The Hierarchy of Evidence

The Hierarchy of evidence is based on summaries from the National Health and Medical Research Council (2009), the Oxford Centre for Evidence-based Medicine Levels of Evidence (2011) and Melynyk and Fineout-Overholt (2011).

I Evidence obtained from a systematic review of all relevant randomised control trials.

II Evidence obtained from at least one well designed randomised control trial.

III Evidence obtained from well-designed controlled trials without randomisation.

IV Evidence obtained from well designed cohort studies, case control studies, interrupted time series with a control group, historically controlled studies, interrupted time series without a control group or with case- series

V Evidence obtained from systematic reviews of descriptive and qualitative studies

VI Evidence obtained from single descriptive and qualitative studies

VII Expert opinion from clinicians, authorities and/or reports of expert committees or based on physiology

Melynyk, B. & Fineout-Overholt, E. (2011). *Evidence-based practice in nursing & healthcare: A guide to best practice (2nd ed.).* Philadelphia: Wolters Kluwer, Lippincott Williams & Wilkins.

National Health and Medical Research Council (2009). *NHMRC levels of evidence and grades for recommendations for developers of guidelines* (2009). Australian Government: NHMRC. http://www.nhmrc.gov.au/_files_nhmrc/file/guidelines/evidence_statement_form.pdf

OCEBM Levels of Evidence Working Group Oxford (2011).*The Oxford 2011 Levels of Evidence*. Oxford Centre for Evidence-Based Medicine. http://www.cebm.net/index.aspx?o=1025

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Reference ***(include title, author, journal title, year of publication, volume and issue, pages)***	**Evidence level (I-VII)**	**Key findings, outcomes or recommendations**
Continuous Positive Airway Pressure Nasophayngeal CPAP. Newborn Services Clinical Guideline. Auckland District Health Board. www.adhb.govt.nz/newborn (printed September 16, 2013).	VII	• Clinical guideline available via Auckland District Health Board website • Outlines procedure for insertion and management of nasopharyngeal tube (neonates) • Includes suggested tube lengths in nasopharynx for neonates weighing greater than and less than 3.5kg
Continuous positive airway pressure via single nasal tube. Policy and Procedure. The Womens, Melbourne. www.thewomens.org.au (printed December 10, 2012).	VII	• Clinical guideline available via The Women's Hospital, Melbourne • Outlines procedure for insertion and management of nasopharyngeal tube (neonates) • Includes suggested tube lengths in nasopharynx for neonates weighing less than 2kg, and greater than 2kg • Utilises total of 11 references
Courtney, S.E., Kahn, D.J., Singh, R., & Habib, R.H. (2011). Bubble and ventilator-derived nasal continuous positive airway pressure in premature neonates: work of breathing and gas exchange. *Journal of Perinatology.* 31, 44-50.	IV	• Study compares bubble and ventilator means of delivering CPAP to premature neonates (<1.5kg) • Concluded that work of breathing and ventilation with bubble CPAP and ventilator derived CPAP are similar when equivalent delivered prong pressures are assures. • Concluded that there is improved oxygenation with bubble CPAP that requires further investigation

De Paoli, A.G., Davis, P.G., Faber, B, & Morley, C.J. (2008). Devices and pressure sources for administration of nasal continuous positive airway pressure in preterm neonates. *Cochrane Neonatal Reviews*. www.thecochranelibrary.com	II	• Cochrane review including literature search, data collection, data analysis • Short bi nasal prongs are more effective at preventing reintubation and are associated with lower oxygen requirements than single prongs after premature neonates are weaned from the ventilator • Bi nasal prongs are better than single prongs nasal CPAP for premature neonates • The most effective and least traumatic bi nasal prong device remains to be detrmined • Outlines physiological effects of CPAP • Discusses CPAP delivery interfaces
Fraser Askin, D. Noninvasive Ventilation in the Neonate. (2007). *Journal of Perinatal & Neonatal Nursing*. 21(4), 349-358.	VII	• Reviews literature reviews and provides an overview of non invasive ventilation including the history of CPAP, types of non invasive ventilation, benefits of non invasive ventilation, contraindications and complications of non invasive ventilation, nursing assessment and care of neonates on CPAP, desirable characteristics of nasal prongs • The ease at which prongs can be stabilized plays a role I success of CPAP therapy
Nasopharyngeal Continuous Positive Airway Pressure (NPCPAP). Procedure Guideline. University of Iowa Children's Hospital. www.uichildrens.org (printed September 16, 2013).	VII	• Clinical guideline available via University of Iowa Children's Hospital website • Outlines procedure for insertion and management of nasopharyngeal tube (neonates) • Includes suggested tube lengths in nasopharynx for neonates weighing less than 1.5kg, between 1.5kg and 2kg, and greater than 2kg • Utilises total of 8 references
Petty, J. (2013). Fact sheet: Understanding neonatal non invasive ventilation. *Journal of Neonatal Nursing*. 19, 10-14.	VII	• Overview of non invasive ventilation in neonatal care; focuses on the terms and modes used
Sherman, T.I., Blackson, T.B., et at. (2003). Physiologic Effects of CPAP: Application and Monitoring. *Neonatal Network*. 22(6), 7-16.		• Article discusses history of neonatal CPAP, physiological effects of neonatal CPAP, effects on cardiovascular function, nursing implications

Shoemaker, M.T., Pierce, M.R., Yoder, B.A. & Digeronimo, R.J. (2007). High flow nasal cannula versus nasal CPAP for neonatal respiratory disease: a retrospective study. *Journal of Perinatology*. 27, 85-91.	IV	• Objective is to assess the frequency of usage, safety and clinical utility of humidified high flow nasal cannula and compare outcomes with premature neonates who received nasal CPAP • Additional research is required to better define the utility and safety of humidified high flow nasal cannula compared to nasal CPAP
Zanardi, D.M.T. (2010). Devices and pressure sources for administration of nasal continuous positive airway pressure in preterm neonates: RHL commentary. *The WHO Reproductive Health Library*. Geneva: World Health Organization.	V	• Review of literature that seeks to determine which technique of pressure generation and which type of nasal interface for nasal CPAP delivery most effectively reduces the need for additional respiratory support in premature neonates extubated to nasal CPAP following intermittent positive pressure ventilation for respiratory distress syndrome or in those treated with nasal CPAP soon after birth • Seven trials are included • Short bi nasal prong devices are more effective than single prong devices in reducing the rate of reintubation, lowering oxygen requirements and respiratory rate • Short bi nasal prongs are more effective than nasopharyngeal continuous positive airway pressure in the treatment of early respiratory distress syndrome • The most effective bi nasal prong device is not determined