

# 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>

<b>Reference (include title, author, journal title, year of publication, volume and issue, pages)</b>	<b>Evidence level (I-VII)</b>	<b>Key findings, outcomes or recommendations</b>
<b>Management of acute pain in children: safety and efficacy of a nurse-controlled algorithm for pain relief. Falanga et al. Acute Pain 2006 8 (2): 45-54</b>	1V	This study evaluated the efficacy and safety of regular and combined analgesia to give improved pain relief.
<b>Hospitalized children continue to report undertreated and preventable pain. Bernie KA, Chambers C. Vet al. 2014 Pain Res Manag vol 19 no 4</b>	V1	Acknowledgement that there remains inadequate pain assessment and management in paediatric patients. This paper looks at inpatient pain prevalence and treatment and pain treatment thresholds and the level of pain which patients require intervention.
<b>Parents' and Children's views about pain management. Twycross and Finley. Journal of Clinical Nursing May 2013</b>	V1	Despite the evidence to guide pain management practice, children still experience moderate to severe pain. Children and families felt nurses would do everything they could. There was a need to improve preparation for surgery.
<b>Acute Pain Management: Scientific evidence. McIntyre, P.E., Schug, S.A et al 2015 4<sup>th</sup> edition ANZCA and FPM</b>	1-V11	A comprehensive up to date and evidence based
<b>Core outcome domains and measures for paediatric acute and chronic/recurrent pain clinical trials: McGrath P.J, et al. J Pain 2008 9(9):771-83</b>	1	A group of participants from academia and experts in paediatric pain research, reviewed the core domains and measures recommended for clinical trials.
<b>Systematic review of the psychometric properties, interpretability and feasibility of self-report pain intensity measures for use in clinical trials in children and adolescents. Stinson, J.N, Kavanagh, T, Yamada, J et al. Pain 2006 125 (1-2): 143-57</b>	1	The aim of the study was to systematically review the use of self-report pain intensity measures in clinical trials evaluating pain treatments. Core outcome domains have been established for consideration to assist when designing pain clinical trials in both acute and chronic pain. Although only 6 scales were seen as psychometrically sound, interpretability and feasibility was still variable.

<b>Systematic review of observational (behavioral) measures of pain for children and adolescents aged 3-18years. Von Baeyer and Spagrud et al. Pain 2007 127, 140-150</b>	1	Observational scales of pain were systematically reviewed identifying scales as outcome measures in clinical trials. 20 scales were identified after an extensive literature search. It was found different scales were needed for different situations for example, brief painful procedures, post-operative pain, critical care and pain-related distress or fear.
<b>Pain in Children: Comparison of assessment scales. Wong, D.L. and Baker, C.M. 1988 Pediatric Nursing 14. (1), 9-17</b>	V	This paper although over 20 years old is an important study recognizing that without methods to quantify pain it is not possible to plan interventions and evaluate the effectiveness.
<b>Analgesia following surgery in children with and without cognitive impairment. Koh J. L, Fanurik D. et al. Pain 2004 111 (239-244)</b>	1V	
<b>Finding the Evidence to Change Practice for Assessing Pain in Children Who Are Cognitively Impaired. Ely et al. Journal of Paediatric Nursing 2012; 27(4):402-10.</b>	111	A quality improvement project to systematically review behavioral pain assessment tools for children who are cognitively impaired, with the goal of identifying a valid and reliable tool for clinical practice. Evidence was gained to support the use of the FLACC tool
<b>A reliability of the Face, Legs, Activity, Cry, Consolability Behavioural Tool in Assessing Acute Pain in Critically ill Patients. Voepel-Lewis, R.N. et al. American Journal of Critical Care 2010, 19, 1 (55-61)</b>	V11	Comparative scoring tools were used by three independent observers and the FLACC was seen to be reliable before and after analgesia. It was felt that FLACC could be used across different patients and settings and comparative scores with the numeric were observed
<b>Nurses' beliefs and Self-Reported Practices Related to Pain Assessment in Nonverbal Patients. Wysong Peggy Rupp, Pain Management Nursing 2014 Vol 15, 1.pp 176-185</b>	V11	The beliefs and practices by nurses caring for nonverbal patients show there is a need for improvement through education

<b>Pain Assessment in the patient Unable to Self-Report: Position Statement with Clinical Practice Recommendations. Herr K, Coyne P. J. McCaffery M. et al. Pain Management Nursing, 2011, Vol 12 No 4 PP 230-250</b>	1V	A position paper recommending a hierarchical framework for the assessment of pain in patients unable to self report. In this paper it was recognized that those who are unable to communicate are at an increased risk for pain being under recognized and under treated.
<b>Hospitalized children continue to report undertreated and preventable pain. Birnie K.A, Chambers C. T. et al. Pain Res Manag 2014 Vol 19, No 4</b>	V1	Interviews captured the experiences of patients or their parents across four hospitals about their pain, and treatment revealing an under-treatment of pain particularly procedural.
<b>A systematic Review of the Psychometric Properties of the Modified Behavioral Pain Scale (MBPS) Dianne J. Crellin, Franz E. Babel, Nick Santamaria, Denise Harrison Journal of Pediatric Nursing Vol 40, 2018 14-26</b>	11	There is difficulty in assessing procedural pain in infants and children. The modified behavioral scale has been used in procedural pain such as immunization but it has not been clear if it is able to be used with confidence for other procedural pain. This is a systematic review of pain scales to help guide the appropriate tool for procedural pain in infants. This paper looks at the discrimination between pain and non-pain behaviors and the need for further testing of the MBPS in a variety of procedures. It was however seen to be suitable to assess procedural pain in the young child who can- not self report
<b>Assessment and treatment of pain in pediatric patients. Haleform Kahsay. Current pediatric Research 2017, Vol 21 issue 1</b>	V	This article reviews a number of pain assessment tools and the way they are used in different facilities. Acknowledgement is that with valid and reliable tools, pain management should be able to be improved, using appropriate measures.
<b>Advances in understanding nociceptive and neuropathic pain. Ewan St . John Smith. Journal of Neurology 2018, 265-:231-238</b>	1V	Understanding how the sensory nervous system works and what changes occur when presented with neuropathic pain. This will help to identify appropriate new therapies and analgesics. Understanding genetic variants in humans will help to further understand how nociceptors work and further develop pain killers and biological treatments for neuropathic pain
<b>Pain Assessment in the Patient Unable to Self-Report: Position Statement with Clinical Practice Recommendations. Kerr,. Coyne, P., McCaffery, M., Manworren, R., Position Statement 12 (4) 230-250</b>	V1	The ability to self- report is at times difficult or impossible. Therefore a hierarchy of assessment tools have been recommended to ensure pain is well managed in those who are unable to self-report

