

## 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 (2<sup>nd</sup> 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](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>

Reference (include title, author, journal title, year of publication, volume and issue, pages)	Evidence level (I-VII)	Key findings, outcomes or recommendations
<p>Kumar, P., Denson, S.E., Mancuso, T.J. and Committee on Fetus and Newborn, Section on Anesthesiology and Pain Medicine, (2010) <i>Pediatrics</i>; 125(3); 608-616.  <a href="http://pediatrics.aappublications.org/content/125/3/608.full.html">http://pediatrics.aappublications.org/content/125/3/608.full.html</a></p>	<p>II, IV, VII</p>	<p><b>Key findings:</b>  Several trials have demonstrated that premedication prior to intubation in newborns (term and preterm) improves intubating conditions (defined as good jaw relaxation, open and immobile vocal cords, suppression of pharyngeal and laryngeal reflexes), decreases the time and number of intubation attempts and minimises the potential for intubation-related airway trauma.</p> <p><b>Recommendations:</b>  Premedication should be used for all non-emergent endotracheal intubations in newborns. Mediations with rapid onset and short duration are preferable.</p>
<p>Nemergut, M.E., Yaster, M., Colby, C.E. (2013) Sedation and analgesia to facilitate mechanical ventilation. , 40; 539-558</p>	<p>I, II, IV, V, VI, VII</p>	<p><b>Key findings:</b>  Intubation and mechanical ventilation are associated with physiologic changes consistent with pain and stress.</p> <p><b>Recommendations:</b>  Sedatives and analgesics be utilized prior to elective intubation to mollify the stress response in newborns and improve intubation conditions.</p>

<p><b>Barrington, K. (2011), Premedication for endotracheal intubation in the newborn infant. <i>Paediatric Child Health</i> 16(3): 159-164.</b></p>	<p>I, II, IV, VI, VII</p>	<p><b>Key findings:</b> Premedication reduces the adverse physiological responses of bradycardia, systemic hypertension, intracranial hypertension and hypoxia, as well as decreasing the pain and discomfort associated with the procedure.</p> <p><b>Recommendations:</b> An optimal protocol for premedication for elective endotracheal intubation includes administration of a vagolytic agent, a rapid-acting analgesic and a short-duration muscle relaxant.</p>
<p>Schmölzer GM, Roehr CC. Techniques to ascertain correct endotracheal tube placement in neonates. <i>Cochrane Database of Systematic Reviews</i> 2014, Issue 9. Art. No.: CD010221. DOI: 10.1002/14651858.CD010221.pub2.</p>	<p>VI</p>	<p><b>Key findings:</b> There were no randomized or quasi-randomised controlled trials found in this review that addressed the variety of techniques currently in use to confirm correct tracheal tube placement. The gold standard test to confirm ETT position is chest radiography. Additional use of clinical signs, respiratory function monitors or exhaled CO<sub>2</sub> detectors to assess correct ETT placement is based on evidence from observational studies and case reports.</p>
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