



ASTHMA	ASTHMA EXACERBATION
A common, chronic inflammatory disorder of the airways characterized by reversible airflow obstruction , airway hyper-responsiveness , and recurring symptoms of wheezing, coughing, chest tightness, and shortness of breath.	A potentially life-threatening acute worsening of symptoms causing significant distress necessitating attention by healthcare professionals or administration of systemic corticosteroids.
<ul style="list-style-type: none"> ➤ Common triggers: viral respiratory tract infections, suboptimal baseline control of asthma, and allergen exposures. ➤ Asthma exacerbations are the leading cause of pediatric hospitalizations and account for 3-7% of pediatric ED visits. ➤ 50% of children presenting to the ED with an asthma exacerbation are < 5 years old. 	



IMMEDIATE & OBJECTIVE ASSESSMENT OF THE ASTHMA EXACERBATION SEVERITY

CLINICAL FEATURES FOR THE DIFFERENT CLASSIFICATIONS OF ASTHMA SEVERITY				
	MILD	MODERATE	SEVERE	IMPENDING RESP. FAILURE
MENTAL STATUS	Normal	May be agitated	Agitated	Drowsy, confused (signs of cerebral hypoxemia)
ACTIVITY & FEEDING	Normal activity, exertional dyspnea	↓ activity, ↓ feeding (infants)	↓ activity, stops feeding	Unable to feed
SPEECH	Normal speech	Speaks in phrases	Speaks in words	Unable to speak
WORK OF BREATHING	Minimal intercostal retractions	Intercostal and substernal retractions	Significant respiratory distress . Involves all accessory muscles, nasal flaring, paradoxical thoraco-abdominal movement.	Marked respiratory distress at rest . Involves all accessory muscles, nasal flaring, paradoxical thoraco-abdominal movement.
CHEST AUSCULTATION	Moderate wheeze	Pan-expiratory and inspiratory wheeze	Audible wheeze without stethoscope	Silent chest (no air entry), absence of wheeze
SpO₂ ON R/A	> 94%	91-94%	< 90%	< 90%
PEAK FLOW VS. PERSONAL BEST	> 80%	60-80%	< 60%	Unable to perform

PEDIATRIC RESPIRATORY ASSESSMENT MEASURE (PRAM) SCORING			
Criteria	Description	Score	Important tips
O₂ saturation	≥ 95%	0	The patient must be breathing room air for this measurement.
	92-94%	1	
	< 92%	2	
Suprasternal retractions	Absent	0	Visual assessment.
	Present	2	
Scalene retractions	Absent	0	Palpable assessment, as scalenes are deep muscles that cannot be visualized.
	Present	2	
Air entry	Normal	0	Use lung fields to grade air entry. If asymmetric, the rating is determined by the most severely affected field.
	↓ at bases	1	
	Widespread ↓ Minimal or absent	2 3	
Wheezing	Absent	0	≥ 2 auscultation zones must be affected. If there is asymmetry, the rating is determined by the most severely affected zones.
	Expiratory only	1	
	Inspiratory ± expiratory Audible without stethoscope or silent chest (no air entry)	2 3	

LUNG FIELDS

Left anterior: LUL & LLL
Left posterior: LUL & LLL
Right anterior: RUL & RML
Right posterior: RUL & RLL

PRAM SCORE	SEVERITY
0-3	MILD
4-7	MODERATE
8-12	SEVERE

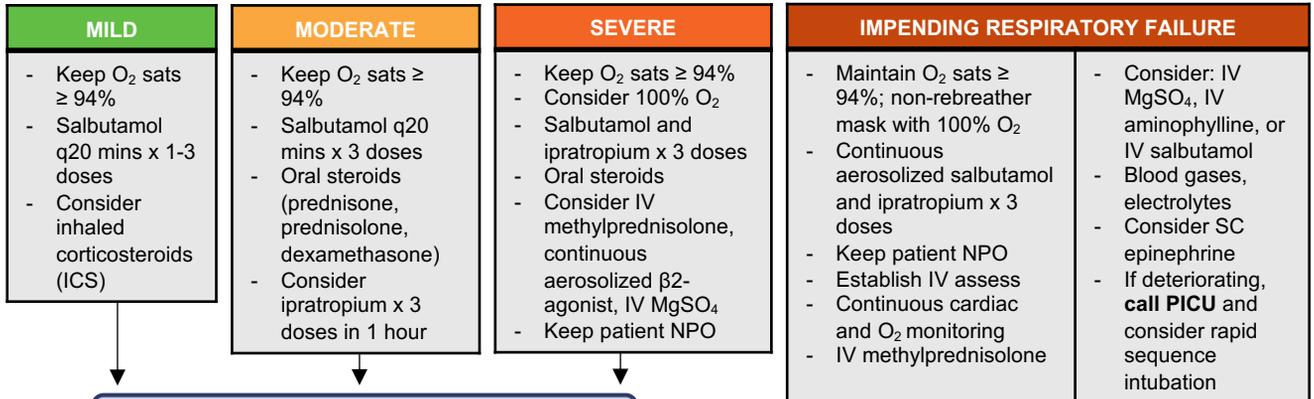


MANAGEMENT ALGORITHM

INITIAL ASSESSMENT

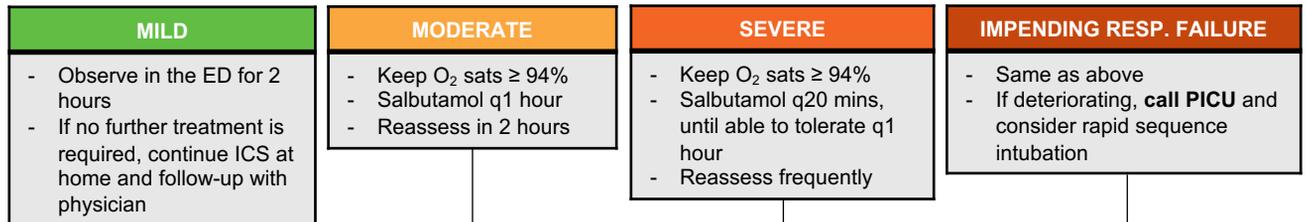
- **Vital signs, pulse oximetry**
- **Spirometry:** peak flows should be compared to normal values or the child's personal best, if known
- **Focused medical history:** previous meds, allergies, risk factors for ICU admission (previous ICU admissions, intubation, previous life-threatening asthma exacerbations, etc.)
- **Physical exam:** LOC, speech, activity, accessory muscle use, air entry, wheezing (*see previous page*)
- **Categorize disease severity:** Pediatric Respiratory Assessment Measure (PRAM) (*see previous page*)
- Ancillary tests, such as chest x-rays and blood gases, are not routinely recommended

THE SEVERITY OF THE ASTHMA EXACERBATION DETERMINES THE INITIAL TREATMENT (1 HOUR)

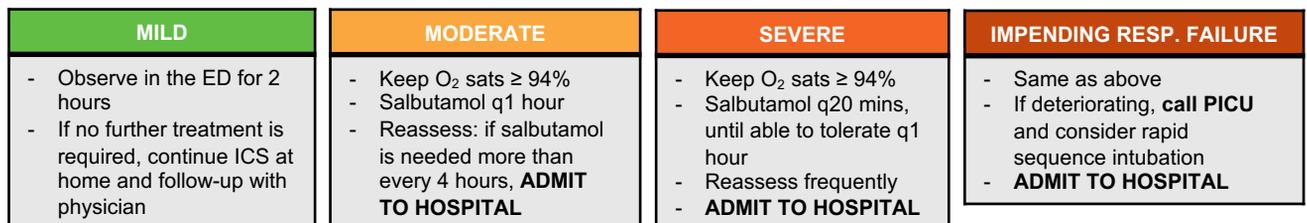


Reassess the patient 1 hour after initial treatment & re-categorize severity

Effective medical intervention decreases respiratory distress and improves oxygenation.



Reassess the patient & re-categorize severity. What is the severity after 2 hours of treatment?



EMERGENCY DEPARTMENT DISCHARGE CRITERIA

- Use of β₂-agonist less often than q4 hours
- SpO₂ ≥ 94% on room air
- Improved air entry
- Minimal or no signs of respiratory distress

FOLLOW-UP PLAN

- Complete course of oral steroids
- Use of β₂-agonist q4 hours, then prn
- Review inhaler techniques
- F/U with GP
- Referral to specialist if needed