ASTHMA 2024 GUIDELINES

CREATED BY DR NUSAIBA ALABBASI
Simplified clinic guide for **Primary Care**

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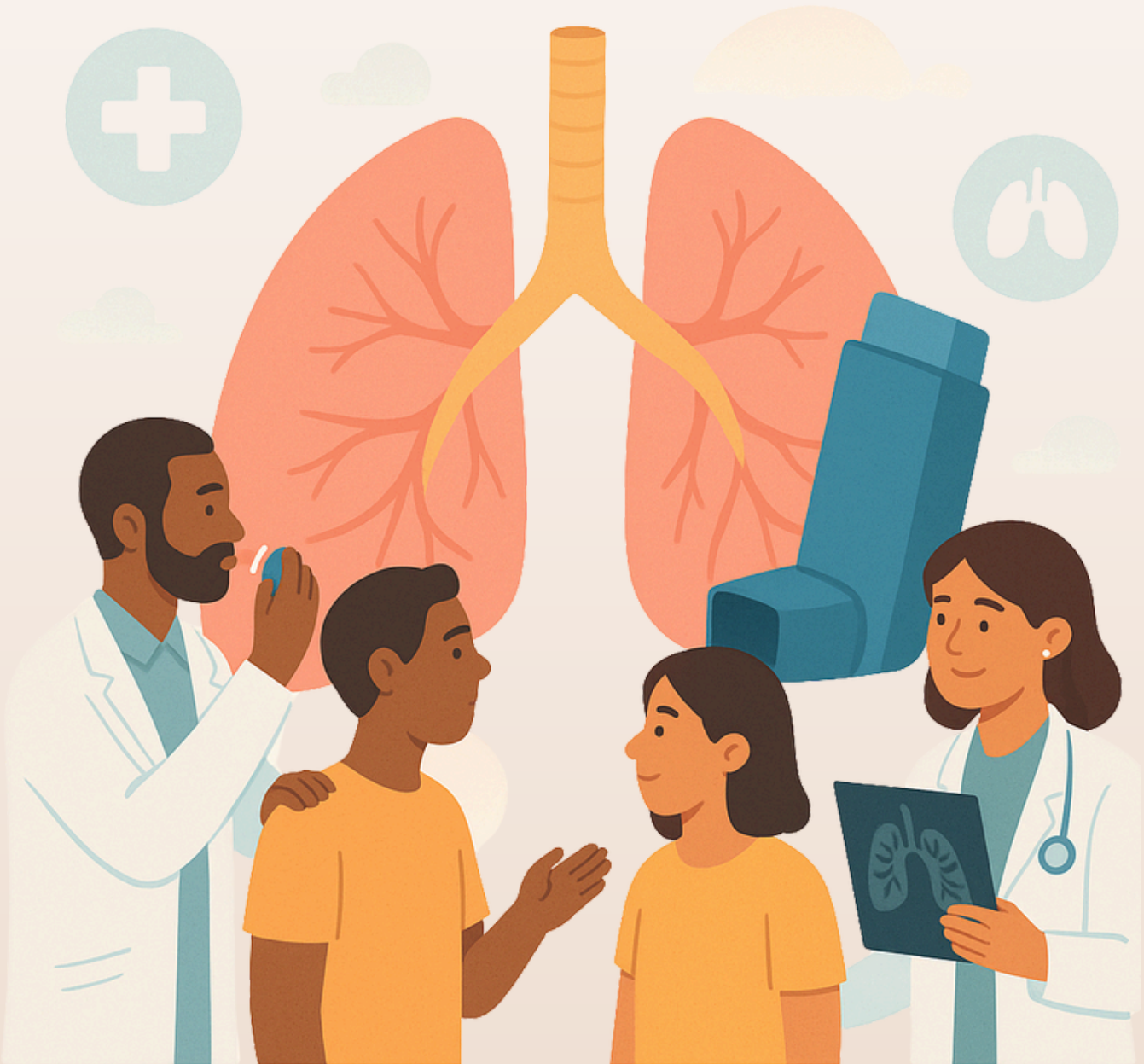
ASTHMA GUIDELINES
GINA GUIDELINES 2024



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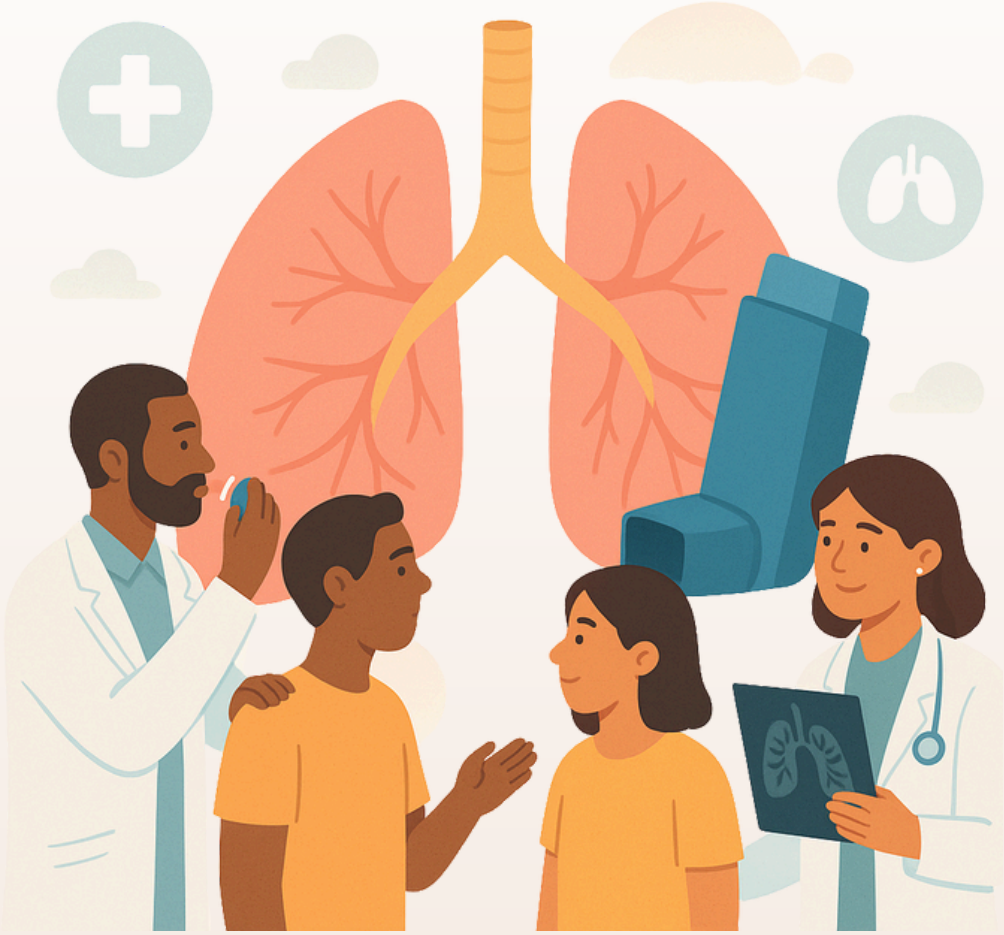

WHAT IS ASTHMA?

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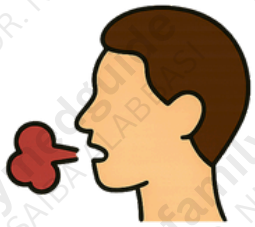
What is Asthma

Chronic airway inflammation. Defined by the history **respiratory symptoms** that **vary** over in time and in intensity, together with variable expiratory airflow limitations

Approach to asthma

SUSPECTING ASTHMA?



- ✓ Recurrent wheeze, shortness of breath, chest tightness, and/or cough
- ✓ Symptoms vary over time and in intensity
- ✓ Worsen at night, on waking,
- ✓ Often triggered by exercise, laughter, exposure to allergens or cold air
- ✓ Appear or worsen with viral infections

CLINICAL ASSESSMENT

History

- ✓ Symptom frequency, timing (e.g., seasonal, nocturnal)
- ✓ **Triggers:** exercise, weather, pets, dust, smoke
- ✓ **Medication use and response** (e.g. relief with salbutamol)
- ✓ Sick days, emergency visits, previous diagnoses

Physical Examination

- ✓ May reveal wheezing, especially during forced expiration
- ✓ Often normal between attacks

CLINICAL CLUES

- ✓ Personal or family history of asthma, eczema, or allergic rhinitis
- ✓ Symptoms triggered by known allergens or irritants
- ✓ Response to bronchodilators

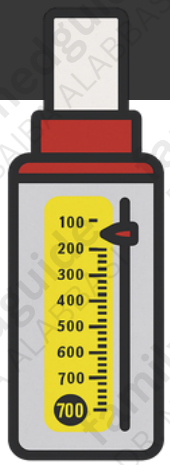
SOME DIFFERENTIAL DIAGNOSIS TO CONSIDER

Full detailed list available in GINA guideline page 27-28

- **COPD** ---------- Older age, smoker, persistent symptoms, less reversibility
- **Heart failure** ---------- Orthopnea, edema, cardiac history
- **GERD** ---------- Cough after meals, heartburn
- **Upper airway cough syndrome** ---------- Postnasal drip, throat clearing
- **Vocal cord dysfunction** ---------- Inspiratory wheeze, no bronchodilator response

TESTING IN PRIMARY CARE CLINIC SETTING

Using Peak Expiratory Flow meter (PEF)



Bronchodilator (BD) reversibility test with PEF

1. Measure PEF in clinic
2. Give 200-400 mcg salbutamol
3. Measure change 10-15 minutes after and compare with pre-BD readings

Adults: increase in PEF **≥ 20%**

Children: increase in PEF **≥ 15%**

Note: Positive test more likely if BD withheld before test: SABA ≥ 4 hours, LABA 24-48 hours

Other tests to consider

Excessive variability in BD PEF over 2 weeks

Adults: average daily diurnal PEF variability **> 10%**

Children: average daily diurnal PEF variability **> 13%**

Increase in Lung function after 4 weeks of treatment

Adults: increase in PEF **≥ 20%**

Children: increase in PEF **≥ 15%**

CONFIRMING THE DIAGNOSIS

A diagnosis of asthma is confirmed when:

- ✓ Typical symptoms are present
- ✓ Variable expiratory airflow limitation is documented
- ✓ Alternative diagnoses have been excluded

- Repeat testing may be needed over time if initial results are inconclusive.

GENERAL PRINCIPLES

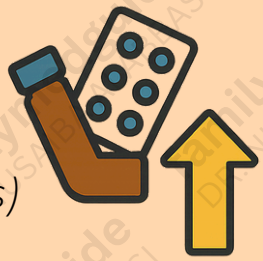
FOLLOW UP

- After initiation ➤ **Every 1-3 months**
- If stable with good inhaler technique ➤ **Every 3-12 months**
- After Exacerbation ➤ **Follow up in 1 week**

STEPPING UP

Sustained (symptoms persist despite 2-3 months of controller)

- Assess Inhaler technique
- Modifiable risk Factors
- Poor Adherence
- Other conditions causing symptoms *(e.g allergic rhinitis)*



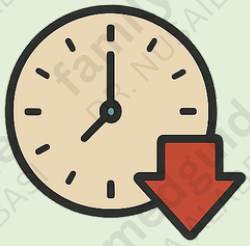
Short term step up

- For **1-2 weeks** if viral infection or allergen exposure

STEPPING DOWN

If symptoms controlled for ≥ 3 months; consider:

- Good timing *(no URTI, not pregnant, not travelling)*
- Assess Frequency of exacerbations and ER visits
- Document baseline status
- Provide written asthma plan if available
- Reduce ICS dose by **25-50%** gradually on **2-3 months** interval
  - e.g. If on low dose ICS Symbicort PRN



Summary of assessment of asthma

in adults, adolescents, and children 6–11 years

Assess asthma control

Assess treatment issues

Assess multimorbidity

SYMPTOM CONTROL & FUTURE RISK OF ADVERSE OUTCOMES

- **ASSESS** symptom control over the last 4 weeks or longer.
- **IDENTIFY** risk factors for exacerbations, persistent airflow limitation or side-effects
- **MEASURE** lung function:
  - At diagnosis/start of treatment,
  - 3–6 months after starting ICS-containing treatment
  - Then periodically
    - e.g., ≥ every 1–2 years, but more often in at-risk patients and those with severe asthma.

ASSESS TREATMENT ISSUES

- **DOCUMENT** the patient's current treatment step
- **WATCH** inhaler technique, assess adherence and side-effects
- **CHECK** that the patient has a written asthma action plan.
- **ASK** about the patient's attitudes and goals for their asthma and medications.

ASSESS MULTIMORBIDITY

- Rhinitis, rhinosinusitis, GERD, obesity, OSA, depression and anxiety can contribute to symptoms and poor quality of life, and sometimes to poor asthma control

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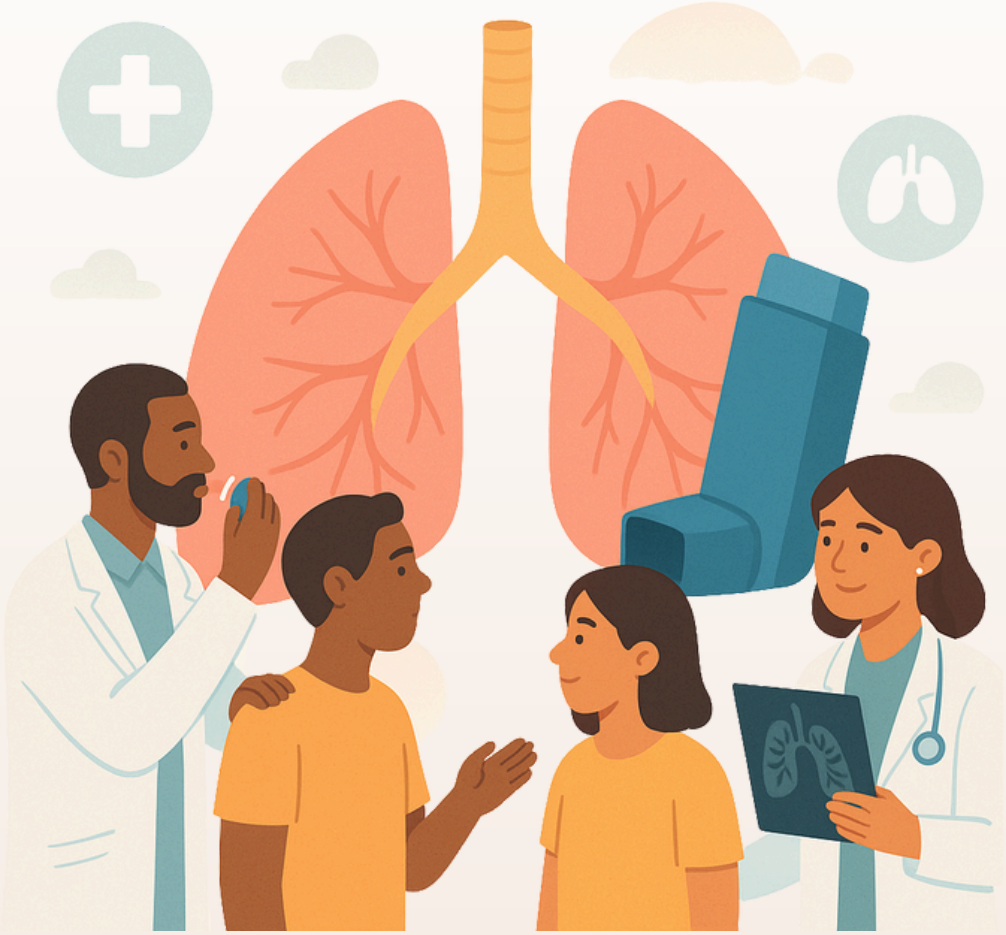

ADULT & ADOLESCENT

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STEP 1

Infrequent asthma symptoms ≤ 2 days/week

TRACK 1

AIR ONLY

Low dose ICS + LABA PRN

Symbicort

(Budesonide/Formoterol)

160mcg/4.5mcg

1 inhalation PRN

Max 12 inhalations/day

Budenoside
Low dose = **200-400/day**

TRACK 2

RELIEVER

SABA PRN

Ventolin

(Salbutamol)

1-2 puffs PRN

Max 8 puffs/day

+

CONTROLLER

Low dose ICS <u>whenever</u> SABA is taken

Flixotide

(Fluticasone Propionate)

125mcg

1 puff PRN

Max 8 puffs/day

Fluticasone propionate
Low dose = **100-250/day**

STEP 2

Asthma symptoms < 3-5 times/week with normal or mildly reduced Lung Function Test

➤**Start at STEP 2** for most adults & adolescents

TRACK 1

AIR ONLY

Low dose ICS + LABA PRN

Symbicort

(Budesonide/Formoterol)

160mcg/4.5mcg

1 inhalation PRN

Max 12 inhalations/day

Budenoside
Low dose = **200-400/day**

TRACK 2

RELIEVER

SABA PRN

Ventolin

(Salbutamol)

1-2 puffs PRN

Max 8 puffs/day

+

CONTROLLER

Low dose ICS <u>daily</u> maintanence

Flixotide

(Fluticasone Propionate)

125mcg

1 puff once daily

Max 8 puffs/day

Fluticasone propionate
Low dose = **100-250/day**

STEP 3

Symptoms most days **or** night time ≥ 1 time/week **or** Low PFT

TRACK 1

AIR ONLY

Low dose ICS **daily** + **PRN**

Symbicort

(Budesonide/Formoterol)

160mcg/4.5mcg

1 inhalation BD + PRN

Max 12 inhalations/day

Budenoside
Low dose = **200-400/day**

TRACK 2

RELIEVER

SABA PRN

Ventolin

(Salbutamol)

1-2 puffs PRN

Max 8 puffs/day

+

CONTROLLER

Low dose **ICS-LABA daily** maintenance

Seretide

(Fluticasone/Salmeterol)

250mcg

1 inhalation OD

250mcg/50mcg

Fluticasone propionate
Low dose = **100-250/day**

OR

Relvar

(Fluticasone/vilanterol)

100mcg

1 inhalation OD

100mcg/25mcg

Fluticasone Furate
Low dose = **100/day**

STEP 4

Daily symptoms **or** night time ≥ 1 time/week **with** Low PFT

TRACK 1

AIR ONLY

Medium dose ICS **daily** + **PRN**

Symbicort

(Budesonide/Formoterol)

160mcg/4.5mcg

2 inhalations BD + PRN

Max 12 inhalations/day

Budenoside
Medium dose = **400-800/day**

TRACK 2

RELIEVER

SABA PRN

Ventolin

(Salbutamol)

1-2 puffs PRN

Max 8 puffs/day

+

CONTROLLER

Medium dose **ICS-LABA daily** maintenance

Seretide

(Fluticasone/Salmeterol)

500mcg

1 inhalation OD

500mcg/50mcg

Fluticasone propionate
Medium dose = **259-500/day**

OR

Relvar

(Fluticasone/vilanterol)

100mcg

1 inhalation OD

100mcg/25mcg

Fluticasone Furate
Medium dose = **100/day**

STEP 5

Uncontrolled Symptoms
and/or exacerbations despite STEP4 treatment

REFER TO SECONDAY CARE

- Consider add-on therapy including **LAMA** (e.g. **TRELEGY**)
- Step-Up treatment

TRACK 1

AIR ONLY

High dose ICS **daily** + **PRN**

Symbicort
(Budesonide/Formoterol)
160mcg/4.5mcg

4 inhalation BD + PRN
Max 12 inhalations/day

Budenoside
High dose = **> 800/day**

TRACK 2

RELIEVER

SABA PRN

Ventolin
(Salbutamol)

1-2 puffs PRN
Max 8 puffs/day

+

CONTROLLER

High dose **ICS-LABA daily** maintenance

Seretide
(Fluticasone/Salmeterol)
500mcg

1 inhalation OD
500mcg/50mcg

Fluticasone propionate
High dose = **>500/day**

OR

Relvar
(Fluticasone/vilanterol)
200mcg

1 inhalation OD
200mcg/25mcg

Fluticasone Furate
High dose = **200/day**

Trelegy

Contains 3 long-acting medicines:

- Fluticasone furoate (**ICS**)
- Umeclidinium (**LAMA**)
- Vilanterol (**LABA**)

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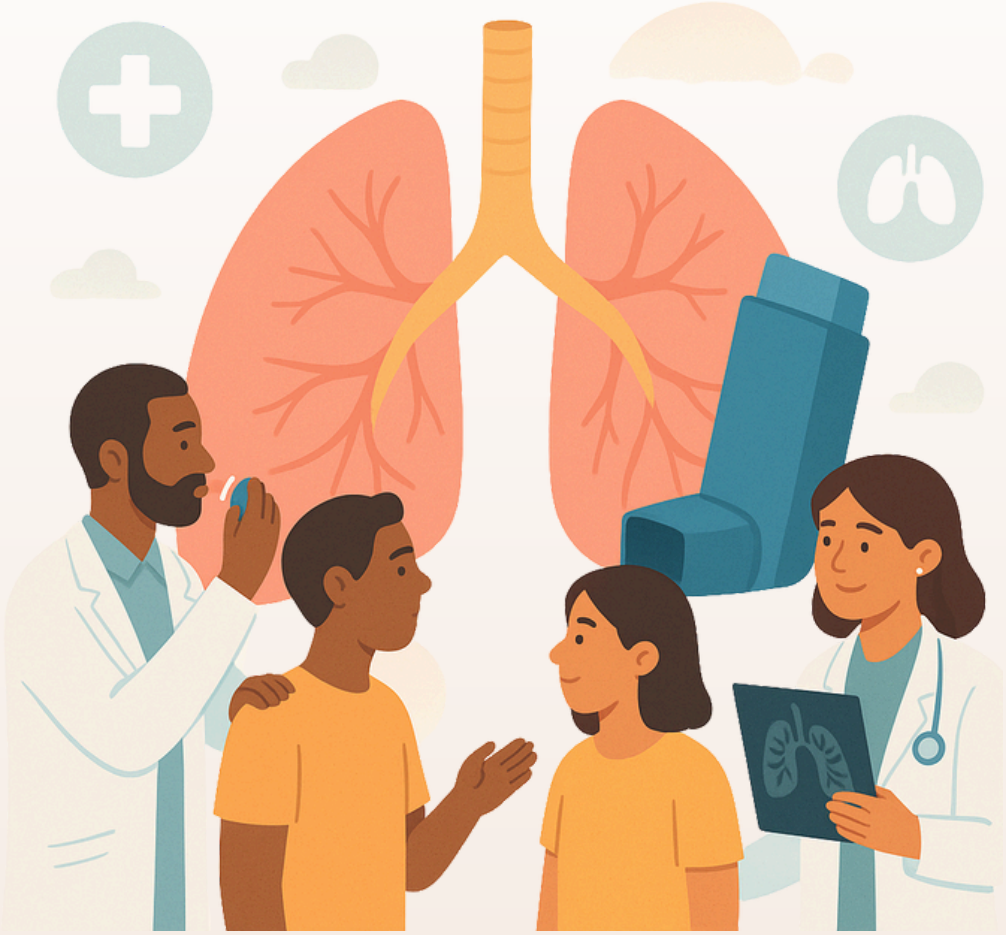

CHILDREN 6-11 YEARS

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STEP 1

Infrequent asthma symptoms ≤ 1-2 days/week

RELIEVER
SABA PRN

Ventolin
(Salbutamol)

1-2 puffs PRN
Max 4 puffs/day

+

CONTROLLER
Low dose ICS whenever SABA is taken **or** daily

Flixotide
(Fluticasone Propionate)
50mcg

1 puff BD or PRN
Max 8 puffs/day

Fluticasone propionate
Low dose = **50-100/day**

OR

Pulmicort
(Budesonide)
100mcg

1 inhalation BD or PRN
Max 7 puffs/day

Budesonide
Low dose = **100-200/day**

STEP 2

Asthma symptoms 2-5 days/week

RELIEVER
SABA PRN

Ventolin
(Salbutamol)

1-2 puffs PRN
Max 4 puffs/day

+

CONTROLLER
Low dose ICS whenever SABA is taken or daily

Flixotide
(Fluticasone Propionate)
50mcg

1 puff BD
Max 8 puffs/day

Fluticasone propionate
Low dose = **50-100/day**

OR

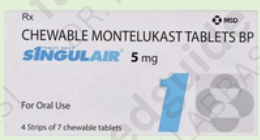
Pulmicort
(Budesonide)
100mcg

1 inhalation BD
Max 7 puffs/day

Budesonide
Low dose = **100-200/day**

OR

Singulair
(Montelukast)
5mg



5mg OD
Chewable

STEP 3

Symptoms most days **or** night time ≥ 1 time/week

TRACK 1

AIR ONLY

Low dose ICS **daily** + **PRN**

Symbicort
(Budesonide/Formoterol)
80mcg/4.5mcg

1 inhalation BD + PRN
Max 8 inhalations/day

Budenoside
Low dose = **100-200/day**

TRACK 2

RELIEVER

SABA PRN

Ventolin
(Salbutamol)

1-2 puffs PRN
Max 4 puffs/day

CONTROLLER

Low dose **ICS-LABA daily**

Seretide
(Fluticasone/Salmeterol)
100mcg

1 inhalation BD
100mcg/50mcg

Fluticasone propionate
Low dose = **50-100/day**

OR

Flixotide
(Fluticasone Propionate)
100mcg

1 puff BD

Fluticasone propionate
Medium dose = **100-200/day**

OR

Pulmicort
(Budesonide)
1oomcg

2 inhalation BD

Budesonide
Medium = **200-400/day**

STEP 4

Daily symptoms **or** night time ≥ 1 time/week **with** Low PFT

TRACK 1

AIR ONLY

Low dose ICS **daily** + **PRN**

Symbicort
(Budesonide/Formoterol)
80mcg/4.5mcg

1 inhalations BD + PRN
Max 8 inhalations/day

Budenoside
Medium dose = **100-200/day**

TRACK 2

RELIEVER

SABA PRN

Ventolin
(Salbutamol)

1-2 puffs PRN
Max 4 puffs/day

CONTROLLER

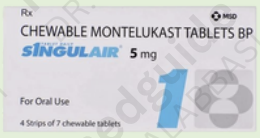
Medium dose **ICS-LABA daily** maintenance + **LTRA**

Seretide
(Fluticasone/Salmeterol)
100mcg

1 inhalation BD
100mcg/50mcg

Fluticasone propionate
Medium dose = **100-200/day**

Singulair
(Montelukast)
5mg



5mg OD
Chewable

STEP 5

Uncontrolled Symptoms
and/or exacerbations despite STEP4 treatment

REFER TO SECONDAY CARE

- Consider add-on therapy including **LAMA**
- Step-Up treatment

TRACK 1

AIR ONLY

High dose ICS **daily** + **PRN**

Symbicort
(Budesonide/Formoterol)
80mcg/4.5mcg

2 inhalation BD + PRN
Max 8 inhalations/day

Budenoside
High dose = **> 400/day**

TRACK 2

RELIEVER
SABA PRN

Ventolin
(Salbutamol)

1-2 puffs PRN
Max 4 puffs/day

+

CONTROLLER
High dose **ICS-LABA daily** maintenance + **LTRA**

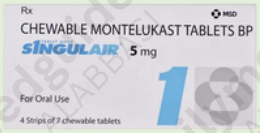
Seretide
(Fluticasone/Salmeterol)
100mcg

2 inhalation BD
100mcg/50mcg

Fluticasone propionate
High dose = **>200/day**

+

Singulair
(Montelukast)
5mg



5mg OD
Chewable

Don't Forget!

ASSESSING ASTHMA SYMPTOM CONTROL

In adults, adolescents and children 6-11 years

In the past 4 weeks (or since last review) has the patient had:

Daytime asthma symptoms more than twice/week?	☐ Yes	☐ No
Any **night waking** due to asthma?	☐ Yes	☐ No
SABA reliever for symptoms more than twice/week?	☐ Yes	☐ No
Any a**ctivity limitation** due to asthma?	☐ Yes	☐ No

Well controlled	**Partly controlled**	**Uncontrolled**
none = 0	1-2 of these	3-4 of these

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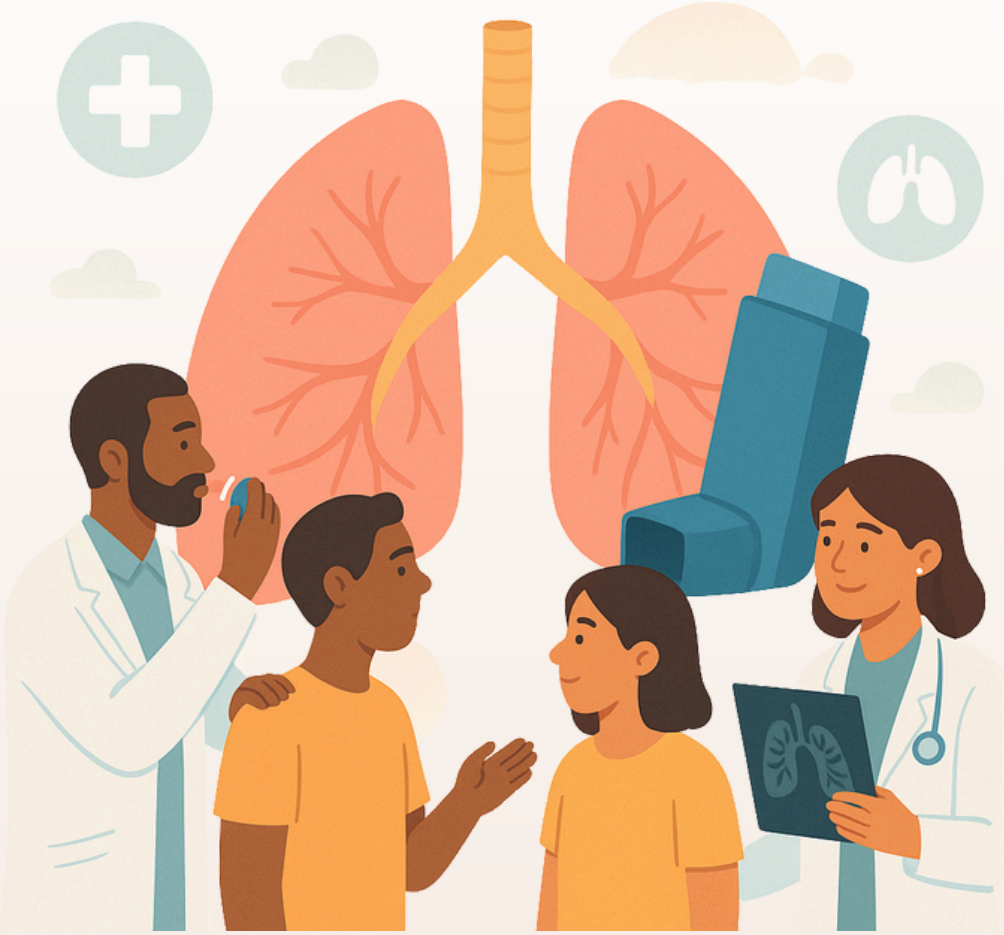

ASTHMA MEDICATIONS
GLOSSARY

SOURCE:
GINA GUIDELINES 2024

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ASTHMA MEDICATIONS GLOSSARY

VENTOLIN
Salbutamol

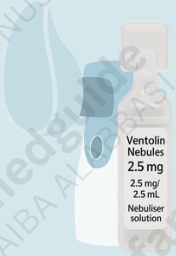
RELIEVER
SABA - SHORT ACTING BETA AGONIST

EVOHALER

- **≥ 4 years**
- **100mcg**
- Adults: Max **8 puffs/day** (800mcg)
- Children: Max **4 puffs/day** (400 mcg)
- Capacity: 200 doses/canister

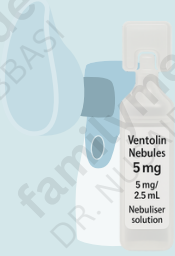
DISKUS

- **≥ 4 years**
- **200mcg**
- Maximum: **4 puffs/day**
- Capacity: 60 doses/device



NEBULES

- **≥ 2 years** and **>10 Kg**
- **2.5mg** in 2.5mL
- Every **4-6 hours** as needed
- **Dilute** in 2mL NS
- 2-12 years: max **4-6 doses/day**



NEBULES

- **≥ 12 years**
- **5mg** in 2.5 mL
- Every **4-6 hours** as needed
- ≥ 12 years: max **4 doses/day**

FLIXOTIDE
Fluticasone propionate

CONTROLLER
ICS - INHALED CORTICOSTEROID

EVOHALER

- **≥ 1 year**
- **Twice Daily** (BID)
- **50mcg, 125mcg, 250mcg**
- Maximum: 2000mcg/day
- Capacity: 120 doses/canister

DISKUS

- **≥ 4 years**
- **50mcg, 100mcg, 250mcg, 500mcg**
- Maximum: 2000mcg/day
- Capacity: 60 doses/device

DAILY MAXIMUM DOSE

ADULTS & ADOLESCENTS

Low	Medium	High
100-250	> 250-500	> 500

CHILDREN 6-11 YEARS

Low	Medium	High
50-100	> 100-200	> 200

< 2 YEARS OLD

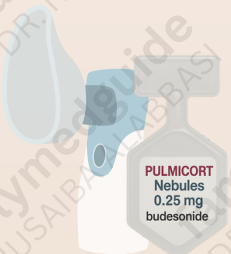
50mcg BD

PULMICORT
Budesonide

CONTROLLER
ICS - INHALED CORTICOSTEROID

TURBOHALER

- **≥ 6 year**
- **Twice Daily** (BID)
- **100mcg, 200mcg, 400mcg**
- Maximum: 2400mcg/day
- Capacity: 200 doses/canister



NEBULES

- **≥ 1 year**
- **0.25mg/2mL**
- No dilution required
- Maximum: **1mg/day**

NEBULES

- **≥ 1 year**
- **0.5mg/2mL**
- No dilution required
- Maximum: **1mg/**
- Adults max 2mg/day

DAILY MAXIMUM DOSE

ADULTS & ADOLESCENTS

Low	Medium	High
200-400	> 400-800	> 800

CHILDREN 6-11 YEARS

Low	Medium	High
100-200	> 200-400	> 400

ASTHMA MEDICATIONS GLOSSARY

SYMBICORT
Budesonide + Formoterol

CONTROLLER
COMBINATION **ICS + LABA**

SMART
Single Maintenance & Reliever Therapy.

TURBOHALER

- **≥ 6 years**
- **PRN, OD or BID**
- **80mcg**/4.5mcg (60 doses/device)
- **160mcg**/4.5mcg (120 doses/device)
- Maximum: **8 inhalations per day**

DAILY MAXIMUM DOSE

ADULTS & ADOLESCENTS

Low	Medium	High
200-400	> 400-800	> 800

CHILDREN 6-11 YEARS

Low	Medium	High
100-200	> 200-400	> 400

SERETIDE
Fluticasone propionate + Salmeterol

CONTROLLER
COMBINATION **ICS + LABA**

EVOHALER

- **≥ 4 year**
- **Twice Daily** (BID)
- **50mcg, 125mcg, 250mcg**
- Maximum: 1000mcg/day

DISKUS

- **≥ 4 years**
- **Twice Daily** (BID)
- **100mcg, 250mcg, 500mcg**
- Maximum: 2000mcg/day (adults)
- Capacity: 60 doses/device

DAILY MAXIMUM DOSE

ADULTS & ADOLESCENTS

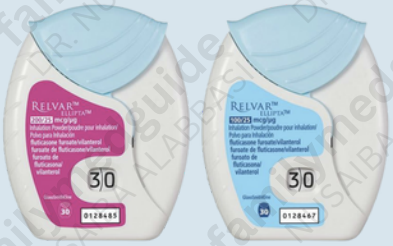
Low	Medium	High
100-250	> 250-500	> 500

CHILDREN 6-11 YEARS

Low	Medium	High
50-100	> 100-200	> 200

RELVAR
Fluticasone Furate + Vilanterol

CONTROLLER
COMBINATION **ICS + LABA**



- **≥ 12 year**
- **Once Daily** (OD)
- **100mcg/25mcg, 200mcg/25mcg**
- Maximum: 200mcg/day
- Capacity: 30 doses/canister

ELLIPTA

DAILY MAXIMUM DOSE

ADULTS & ADOLESCENTS

Low	Medium	High
100	100	200

ASTHMA MEDICATIONS GLOSSARY

TRELEGY
Fluticasone Furate + Vilanterol + Umeclidinium

CONTROLLER
COMBI. **ICS + LABA + LAMA**

- **≥ 12 year**
- **Once Daily** (OD)
- **100mcg, 200mcg**
- Maximum: 200mcg/day
- Capacity: 30 doses/canister

ELLIPTA

DAILY MAXIMUM DOSE

ADULTS & ADOLESCENTS

Low	Medium	High
100	100	200

SINGULAIR
MONTELUKAST

CONTROLLER
ORAL ADD-ON TREATMENT

USE

- **Asthma:** ≥ 1 year
- **EIB*:** ≥ 6 years
- **Allergic rhinitis:**
  - **Seasonal:** ≥ 2 years
  - **Perennial:** ≥ 6 months

TIMING/FREQUENCY

- **Asthma:** once daily, in the evening
- **EIB*:** once daily, at least 2 hours before exercise
- **Allergic rhinitis:** once daily, morning or evening

FORMS

TABLETS

≥ 15 years 10mg once daily HS in the evening

CHEWABLE

≥ 6 years 5mg once daily in the evening

ORAL GRANULES

≥ 1 year 4mg once daily in the evening

*Exercise induced asthma

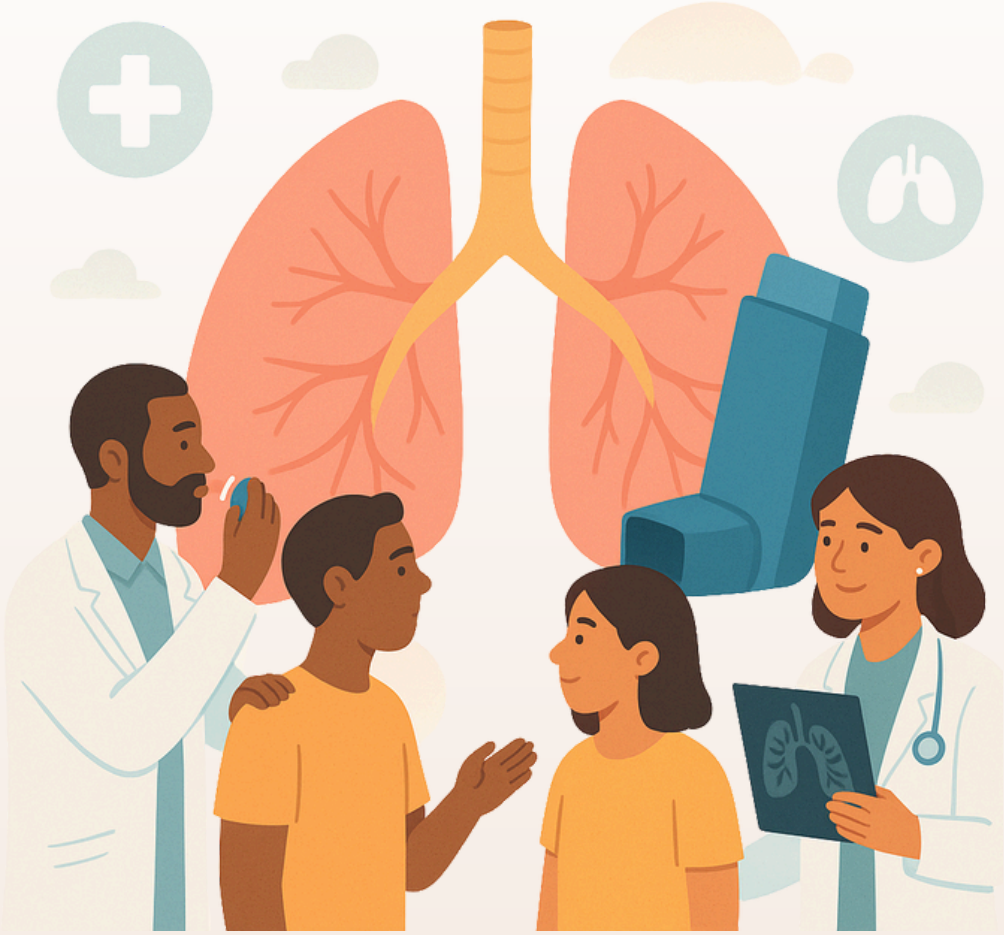
Don't Forget !

MINIMIZE ADVERSE EFFECTS OF MEDICATION

Reduce the potential for local and/or systemic side-effects of inhaled medications by:

- Ensuring correct inhaler technique
- Reminding patients to **rinse and spit out after using ICS**
- Finding each patient's **minimum effective dose of ICS-containing therapy**
  - the lowest dose that will, in conjunction with an action plan, maintain good symptom control and minimize exacerbations

ASTHMA 2024 GUIDELINES



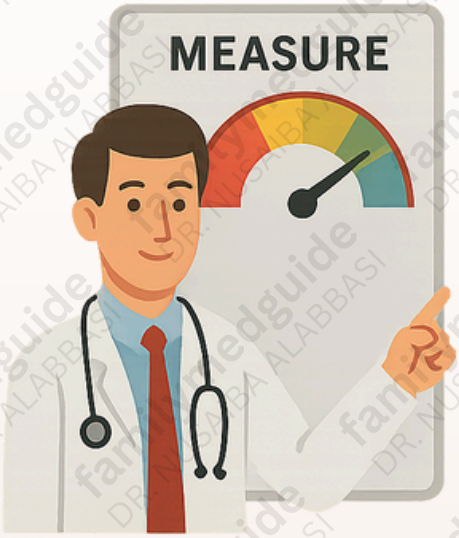
PRIMARY CARE MANAGEMENT OF EXACERBATION

Adults, adolescents, children 6-11 years

SOURCE:
GINA GUIDELINES 2024

@familymedguide - By Dr Nusaiba AlAbbasi

CHECK SEVERITY



Measure

- ☐ Ability to speak
- ☐ Use of accessory muscles
- ☐ Respiratory Rate (RR)
- ☐ O2 Saturation (SpO_2) on RA
- ☐ PEF; if possible

Mild-Moderate	Severe	Life-threatening
• Talks in phrases • Prefers sitting to lying • Not agitated • RR increased • Accessory muscles not used • HR 100-120 bpm • SpO2 on RA 90-95% • PEF > 50% predicted or best	• Talks in words • Sits hunched forwards • Agitated • RR >30/min • Accessory muscles in use • HR > 120 bpm • SpO2 on RA < 90% • PEF ≤ 50% predicted or best	• Drowsy • Confused • or silent chest

Start treatment immediately
do not delay while assessing

Check for asthma-related death factors:

- ☐ History of near-fatal asthma requiring intubation.
- ☐ Hospital or ER visit for asthma in the past year.
- ☐ Recent or current use of oral corticosteroids.
- ☐ Not using ICS
- ☐ Overuse of SABAs *(e.g., >1 salbutamol canister/month or nebulized use).*
- ☐ Poor adherence to ICS or lack of an asthma action plan.
- ☐ History of psychiatric or psychosocial issues.
- ☐ Food allergy with asthma.
- ☐ Multiple comorbidities *(e.g., pneumonia, diabetes, arrhythmias).*

PRIMARY CARE MANAGEMENT OF

EXACERBATION

STEP 1 OXYGEN - if needed

ADULTS

Target SpO_2: **93–95%**

- Nasal cannula: **≤ 6 L/min**
- Face mask: **6-10 L/min**

CHILDREN

Target SpO_2: **≥ 94%**

- Nasal Cannula: **1-2 L/min**
- Face mask: **6-10 L/min**

STEP 2 SABA - via nebulizer

VENTOLIN

≥ 12 years	2-12 years	< 2 years
5mg	**2.5mg**	**1.25mg**
Max. **20-30** mg/day	Max. **20-30** mg/day	Max. **10-12.5** mg/day

Every 20 minutes x3 doses, then **q1–4 hours PRN**

Nebulize with **2–3 mL** of **normal saline**

STEP 3 SAMA - via nebulizer

ATROVENT

Combine with SABA during **moderate–severe** exacerbations

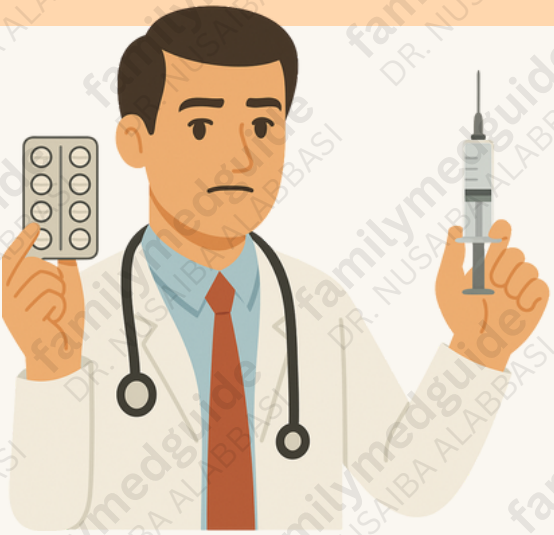
≥ 6 years & adults	1-5 years
0.5mg (1 mL of 0.02%)	**0.25mg** (0.5 mL of 0.02%)
Max. **2-3** mg/day	Max. **1-2** mg/day

Every 20 minutes x3 doses, then **q1–4 hours PRN**

Nebulize with **2–3 mL** of **normal saline**

STEP 4 CONRTICOSTEROIDS

ORAL CS in **moderate** exacerbations and **IV** CS in **severe** cases



ADULTS

Prednisone	**PO**
40-50 mg OD	
Duration: **5-7 days**	
Methylprednisolone	**IV**
60–80 mg/day	

CHILDREN

Prednisolone	**PO**
1-2 mg/kg (max 40 mg)	
Duration: **5-7 days**	
Methylprednisolone	**IV**
1-2 mg/kg/day	

STEP 5 REFER to ER

Poor response

< 90–92%

Very tired

Silent chest

- ☐ Poor response to initial treatment
- ☐ SpO_2 remains < 90–92% despite oxygen
- ☐ Unable to speak in full sentences or very tired
- ☐ Silent chest, cyanosis, or altered consciousness

STEP 6 FOLLOW UP

Action Plan

Inhaler Use

Maintenance therapy

- ☐ Ensure patient has an asthma action plan
- ☐ Educate on inhaler use and trigger avoidance
- ☐ Review maintenance therapy (e.g., ICS)

Guided by evidence, Shared by heart.

From a passionate family medicine physician to another.

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REFERENCE.
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