

# AME 3rd ed Excerpt: Pearls and pitfalls of preoxygenation and apneic oxygenation using HFNO

Airway Management in Emergencies 3rd edition book excerpt from Chapter 4: *Oxygen Delivery Devices and Bag-Mask Ventilation*

Pearls and pitfalls of preoxygenation and apneic oxygenation using HFNO:

1. For normal patients with normal lungs, preoxygenation is relatively easily achieved but is likely best performed with passive closed system BVM at 15 l/min for at least four minutes. For patients with increased minute ventilation needs, the addition of standard HFNO under a BVM with PEEP allows additional flow for preoxygenation and provides CPAP conditions.
2. The use of dedicated HFNO (flows up to 60 l/min) alone for preoxygenation may be an option for some patients. Standard HFNO (flows up to 15 l/min) should not be used alone for preoxygenation.
3. During the induction period until full neuromuscular blockade is achieved and laryngoscopy begins, oxygenation techniques, including HFNO delivery, require an actively opened airway (jaw thrust +/-OPA). If not providing assisted ventilation during this phase, a closed system using BVM/PEEP with HFNO will likely provide the best ongoing preoxygenation conditions as the patient transitions to apnea.
4. The addition of standard HFNO when performing assisted ventilations under a BVM/PEEP manual resuscitator or a mask delivering NIV is of questionable additional value. Benefit may come from distending (stenting) the upper airway, improving the nasopharyngeal oxygen reservoir and providing additional PEEP.
5. Clinicians should be aware of the potential for leak from the use of HFNO under a mask during PPV.
6. True apneic oxygenation provided by HFNO occurring during laryngoscopy will extend the apnea time. If preoxygenation was near complete and laryngoscopy is completed as it should be in under one minute, the value of ongoing HFNO may not be realized.
7. The value and safety of HFNO is most recognized when difficulty is anticipated or encountered and allows *more time* than would otherwise be available. This provides the clinician a less hurried, less stressed approach to the airway.
8. HFNO should never be an excuse to “stay and play.” Laryngoscopy and tracheal intubation should still occur in an expeditious fashion.
9. HFNO is not a substitute for active reoxygenation between laryngoscopy attempts.
10. HFNO will rapidly deplete oxygen resources (tank or wall sources). Be vigilant of your supply.