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**
Tin, W., Milligan, W.A., Pennefather, P., & Hey, E. (2001). Pulse oximetry, severe retinopathy, and outcome at one year in babies of less than 28 weeks gestation. *Archives of Diseases in Childhood Fetal Neonatal Edition.* 84: F106-F110.	**IV**	• **Examination of case notes of 295 babies who were born before 28 weeks gestation** • **ROP developed in babies with oxygen saturations maintained at 88-98% in the first 8 weeks of life; ROP was severe enough to require cryotherapy 4 times as often as babies given enough oxygen to maintain saturations of 70-90%** • **Concluded that attempts to keep oxygen saturations at normal "physiological" level may do more harm than good in babies less than 28 weeks gestation**
Tin, W. & Gupta, S. (2007). Optimum oxygen therapy in preterm babies. *Archives of Diseases in Childhood Fetal Neonatal Edition.* 92: F143-F147.	**II**	• **Review of evidence regarding oxygen therapy in premature neonates, including relationship between oxygen therapy and development of ROP, BPD and PVL**
Clucas, L., Doyles, L.W., Dawson, J., Donath, S., & Davis, P.G. (2007). Compliance with alarm limits for pulse oximetry in very preterm infants. *Pediatrics*. 119: 1056-1060.	**V**	• **Descriptive study of compliance of setting upper alarm limit at a major tertiary centre – the upper alarm limit was too high on the majority of days that infants were in oxygen, suggesting that improvement in compliance with setting appropriate upper limits was required** • **Oxygen toxicity in preterm neonates has been associated with conditions such as BPD and ROP**

Tin, W., Walker, S., & Lacamp, C. (2003). Oxygen monitoring in preterm babies: too high, too low? *Pediatric Respiratory Reviews*. 4: 9-14.	**II**	• **Review of relevant studies** • **Maintaining oxygen saturation at "physiological" level for a healthy term neonate may do more harm than good in very premature neonates** • **Growth and developmental outcome of babies less than 30 weeks' gestation at birth who were still oxygen dependent at a post-menstrual age of 32 weeks was not improved by keeping their oxygen saturation in the high 90s**
Vanderveen, D.K., Mansfield, T., & Eichenwald, E.C. (2006). Lower oxygen saturation limits decrease the severity of retinopathy of prematurity. *Journal of Aapos: American Association for Pediatric Ophthalmology & Strabismus.* 10(5): 445-8.	**IV**	• **Decreasing oximeter alarm parameters in the first weeks of life for infants with a birth weight 1250g or lower may decrease the incidence of prethreshold ROP**
Coe, K. (2007). Nursing Update on Retinopathy of Prematurity. *JOGNN*. 36(3): 288-292.	**II**	• **Review of evidence and practice** • **In infants born below 32 weeks gestation, targeting pulse oximetry saturations between mid 80s and mid 90s is best practice** • **Rates of grades III and IV ROP decrease with targeting of oxygen saturations at lower level**