

Asthma – History and Assess Severity

Asthma Symptoms

Wheeze
 Chest tightness
 Increased work of breathing
 Cough-variant = cough worse:
 At night
 With exercise
 In cold air
 Hx of or FH of atopy

Current Episode

1st time* or recurrence?
 Associated URI?
 Used meds, how much, how often, most recent use?
 Supposed to use meds but not using currently?
 Using spacer with MDIs?

Pulmonary Index Score

Score	0	1	2	3
RR if < 6yo	≤ 30	31-45	46-60	> 60
RR if ≥ 6yo	≤ 20	21-35	36-50	> 50
Wheezing	None	End Expiratory	Throughout Expiration	Insp & Exp or quiet / no air movement
Insp:Exp Ratio	2:1	1:1	1:2	1:3
Accessory muscle use	None	+	++	+++
O2 saturation	99-100%	96-98%	93-95%	< 93%

Mild < 7

Moderate 7-11

Severe ≥ 12

* May be viral-induced reactive airways or bronchiolitis if not recurrent, may or may not respond to bronchodilators

High risk pt: ↑ # ED visits, admissions, ICU admissions, h/o intubation

Asthma Acute Exacerbation

*Discharge Criteria

- No-minimal wheeze
- Good air movement
- Not tachypneic
- No accessory muscles
- Pulse ox 94-95%+

Severe symptoms
or high risk for
respiratory failure
or fatal asthma

Albuterol nebulized 5mg, keep refilling chamber to give continuously x 3 doses
Consider adding Ipratropium nebulized (0.25mg 0-4yo, 0.5mg 5yo+) to each albuterol x 3 doses
Oral prednisone 2 mg/kg (max 60 mg) or dexamethasone 0.6 mg/kg (max 16 mg)
or IV methylprednisolone 2 mg/kg (max 60 mg)
Call ambulance to send to ED for further management
If transfer delayed, refer to [Status Asthmaticus](#) algorithm

Moderate
symptoms

Albuterol nebulized 2.5mg 0-4yo, 5mg 5yo+
Consider adding Ipratropium nebulized 0.25mg 0-4yo, 0.5mg 5yo+

Mild symptoms

or

Albuterol 4 puffs
MDI w/spacer 0-4yo,
8 puffs 5yo+

Reassess**

**If have given 3 neb treatments &
still cannot discharge, send to ED

2nd-3rd cycle

Not able to
discharge*

1st cycle

Oral prednisone 2 mg/kg
(max 60 mg) or
dexamethasone 0.6 mg/kg
(max 16 mg)

Improved

See next slide

Acute Exacerbation Discharge Instructions

- If given oral glucocorticoid
 - Dexamethasone
 - Consider repeat dose in 36-48 hours
 - Prednisone
 - Prescribe 1 mg/kg/day for 4 more days (start next day) to complete short course
- Albuterol MDI with spacer or home nebulizer
 - Use as often as every 2-3 hours x 8 hours, then every 4-6 hours x 24-48 hours, then every 4 hours as needed only
 - 2 puffs for 0-4yo, 4 puffs for 5yo+, 2.5 mg neb for 0-4yo, 5 mg for 5yo+
 - If require more often than this, return for further evaluation
- Start inhaled corticosteroid (ICS) if not already using
 - Explain differences between controller med (ICS) and prn med (SABA = albuterol)
 - For moderate persistent asthma, SMART therapy is another option (see next slides)
- Review return precautions
- Arrange follow-up with PCP

Spacer	Small Mask	Med Mask	Large Mask	No Mask
Color	Orange	Yellow	Blue	Blue
Age	0-18 mos	1-5 years	5 yrs +	5-10 yrs +

Asthma Steps

Step	1	2	3	4
Description	Intermittent	Mild persistent	Moderate persistent	Severe persistent
Symptoms 0-4yo 5yo+	Daytime sx \leq 2x/wk No night awakenings \leq 1x/mo No activity interference Oral steroids /acute exacerbations $<$ 1x/yr Normal FEV1	Daytime $>$ 2 but $<$ 7x/wk Night awaken 1-2x/mo 3-4x/mo Minor activity interfere Oral steroids \geq 2 in 6mo or \geq 4 wheezing eps / yr lasting $>$ 1 day Exacerbations \geq 2/yr Normal FEV1	Daily symptoms Night awaken 3-4x/mo $>$ 1x/wk but not nightly Daily SABA use Some activity interfere Oral steroids \geq 2 in 6mo or \geq 4 wheezing eps / yr lasting $>$ 1 day Exacerbations \geq 2/yr FEV1 60-80% predicted	Sx throughout day Night awaken $>$ 1x/wk most nights Several SABA doses/day Limits activity Oral steroids \geq 2 in 6mo or \geq 4 wheezing eps / yr lasting $>$ 1 day Exacerbations \geq 2/yr FEV1 $<$ 60% predicted
SABA	All steps include SABA as needed			
ICS or LTRA or both	0-4yo add short course daily ICS with resp infections	Daily low-dose ICS or daily LTRA	Daily & prn low-dose SMART or daily low-dose ICS+LTRA or daily medium-dose ICS	Daily & prn med-dose SMART or daily med- dose ICS +/- LTRA

SABA: short-acting beta-agonist
ICS: inhaled corticosteroid

SMART: single maintenance and reliever therapy = LABA + ICS
LTRA: leukotriene receptor antagonist

Specific meds
next slide

Asthma Medications for Home Use

Class	Medication	Formulation	0-4yo dose	5-11yo dose
SABA	Albuterol MDI	90 mcg/puff	2 puffs w/spacer q4hrs prn	2 puffs w/spacer q4hrs prn
	Albuterol Neb	Multiple available	1.25-2.5mg q4hrs prn	2.5-5mg q4hrs prn
ICS	Beclomethasone	40 or 80 mcg/puff	N/A	Low: 40-80 BID, Med: 80-160 BID
	Budesonide	90 or 180 mcg/inhalation	N/A	Low: 90-180 BID, Med: 180-360 BID
	Budesonide Neb	Multiple available	Low: 0.25-0.5mg daily or div BID Med: 0.5-1mg daily or div BID	Low: 0.5mg daily or div BID Med: 1mg daily or div BID
	Ciclesonide	80 or 160 mcg/puff	N/A	Low: 80-160 daily, Med: 160-320
	Fluticasone	44, 110 or 220 mcg/puff	Low: 44-88 BID, Med: 88-196 BID or 110 in AM, 220 in PM	
	Mometasone	50, 100, 200 mcg/puff	N/A	Low: 50 BID, Med: 100-150 BID
LTRA	Montelukast	4mg or 5mg chew tab, 4 mg packet, 10mg tablet	12mo-5yo: 4mg daily in evening	6-14yo: 5mg daily in evening ≥ 15yo: 10mg daily in evening
	Zafirlukast	10 or 20mg tablet	N/A	5-11yo: 10mg BID, ≥12yo: 20mg BID
SMART	Symbicort brand name	Budesonide 80 or 160 mcg + formoterol 4.5mcg	N/A	Low: 80/4.5, 1 puff daily-BID and prn (max 8 puffs/day), Med 160/4.5