

**Clinical Practice  
Guidelines**

**Non-invasive  
Respiratory Support  
for Newborns**

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**Table 1: Summary of recommendations for non-invasive respiratory support for newborns**

| S. No.   | Recommendations  | Strength of recommendations | Quality of evidence |
|--|--|-----------------------------|---------------------|
| <b>Initial respiratory support for preterm neonates with or at risk of RDS</b> |  |                             |                     |
| 1.   | All preterm neonates with respiratory distress should be managed with continuous positive airway pressure (CPAP)<br><br><i>Comment:</i> There is a small but possible risk of air-leak in neonates started on CPAP therapy. Facilities offering CPAP support should have expertise to monitor such neonates to avoid complications                               | Strong                      | Low                 |
| 2.   | Continuous positive airway pressure (CPAP) should be administered at or immediately after the onset of respiratory distress in preterm neonates.   | Strong                      | Low                 |
| 3.   | Heated humidified high flow nasal canula (HFNC) is not recommended for the management of preterm neonates with or at risk of respiratory distress syndrome (RDS)   | Strong                      | Moderate            |
| 4.   | Nasal intermittent positive pressure ventilation (NIPPV) delivered by a ventilator using synchronised or non-synchronised methods may be used as the primary mode in preterm neonates with or at risk of RDS<br><br><i>Applicable to settings with optimal availability of ventilators and trained manpower</i>  | Strong, Conditional         | High                |
| 5.   | Extreme preterm neonates (gestation <28 weeks) should not be routinely intubated in the delivery room; intubation and ventilation should be reserved only for those with severe perinatal asphyxia requiring resuscitation<br><br><i>Applicable in settings with high antenatal steroid coverage and adequate expertise in managing extreme preterm neonates</i> | Strong, Conditional         | Moderate            |

|  |  |                   |                 |
|--|--|-------------------|-----------------|
| 6.   | <p>Early rescue surfactant should be administered along with CPAP in preterm neonates with respiratory distress syndrome (RDS)</p> <p><i>Comment:</i> Units offering surfactant therapy should have equipment to offer mechanical ventilation, blood gas analysis, chest X-ray and skilled newborn care for adequate monitoring.</p>                     | Strong            | Moderate        |
| <b>Non-invasive respiratory support for preterm neonates with apnea of prematurity</b>                       |  |                   |                 |
| 7.   | <p>a. CPAP therapy should be initiated in preterm neonates with apnea of prematurity in conjunction with methylxanthines.</p> <p>b. NIPPV (both synchronized and non-synchronised) may be used for frequent and severe apneic episodes, <i>if adequate expertise and equipment are available</i></p>   | Strong            | Low             |
|  |  | Weak, Conditional | Very low        |
| <b>Non-invasive respiratory support for preterm neonates in post-extubation setting</b>                      |  |                   |                 |
| 8.   | <p>Preterm very low birth weight neonates being extubated after a brief period of ventilation should be weaned off either to CPAP or NIPPV.</p> <p><i>Comment:</i> If adequate expertise and equipment are available, NIPPV (both synchronized and non-synchronised) might preferably be used, particularly in neonates at high risk of CPAP failure</p> | Strong            | Low to moderate |
| <b>Non-invasive respiratory support for late preterm and term neonates with meconium aspiration syndrome</b> |  |                   |                 |
| 9.   | <p>Continuous positive airway pressure (CPAP) may be employed as the primary mode of respiratory support in late preterm and term neonates with meconium aspiration syndrome (MAS)</p> <p><i>Comment:</i> Facilities offering CPAP support should have the expertise to monitor such neonates for air-leak.</p>  | Weak              | Low             |

| <b>CPAP devices, nasal interfaces, initial pressure and weaning strategies</b> |  |                  |                     |
|--|--|------------------|---------------------|
| 10.  | <p><b>Pressure generators</b></p> <p>Bubble CPAP, rather than ventilator CPAP or variable flow device, may preferably be used in preterm neonates requiring continuous positive airway pressure for any indication</p>   | Weak             | Low to very low     |
| 11.  | <p><b>Nasal interface</b></p> <p>CPAP should be delivered by either short binasal prongs or nasal masks in neonates</p> <p><i>Comment:</i> If available, nasal masks may be preferred, particularly in neonates at high risk of nasal injury</p>   | Strong           | Moderate            |
| 12.  | <p><b>Initial pressures</b></p> <p>a. Preterm neonates with respiratory distress syndrome (RDS) may be initiated on CPAP pressures of 5 cm H<sub>2</sub>O</p> <p>b. Preterm very low birth weight neonates being extubated to CPAP, after a brief period of ventilation may be initiated on pressures of 6 cm H<sub>2</sub>O or more</p> | Weak<br><br>Weak | Low<br><br>Very low |
| 13.  | <p><b>Weaning</b></p> <p>Preterm very low birth weight neonates being weaned off from CPAP may preferably be weaned off by sudden discontinuation of CPAP rather than CPAP cycling</p>   | Weak             | Low                 |