

**Upper & Lower Airway Obstruction & Lung Tissue Disease**

**Upper:** nose, paranasal sinuses, tonsils, throat, pharynx, larynx, trachea

**Common Illnesses:** Croup, Influenza, Foreign Body Aspiration, Anaphylaxis, Tracheitis

**S&S:** ↑ inspiratory effort with retractions, stridor, snoring, gurgling (secretions), barking cough, hoarseness, drooling, poor chest rise, poor A/E

**Lower:** lower portion of trachea, bronchi, bronchioles, airways, alveoli

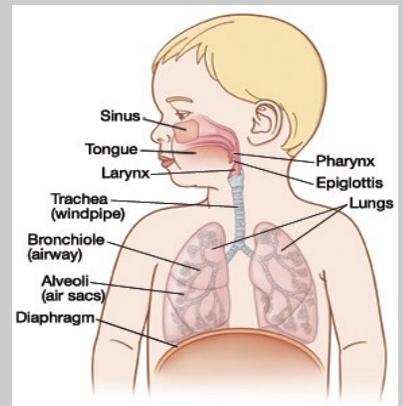
**Common Illnesses:** Asthma, Bronchiolitis, Trauma (less common)

**S&S:** Expiratory wheeze & retractions, prolonged expiratory phase, cough, ↑RR/effort

**Lung Tissue Disease:** lungs become stiff due to fluid accumulation in parenchyma or lung tissue

**Common Illnesses:** Pneumonia, Trauma, Allergic Reaction, Inflammation, Toxins

**S&S:** grunting, crackles, ↓A/E, ↑respiratory effort, accessory muscle use, hypoxemia, marked tachypnea, ↑HR



**Asthma (Lower)**

**PRAM** score classifies severity of respiratory distress into mild, moderate & severe ([Ontario Clinical Pathway](#))

Mild Asthma (PRAM 0-3)	Moderate Asthma (PRAM 4-7)	Severe Asthma (PRAM 8-12)
<p><b>Salbutamol:</b> via metered dose inhalers (MDI's) &amp; spacers rather than nebulizers</p> <p><b>Oral Corticosteroids:</b> evidence of benefits for mild respiratory distress symptoms is lacking</p>	<p><b>Salbutamol:</b> via MDI &amp; spacers q20mins x3 doses total</p> <p><b>Oral Corticosteroids:</b> Dexamethasone or Prednisone just before or after bronchodilator ↓'s resp distress within 2-6 hours of treatment &amp; ↓hospitalization</p> <p><b>Ipratropium:</b> 2-3 doses plus Salbutamol &amp; oral corticosteroids within first 60 mins ↑ clinical improvement &amp; ↓admissions</p>	<p><b>Strong Evidence:</b> asthmatics improve faster when bronchodilators are continuous via aerosol over 60-180 mins compared to intermittently (q20mins)</p> <p><b>Magnesium Sulfate:</b> ↑improvement for asthmatics who don't respond to repeat or continuous bronchodilators or early corticosteroids, Dose: 40-50 mg/kg</p>

**Bronchiolitis (Lower)**

- Acute inflammation of airways, edema, bronchospasm, ↑ secretions causing wheezing, cough, ↑ resp. effort
- Supportive care is key, rehydration may be needed, FiO<sub>2</sub> may be needed to keep sats ↑90%, suction nares prn
- **Generally Ineffective Meds:** Salbutamol (about 25% will respond), oral bronchodilators, hypertonic saline, Ipratropium bromide, inhaled or oral corticosteroids (on their own), antibiotics (many babies with "rule out sepsis" need antibiotics started in case illness is bacterial), equivocal evidence that Dexamethasone & Epi given close together may ↓ hospital admissions
- **Nebulized Bronchodilators:** if improvement, should observe closely prior to D/C home

**Croup (Upper)**

- Acute onset of barking cough, x-rays rarely needed to confirm croup, antibiotics are not effective (viral)
- **Mild:** no inspiratory stridor or indrawing while at rest, can safely D/C home without further observation
- **Moderate:** inspiratory stridor & mild/moderate indrawing at rest, should observe until it resolves (a few hours)
- **Severe:** stridor (biphasic), severe indrawing, agitation, treat with nebulized Epi, FiO<sub>2</sub> & give oral Dexamethasone
- **Excellent evidence for giving an oral dose of Dexamethasone 0.6 mg/kg, Max Dose: 12 mg (equivalent to 60 mg Prednisone)**

**Pneumonia (Lung Tissue Disease)**

- Infectious pneumonia caused by viral, bacterial or fungal inflammation of alveoli
- **Diagnostics:** Chest X-ray, blood gases, viral studies & swabs, blood cultures, CBC
- Antibiotics within first hour of medical contact for infectious pneumonia
- Treat wheezing with Salbutamol by MDI or nebulizer
- Reduce metabolic demand such as fever which can help ↓ work of breathing & FiO<sub>2</sub>

**Influenza vs Cold (Upper)**

Signs & Symptoms	Influenza	Cold
Symptom Onset	Abrupt	Gradual
Fever	Usual	Rare
Aches/Chills	Usual/Fairly Common	Slight/Uncommon
Fatigue/Weakness	Usual	Sometimes
Sore Throat	Sometimes	Common
Sneezing/Stuffiness	Sometimes	Common
Chest Discomfort	Common	Mild to moderate
Headache	Common	Rare