Initial management of life-threatening acute asthma. This figure shows in more detail the first stages ('immediate' and 'within minutes') shown in the figures Managing acute asthma in adults and Managing acute asthma in children.

**SEVERITY ASSESSED AS LIFE-THREATENING ACUTE ASTHMA**

- drowsy
- collapsed
- exhausted
- cyanotic
- poor respiratory effort
- soft/absent breath sounds
- oxygen saturation <90%

- Consider anaphylaxis and manage if suspected
- Consider adrenaline if the patient is unresponsive, cannot inhale bronchodilators, or is considered to be peri-arrest

**GIVE SALBUTAMOL VIA CONTINUOUS NEBULISATION**

**CHILDREN 1–5 YEARS**
- Salbutamol 2 x 2.5 mg nebulas at a time
- Ipratropium 250 microg added to nebulised solution
- Use oxygen to drive nebuliser* 
- Maintain $\text{SaO}_2 \geq 95\%$

**CHILDREN 6–11 YEARS**
- Salbutamol 2 x 5 mg nebulas at a time
- Ipratropium 500 microg added to nebulised solution
- Use oxygen to drive nebuliser* 
- Maintain $\text{SaO}_2 \geq 95\%$

**ADULTS AND ADOLESCENTS**
- Salbutamol 2 x 5 mg at a time
- Ipratropium 500 microg added to nebulised solution
- Use oxygen to drive nebuliser* 
- Titrate oxygen to target $\text{SaO}_2$ 93–95% in adults/≥95% in adolescents

*Piped oxygen or oxygen cylinder fitted with a high-flow regulator (6 L/min)

**ARRANGE IMMEDIATE TRANSFER TO HIGHER-LEVEL CARE AREA**

**NOTIFY SENIOR STAFF**

**REASSESS IMMEDIATELY AFTER STARTING SALBUTAMOL**

- Marked improvement
- Some improvement
- No improvement or worsening

**CONTINUE SALBUTAMOL AND MONITORING**

**ADD MAGNESIUM SULFATE IV**

- Dilute in compatible solution as single IV infusion over 20 minutes
- Adults and adolescents: 10 mmol
- Children 2–12 years: 0.1–0.2 mmol/kg (max 10 mmol)

**CONTINUE BRONCHODILATOR AND MONITORING**

When breathing improves, consider changing salbutamol route of delivery:

- pMDI PLUS SPACER
  - Adults and children 6 years and over: 12 puffs (100 microg/actuation) every 20 minutes
  - Children 1-5 years: 6 puffs (100 microg/actuation) every 20 minutes

- or

- INTERMITTENT NEBULISATION
  - Adults and children 6 years and over: 5 mg nebul every 20 minutes
  - Children 1–5 years: 2.5 mg nebul every 20 minutes

**REASSESS SEVERITY**

- Marked improvement
- No improvement or worsening

**CONSIDER THE NEED FOR NPPV OR INTUBATION AND VENTILATION**

**ARRANGE TRANSFER/RETRIEVAL TO ICU**

- Salbutamol IV infusion can be considered in critical care units. Follow your hospital/organisation’s protocol for dosage and delivery.
- Monitor blood electrolytes, heart rate and acid/base balance (blood lactate)
- Salbutamol toxicity can occur with either the inhaled or IV route of administration. Risk may be increased when the inhaled and IV routes are used concomitantly.