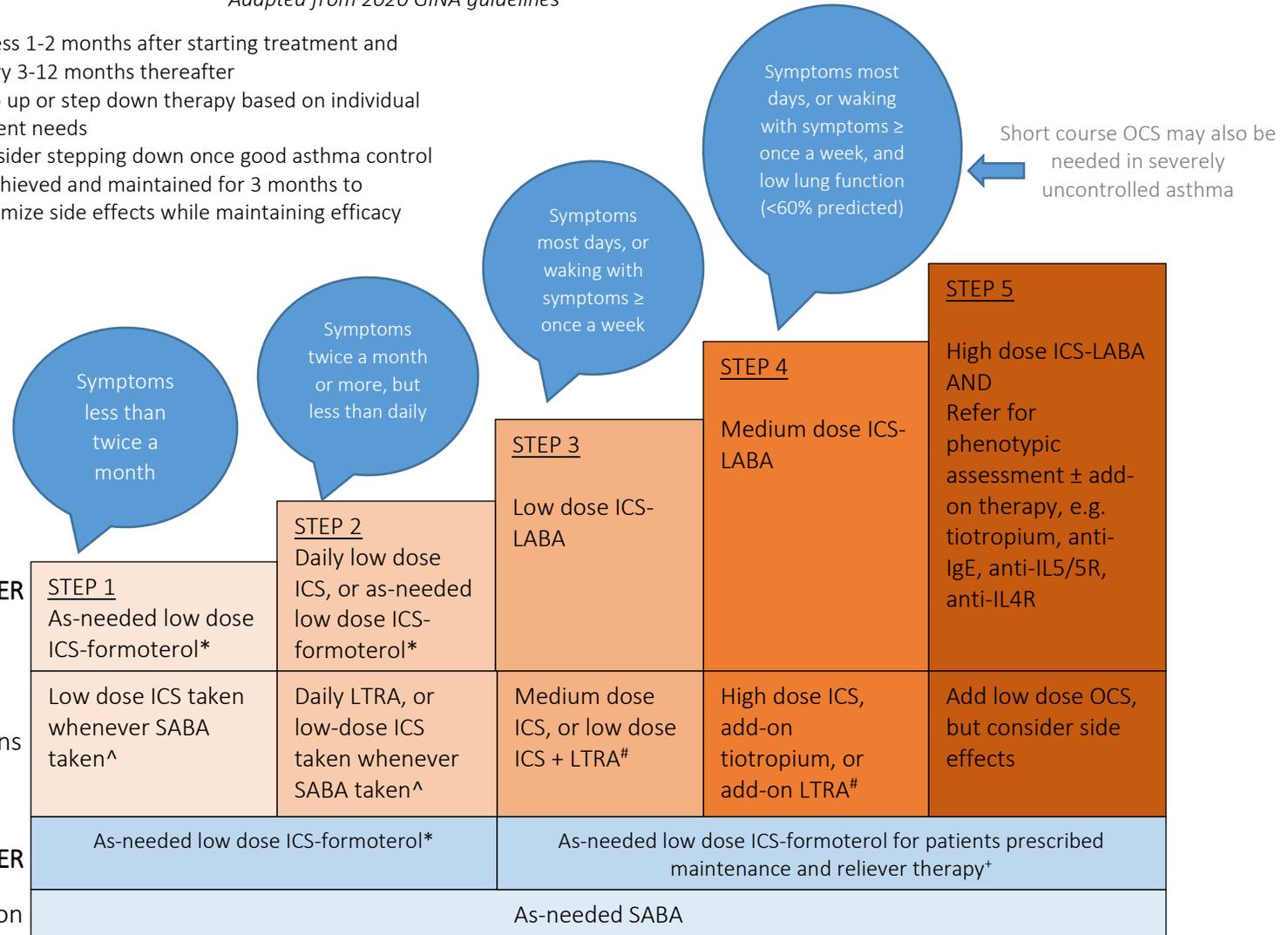
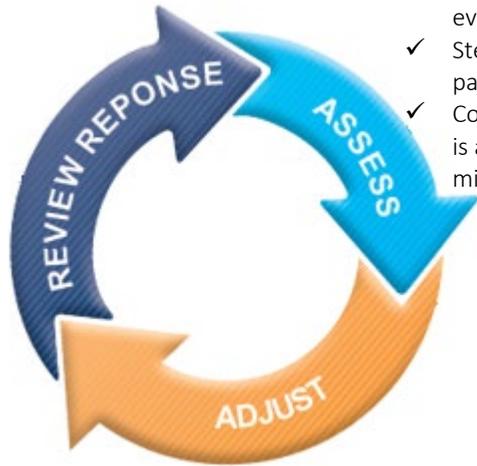


Management of Adults and Adolescents 12+ years

Adapted from 2020 GINA guidelines

- ✓ Assess 1-2 months after starting treatment and every 3-12 months thereafter
- ✓ Step up or step down therapy based on individual patient needs
- ✓ Consider stepping down once good asthma control is achieved and maintained for 3 months to minimize side effects while maintaining efficacy



Click [here](#) for ICS estimated comparative daily dosages or [here](#) for an ICS/LABA dosing chart

*Data only with budesonide-formoterol; ^Separate or combination ICS and SABA inhalers; #Consider adding SL immunotherapy for sensitized patients with allergic rhinitis, allergy to house dust mite and FEV1 >70% predicted; +Low-dose ICS-formoterol is the preferred reliever only for patients prescribed budesonide-formoterol maintenance and reliever therapy. For other ICS-LABAs, the reliever is SABA. Key: ICS: inhaled corticosteroid; LABA: long-acting beta₂-agonist; LTRA: leukotriene receptor antagonist; OCS: oral corticosteroids; SABA: short-acting beta₂-agonist



ACCOUNTABLE
—HEALTH PARTNERS—



Pharmacy Pearls

May 2020

Asthma Medication Management: Adults and Adolescents

Contact: AHPPharmacist@urmc.rochester.edu

MDD for ICS-formoterol Inhalers

Budesonide-formoterol:

12 inhalations per day or 72 mcg of formoterol per day

A Note on Beta-Blockers

- ✓ Be sure to use cardio-selective beta-blockers in patients with asthma especially in cases where they improve outcomes (e.g. post-MI or HFrEF). These include metoprolol succinate, metoprolol tartrate, atenolol and bisoprolol.
- ✓ Start low dose and titrate up
- ✓ Avoid non-selective beta-blockers as these can induce exacerbations (e.g. carvedilol, propranolol, etc)
- ✓ Be aware that beta-blocker eye drops can result in significant blood levels. One drop of timolol 0.5% in each eye has about the same effect as 10mg orally.
 - Consider betaxolol if needed (selective)
 - Keep eyes closed for at least 1 minute after instilling to limit absorption through tear ducts

Why the Change in Preferred Reliever?

There is strong evidence that SABA-only treatment, although providing short-term relief of asthma symptoms, does not protect patients from severe exacerbations, and that regular or frequent use of SABAs actually increases the risk of exacerbations

- ✓ Regular or frequent use of short-acting beta₂-agonists is associated with adverse effects including
 - β-receptor downregulation, decreased bronchoprotection, rebound hyperresponsiveness and decreased bronchodilator response
 - Increased allergic response and eosinophilic airway inflammation
- ✓ Higher use of short-acting beta₂-agonists is associated with adverse clinic outcomes
 - Dispensing of ≥3 canisters per year (1.7 puffs/day) is associated with higher risk of ED presentations
 - Dispensing of ≥12 canisters per year is associated with higher risk of death
- ✓ Low dose ICS markedly reduces asthma hospitalizations and death and is very effective in preventing severe exacerbations, reducing symptoms, improving lung function and preventing exercise-induced bronchoconstriction, even in patients with mild asthma¹⁻⁴

Improving Asthma Care

- ✓ Minimize adverse effects from asthma medications
 - Advise patients to rinse and spit after use of ICS
 - Use the lowest ICS dose that provides control; assess technique, adherence and triggers prior to escalating dose
 - Avoid “stepping down” therapy during pregnancy, travel or respiratory infection
 - Teach patients to keep track of how many doses are left in their inhaler (e.g. use of dose counter) to minimize gaps in refills
- ✓ Ensure patients understand the difference between reliever and controller medications as well as priming and cleaning instructions for their individual devices
- ✓ Identify and manage triggers
 - Changes in weather, occupational sensitizers, smoke, medications, strong odors, dust mites, animal dander, cockroach droppings, mold, pollen, etc
- ✓ Teach patients to recognize symptom patterns that suggest loss of asthma control through an asthma control plan
- ✓ Be sure immunizations are up-to-date (e.g. influenza, pneumonia)
- ✓ Smoking cessation- offer at every visit

References: **1.** Beasley R, et al. Controlled Trial of Budesonide-Formoterol as Needed for Mild Asthma. NEJM. 2019 May 23;380(21):2020-2030. doi: 10.1056/NEJMoa1901963. Epub 2019 May 19. **2.** Hardy J, et al. Budesonide-formoterol reliever therapy versus maintenance budesonide plus terbutaline reliever therapy in adults with mild to moderate asthma (PRACTICAL): a 52-week, open-label, multicenter, superiority, randomized controlled trial. Lancet. 2019 Sep 14;394(10202):919-928. doi: 10.1016/S0140-6736(19)31948-8. Epub 2019 Aug 23. **3.** O'Byrne et al. Inhaled Combined Budesonide-Formoterol as Needed in Mild Asthma. NEJM. 2018 May 17;378:1865-1876. doi: 10.1056/NEJMoa1715274 **4.** Bateman, et al. As-Needed Budesonide-Formoterol versus Maintenance Budesonide in Mild Asthma. NEJM. 2018 May 17;378:1877-1887. doi: 10.1056/NEJMoa1715275