

High Flow Nasal Oxygen Therapy Quick Reference

Acknowledgements:

- <https://rebelem.com/high-flow-nasal-cannula-hfnc-part-1-how-it-works/>
- Derry Thibeault

What is High Flow Nasal Cannula (HFNC) oxygen:

- High flow nasal cannula oxygen is an oxygen delivery system that:
 - **H:** Provides conditioned **Heated** and **Humidified** gas.
 - **I:** Better meets Patient **Inspiratory flow rates** (demand).
 - **F:** Increases **Functional Residual Capacity**.
 - **L:** **Lighter** and more easily tolerated than BIPAP or CPAP.
 - **O:** Provides reliable **Oxygen** concentrations.
 - **W:** **Washes** out anatomic dead space and augments CO2 clearance.

General statements:

- High Flow Nasal Cannula Oxygen can be delivered safely and does not, in itself, require advanced monitoring in an ICU setting. Patient characteristics should guide monitoring level. In the presence of respiratory deterioration, patients may continue to tolerate its use
- While HFNC Oxygen can produce low levels of positive pressure during the respiratory cycle, the level of generated CPAP can be as high as approximately 5cmH2o. Oxygen can be comfortably delivered up to 100% oxygen and meet high respiratory demands. Clinical judgment is used when assessing efficacy.
- Based on precautionary principles HFNC Oxygen requires Airborne PPE precautions

Indications	Contraindications	Absolute Contraindications
<ul style="list-style-type: none"> • O2 requirements greater than 40 % • Mild to moderate respiratory Distress • High inspiratory flow demands • Retained and/or poor clearance of secretions eg. COPD , pneumonia • Uncomfortable or non-complaint with O2 therapy by mask 	<ul style="list-style-type: none"> • Upper Airway Obstruction • Central Apnea • Asthma • Blocked nasal passages/ choanal atresia • Trauma/Surgery to nasal pharynx • Pneumothorax 	<ul style="list-style-type: none"> • Decreased LOC • Severe Respiratory distress • Significant Hypercapnia

Procedure:

- Explain procedure to patient.
- Place dark blue lanyard around patient's neck.
- Fit appropriately sized HFNC nasal interface. Diameter of the cannula should be no more than half the diameter of the nares.
- Once humidifier has reached a minimum of 34 degrees (approx. 6 min), connect the swivel end of the interface to the heated inspiratory limb.

- Assess the patient's WOB and adjust flow to meet or exceed patient demand.
- Adjust FiO₂ to maintain SPO₂ as per Oxygen Therapy Protocol
- Initial weaning can be accomplished by reducing FiO₂ ≤.40 then further weaning is performed by decreasing the flow rate
- Once flow rate has been decreased to 20 –30 L/min and FiO₂ remains ≤ .40 a trial of conventional oxygen delivery can be attempted.-
- Document procedure as per protocol.

Important points to remember

- Silicone prongs can be removed and reversed to facilitate setup from either side.
- Circuit condensation must be drained periodically to prevent inadvertent instillations.
- Temperature will fluctuate (and potentially alarm) with changes in flowrate.
- Make sure humidifier is placed below level of patient's head.
- Gases must remain warm and humidified for patient to tolerate the high flow delivered by this system.
- Circuit and interface are required to be changed weekly.
- Consider Mask over if patient tolerates

Monitoring for improvement- HFNC works quickly . You should expect to observe the following findings within the first 30 minutes.

DECREASED DYSPNEA in the first 5 to 10 minutes

DECREASED RESPIRATORY RATE in the first 5 – 15 minutes

IMPROVED OXYGENATION within 15 minutes

DECREASED SUPRACLAVICULAR RETRACTION within 30 minutes

DECREASED THORACOABDOMONAL ASYNCRONY within 30 minutes

