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# Focused summary (2021) of updated guidelines for asthma management of adults and children ages 12+

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# Comparative Doses of Generic and Brand Name Inhaled Corticosteroids

Reassess uncontrolled asthma every 2 to 6 weeks until good control is achieved.

Use lowest dose needed to keep asthma well controlled. Consider step down if controlled for > 3 months

| Generic name | Monotherapy Brand names | Brand names with LABA | Rx | ICS Dose | Dosing Ages 0-4 yrs | Dosing Ages 5-11 yrs | Dosing Ages 12+ yrs |
|---|---|---|---|---|---|---|---|
| Budesonide DPI **+/- Formoterol** | **No LABA:** Pulmicort | **+ Formoterol:** Symbicort | 2x day | Low:<br>Med:<br>High: | Nebules:<br>0.25-0.5 mg<br>>0.5-1 mg<br>>1 mg: | -<br>180-360 mcg<br>>360-720 mcg<br>>720 mcg | -<br>180-540 mcg<br>>540-1080 mcg<br>>1080 mcg |
| Beclomethasone MDI | **No LABA:** Qvar | | 2x day | Low:<br>Med:<br>High: | | 80-160 mcg<br>>160-320 mcg<br>>320 mcg | 80-240 mcg<br>>240-480 mcg<br>>480 mcg |
| Ciclesonide MDI | **No LABA:** Alvesco | | 2x day | Low:<br>Med:<br>High: | | 80-160 mcg<br>>160-320 mcg<br>>320 mcg | 160-320 mcg<br>>320-640 mcg<br>>640 mcg |
| Flunisolide MDI | **No LABA:** Aerospan HFA | | 2x day | Low:<br>Med:<br>High: | | 160 mcg<br>>160-480 mcg<br>>480 mcg | 320 mcg<br>>320-640 mcg<br>>640 mcg |
| Fluticasone Propionate MDI **+/- Salmeterol** | **No LABA:** Flovent HFA | **+ Salmeterol:** Advair HFA | 2x day | Low:<br>Med:<br>High: | 176 mcg<br>>176-352 mcg<br>>352 mcg | 88-176 mcg<br>>176-352 mcg<br>>352 mcg | 88-264 mcg<br>>264-440 mcg<br>>440 mcg |
| Fluticasone Propionate DPI **+/- Salmeterol** | **No LABA:** Flovent Diskus ArmonAir | **+ Salmeterol:** Advair Diskus Airduo Wixela | 2x day | Low:<br>Med:<br>High: | | 100-200 mcg<br>>200-400 mcg<br>>400 mcg | 100-300 mcg<br>>300-500 mcg<br>>500 mcg |
| Fluticasone Furoate DPI **+/- Vilanterol** | **No LABA:** Arnuity Ellipta | **+ Vilanterol:** *Breo *For 18+ yrs | 1x day | Low:<br>Med:<br>High: | | | No low dose<br>100 mcg<br>>100 mcg |
| Mometasone DPI **+/- Formoterol** | **No LABA:** Asmanex | **+ Formoterol:** Dulera | 1x day or 2x day | Low:<br>Med:<br>High: | | 110 mcg<br>220-440 mcg<br>>440 mcg | 110-220 mcg<br>>220-440 mcg<br>>440 mcg |

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**Key points for patient and family education and self-management training:**

1. Symptoms of asthma indicate "**swelling**" (inflammation) in lungs. Chronic inflammation causes "**scarring**" over time (remodeling). Emphasize symptoms > twice a week can lead to permanent scarring in the lungs.
2. Review medication types - Rescue and Control. Emphasize only control medication can "stop the scarring" and protect long term lung functioning. Control medication takes days to weeks to work. Explain that decreased swelling = fewer symptoms = less need for/dependence on SABA over time.
3. Emphasize that asthma inhalers only work if taken correctly - "Get it in and keep it in." It is critical to explain, model, and require return demonstration of inhaler technique over multiple visits. Use spacer for all ages.
4. Help establish an easy to follow routine: Keep inhalers in high visibility/access locations (ex. with toothbrush).
5. Encourage using a digital peak flow meter to help patient understand effect of inflammation in the lungs.

Mammen, J.R. (2021) University of Rhode Island. Adapted from Expert Panel Report (EPR) 3, EPR4 (2020 update) guidelines for management of asthma and the Global Initiative for Asthma (GINA) 2020 Pocket Guide for Asthma Management and Prevention. This brief guide is a general summary and does not represent the entirety of the EPR3, EPR4 or GINA guidelines. For additional details please refer to the full guidelines. **Version date: 2/19/2021**

# Focused Summary of Asthma Guidelines (2021) Pocket Guide for Clinicians

**For adults and children ages 12+ years**

This brief clinical guide for the management of asthma is based on the Expert Panel Report 3 and 4 (draft) and GINA 2020 report and other current asthma research.

Use caution in assessing asthma symptoms. Many patients do not report "normal" symptoms and may ration inhaler use even when symptomatic. Consider using an approach like the following, and do not rely on frequency of SABA use as a conclusive measure of asthma control.

**In general over the past 1 to 4 weeks:**

1. How many days a week do you have any symptoms of recurrent coughing, wheezing, chest tightness/pain or repetitive throat clearing?
2. How many nights a week do you wake up from your asthma symptoms?
3. Has asthma limited your activity in any way lately?
4. What medication are you currently taking for your asthma and how do you take it?
5. How many times did you need to use your rescue inhaler for symptoms?
6. Do you always take your rescue inhaler when you have symptoms or do you wait?

**COVID-19 guidance:** avoid nebulizers or spirometry when possible to prevent aerosolizing virus.

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**Intermittent Asthma**

# Management of Persistent Asthma in Individuals Ages 12 Years and Older

Consult with asthma specialist if Step 4 or higher is needed.

Reassess uncontrolled asthma every 2 to 6 weeks until good control is achieved.

ICS = inhaled corticosteroid (ICS+LABA indicates combined/concomitant use of both medications)
LABA = long acting beta agonist
LAMA = long acting muscarinic agonist
LTRA = leukotriene receptor agonist
OCS = oral systemic corticosteroid
SABA = short acting beta agonist

## STEP 1
Intermittent

Preferred (EPR4):
- PRN SABA

Preferred options (GINA):
- PRN ICS+LABA
- PRN low-dose ICS taken when SABA used

For acute symptoms:
2-8 puffs albuterol or 1 nebulizer; up to 3 treatments @ 20 minute intervals PRN; may need OCS

## STEP 2
Mild Persistent

Preferred EPR4 & GINA:
- Daily low-dose ICS and PRN SABA
- PRN low-dose ICS taken when SABA used

Preferred option (GINA):
- PRN ICS+LABA

Alternative options:
- Daily LTRA and PRN SABA

## STEP 3
Moderate Persistent

Preferred EPR4 & GINA:
- Low-dose ***SMART**

Alternative options:
- Daily medium-dose ICS and PRN SABA
- Daily low-dose ICS+LABA and PRN SABA
- Daily low-dose ICS+LAMA and PRN SABA
- Daily low-dose ICS and LTRA and PRN SABA

## STEP 4
Moderate Persistent

Preferred EPR4 & GINA:
- Medium-dose ***SMART**

Alternative options:
- Daily medium-dose ICS+LABA and PRN SABA
- Daily higher-dose ICS+LABA and PRN SABA
- Daily medium-dose ICS+LAMA and PRN SABA

## STEP 5+
Severe Persistent

Preferred EPR4 & GINA:
- Daily medium to high dose ICS+LABA and LAMA and PRN SABA

Alternative options:
- Daily high-dose ICS+LABA and PRN SABA
- Daily high-dose ICS and LTRA and PRN SABA
- **For other options: see guidelines**

FDA issued Boxed Warning for montelukast in March 2020

***SMART - Single Maintenance and Reliever Therapy (currently off label in U.S.):** Preferred for all patients at step 3 to 4;
SMART is combined ICS + formoterol (LABA) given daily for control PLUS as needed for symptoms (up to 12 total puffs per day for > 12 years age).

## Classifying Asthma Severity in Individuals Ages 12 Years and Older

Assess severity BEFORE start of controller therapy based on symptoms, OR estimated based on level of stepwise therapy PLUS current level of control.

| Intermittent | Mild Persistent | Moderate Persistent | Severe Persistent |
|---|---|---|---|
| **Symptoms:** | **Symptoms:** | **Symptoms:** | **Symptoms:** |
| **Days**: 2 days/wk or less | **Days**: >2 days/wk, not daily | **Days**: everyday (but not throughout the day) | **Days**: throughout the day |
| **Wake up**: <2/month | **Wake up**: 3 - 4/month | **Wake up**: >1/week, but not nightly; ***(≥4/week is VPC)** | **Wake up**: often 7x week |
| **Activity**: no limitations | **Activity**: minor limitations | **Activity**: some limitations | **Activity**: extremely limited |
| **PEF** or FEV1: > 80% | **PEF** or FEV1: > 80% | **PEF** or FEV1: 60 - 80% | **PEF** or FEV1: < 60% |
| **SABA**: ≤2 time/week | **SABA**: >2 time/week | **SABA**: Daily | **SABA**: Several times daily |
| **Well controlled** | **Not well controlled (NWC)** | oral/systemic steroid use > 1 x year | **Very poorly controlled (VPC)** |

Assess and document BOTH severity and control at every visit. Control corresponds with highest level of current symptoms in any symptom box.

## Classifying Asthma Control in Individuals Ages 12 Years and Older

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 Adapted from Expert Panel Report (EPR) 3, EPR4 (2020 update) guidelines for management of asthma and the Global Initiative for Asthma (GINA) 2020 Pocket Guide for Asthma Management and Prevention