EBNS Non-invasive Guidelines *after* Extubation

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Infants <28 weeks use NIPPV

- Rate of 10-40,
- PIP 2-4 >PIP on Vent or 10 above PEEP, titrate to a max PIP of 18 above PEEP
- PEEP 5-8
- iTime 0.3-0.5
- Flow 8-12

Infants 28-32 weeks

- CPAP 5-8 cmH2O
- Due not "sprint" off CPAP
- No HFNC for infants <32 weeks unless evidence of severe nasal trauma
- HFNC can be used in infants after a CGA of ≥32 weeks if below criteria are met:
  - NCPAP 5cmH_2O
  - Have an FiO_2 requirement of <0.3
  - Are not deemed stable enough to be trialed on RA
- CPAP should be resumed for increased WOB, FiO2 increase >15%, increased apnea/bradycardia/desaturation or hypercarbia

Infants >32 weeks:

- NCPAP 5-8cmH2O
- HFNC initiating guidelines:
  - Wt <1999 g start at 3 LPM max of 6 LPM
  - Wt 2000 to 2999g start at 4 LPM max of 7 LPM
  - >3000 g start at 5 LPM max of 8 LPM.
  - Recommended increasing the flow rate in 1 LPM increments
- HFNC weaning guidelines:
  - Wean flow by 0.5- to 1.0 LPM increments
- **HFNC must haves:**
  - Nasal leak is needed to ensure patient safety.
  - Cannula to occupy <50% of the area of the nares for egress of gas.
  - There must be heat and humidification.
  - Optimal is 37°C if there is rainout at flow <4LPM may need to decrease to 34-35°C

References

1. Clinics in Perinatology, 2016-12-01, Volume 43, Issue 4, Pages 693-705
2. A comparison of bilevel and ventilator delivered non-invasive respiratory support Archives of Disease in Childhood - Fetal and Neonatal Edition · July 2015
3. A review of Non-invasive support. PAEDIATRICS AND CHILD HEALTH 24:1
4. A trial comparing non-invasive strategies. **N Engl J Med 2013;369:611-20.**
5. High flow nasal cannula for respiratory support in preterm infants. Cochrane Database of Systematic Reviews 2016, Issue 2. Art. No.: CD006405. DOI: 10.1002/14651858.CD006405.pub3.
6. Nasal intermittent positive pressure ventilation (NIPPV) versus nasal continuous positive airway pressure (NCPAP) for preterm neonates after extubation. Cochrane Database of Systematic Reviews 2014, Issue 9. Art. No.: CD003212. DOI: 10.1002/14651858.CD003212.pub2.
7. Duration of CPAP in preterm infants. Seminars in Fetal & Neonatal Medicine 21 (2016) 189e195
8. Heated Humidified High Flow Nasal Cannula vs Nasal CPAP for Respiratory support in neonates. PEDIATRICS Volume 131, Number 5, May 2013
9. High Flow Nasal Cannula Use Is Associated with Increased Morbidity and Length of Hospitalization in Extremely Low Birth Weight Infants. J Pediatrics 2016;173:50-5
10. When and How to Extubate Premature Infants from Mechanical Ventilation. Curr Pediatr Rep (2014) 2:18–25
11. Neonatal nasal intermittent positive pressure ventilation efficacy and lung pressure transmission Journal of Perinatology (2015) 35, 716–719
12. **Nasal Intermittent Positive-Pressure Ventilation vs Nasal Continuous Positive Airway Pressure for Preterm Infants With Respiratory Distress Syndrome** *Arch Pediatr Adolesc Med. 2012;166(4):372-376*
13. **Non-invasive support.** PEDIATRICS Volume 1 37, number 1 , January 2016: e2 0153758
14. High-flow nasal cannula: Mechanisms, evidence and recommendations Seminars in Fetal & Neonatal Medicine 21 (2016) 139e14

15. Nasal intermittent positive pressure ventilation in preterm infants: Equipment, evidence, and synchronization Seminars in Fetal & Neonatal Medicine 21 (2016) 146e153

16. **Physiology of Non-**invasive support. Seminars in Fetal & Neonatal Medicine 21 (2016) 174e180

17. Strategies for the prevention of continuous positive airway pressure failure Seminars in Fetal & Neonatal Medicine 21 (2016) 196e203

18. Nasal High-Flow Therapy for Preterm Infants Review of Neonatal Trial Data Clin Perinatol 43 (2016) 673–691

19. Evidence Support and Guidelines for Using Heated, Humidified, High-Flow Nasal Cannulae in Neonatology Oxford Nasal High-Flow Therapy Meeting, 2015 Clin Perinatol 43 (2016) 693–705