

VENTILATION: HIGH-FLOW NASAL CANNULAE (HFNC)

DEFINITION

Delivery of humidified, heated and blended oxygen/air at flow rates between 1–8 L/min via nasal cannulae

INDICATIONS

- Treating or preventing apnoea of prematurity
- Respiratory support for babies with:
 - respiratory distress syndrome – first line or post-extubation
 - chronic lung disease
 - meconium aspiration
 - pulmonary oedema
 - pulmonary hypoplasia
 - pneumonia
- Babies slow to wean off nasal CPAP
- Babies with nasal trauma from nasal CPAP

SETTING AND FLOW RATE

- Set operating temperature at 36–38°C
- Start at flow rate of 4–6 L/min (flow rates <6 L/min in babies <2 kg)
- Use ≤8 L/min in babies ≥2 kg
- **Ensure that air can exit freely around the prongs**

MONITORING

Continuously

- Heart rate (including ECG)
- Respiratory rate
- SpO₂
- Note: Monitor blood gases if on supplemental oxygen or on clinically indicated

WEANING FLOW RATES

(This weaning mainly applies to babies born <34 weeks' gestation, as some babies born ≥34 weeks may come off high flow without need for weaning)

FiO ₂ >0.3	May not be possible to wean flow rate
FiO ₂ <0.25 in baby ≥1.0 kg	Attempt to reduce by 1.0 L/min 24-hrly
FiO ₂ <0.25 in baby <1.0 kg	Attempt to reduce by 1.0 L/min 48-hrly
FiO ₂ 0.25–0.3	Attempt to reduce by 1.0 L/min 48-hrly
Requiring <4.0 L/min	<ul style="list-style-type: none">• If baby in air, attempt to stop (baby in air does not require nasal prong oxygen)• If baby in oxygen, put in 0.2 L/min of nasal prong oxygen initially
<ul style="list-style-type: none">• Clinical instability• Increased work of breathing• Significant increase in FiO₂	Escalate treatment Consider pneumothorax (rare)

CONTRAINDICATIONS

- Upper airway abnormalities
- Ventilatory failure
- Severe cardiovascular instability
- Frequent apnoeas (despite caffeine in preterms)