Pre-school wheeze - Emergency Management in Children - Flowchart

Pre-school child presents to ED service with wheeze

Initial rapid severity assessment

Mild
- Salbutamol (1 dose)

Moderate
- Salbutamol burst (3 doses)

Severe
- Salbutamol nebuliser (continuous)

Secondary assessment concurrently with bronchodilator

Mild-moderate
- Salbutamol as required
- Reassess, stretch doses as able

≥ 1 hour between salbutamol doses?

Suitable for stepdown to continue management in SSU or Paediatric Ward

≥ 3 hours between salbutamol doses?

Yes
- Continue salbutamol as required

No
- Consider discharge home with advice

Consider seeking senior emergency/paediatric advice per local protocols

Severe
- Salbutamol as required
- Reassess, stretch doses as able

≥ 1 hour between salbutamol doses?

Responding to treatment?

Yes
- Yes
- Refer to inpatient team

No
- No
- Call RSQ if no paediatric critical care facility onsite

Life-threatening
- Salbutamol as required
  - Consider oral steroids
  - Reassess

≥ 1 hour between salbutamol doses?

Yes

No

Refer to critical care

For more information refer to the Statewide Paediatric Guideline: Pre-school Wheeze - Emergency Management in Children.
# Pre-school Wheeze - Emergency Management in Children – Medications

## Inhaled salbutamol dosing for the treatment of wheeze in pre-school children

<table>
<thead>
<tr>
<th>Method</th>
<th>&lt; 20 kg</th>
<th>&gt; 20 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDI* 100mcg</td>
<td>6 puffs</td>
<td>12 puffs</td>
</tr>
<tr>
<td>Nebulised</td>
<td>2.5mg</td>
<td>5mg</td>
</tr>
<tr>
<td>Salbutamol burst</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous nebulised salbutamol</td>
<td>Neat salbutamol nebuliser solution (5mg/mL), replenish where reservoir empty</td>
<td></td>
</tr>
</tbody>
</table>

*Metered dose inhaler. Always use with a spacer. Also use a mask if unable to form a reliable seal around the spacer.

**ALERT** - Cumulative doses of salbutamol can cause agitation, tremor, tachycardia, tachypnoea and rarely, hypertension.

Raised lactate, hypokalaemia and raised glucose on VBG are markers of salbutamol toxicity.

## Steroid dosing for the treatment of wheeze in pre-school children

<table>
<thead>
<tr>
<th>Steroid</th>
<th>Dosing</th>
</tr>
</thead>
</table>
| Prednisolone (PO)    | Day 1: 2mg/kg (max 50mg)  
Day 2 and 3: 1mg/kg  
Can extend course to 5 days if still symptomatic after 3-day course |
| Hydrocortisone (IV)  | 4mg/kg (max 200mg), 6 hourly                                          |
| Methylprednisolone (IV) | Initial loading dose: 2mg/kg (max 60mg)  
Then  
Day 1: 1mg/kg 6 hourly  
Day 2: 1mg/kg 12 hourly  
Day 3 onwards: 1mg/kg daily |

## Magnesium sulphate IV dosing for the treatment of wheeze in pre-school children

- **Bolus dose**  
  0.2 mmol/kg (equivalent to 50 mg/kg) infused over 20 minutes  
  (max 8 mmol = equivalent to 2,000mg)  
  **Must be administered in syringe driver using safety software.**

- **Side effects**  
  Usually minor, including:  
  - epigastric or facial warmth and flushing  
  - pain and/or numbness at infusion site  
  - dry mouth  
  - malaise  
  Severe reactions include allergy, hypotension, respiratory depression and circulatory collapse

- **Monitoring**  
  Full cardiac monitoring with blood pressure every 5 minutes.  
  Cease infusion if hypotension persists.  
  Monitor knee reflexes if repeating dose to assess for magnesium toxicity which can result in respiratory failure. Magnesium should be ceased/no further doses given if reflexes are absent.

## Salbutamol IV dosing for the treatment of wheeze in pre-school children

- **Bolus dose**  
  100mcg/kg infused over 20 minutes (max 5 milligrams)

- **Infusion**  
  1-10mcg/kg/min (max weight 50kg)

- **Monitoring**  
  Full cardiac monitoring, monitor potassium levels.

For more information refer to Statewide Paediatric Guideline: Pre-school wheeze - Emergency Management in Children