

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>

Reference (include title, author, journal title, year of publication, volume and issue, pages)	Evidence level (I-VII)	Key findings, outcomes or recommendations
Alberta Health Services (2005) Management of subcutaneous injection sites in palliative care patients, Covenant Health and Seniors Health Regional Palliative Care Program, Clinical Guideline	VII	<ul style="list-style-type: none"> - Palliative Care Clinical Guideline - Outlines the insertion procedure, administration of medications and documentation required for insertion of the subcutaneous device
Breen, M (2006) An evaluation of two subcutaneous infusion devices in children receiving palliative care. <i>Paediatric Nursing</i> , 18(4)	III	<ul style="list-style-type: none"> - Comparing 2 different subcutaneous devices looking at the length of time the device was in situ and the skin reactions around the sites - Limited numbers in the study
Centre for Palliative Care Research and Education, Queensland Health (2010) Guidelines for subcutaneous infusion device management in palliative care, 2nd Ed, Centre for Palliative Care Research and Education, Queensland Health, 2010 Clinical Guideline, ISBN 978-1-921707-07-0	VII	<ul style="list-style-type: none"> - Clinical practice guideline outlining the subcutaneous infusion management
Child and Adolescent Health Service, Princess Margaret Hospital for Children, Perth (2013) Continuous subcutaneous infusions (CSI) for palliative care, Paediatric Practice Manual, Child and Adolescent Health Service Princess Margaret Hospital for Children, Perth, 2013, Clinical Guideline	VII	<ul style="list-style-type: none"> - Clinical practice guideline for continuous subcutaneous infusions

<p>de Jong, M.E.A., Carbiere, T. & van den Heuvel-Eibrink, M.M. (2006) The use of an insuflon device for the administration of G-CSF in pediatric cancer patients. <i>Supportive Care in Cancer</i>, 14(1), pp 98-100</p>	<p>IV</p>	<ul style="list-style-type: none"> - 93 G-CSF periods were registered (29 patients) of which an insuflon device was used in 45 G-CSF periods (21 patients); median range of patients with insuflon was 3yrs - 8 patients (median age 13yrs) preferred daily subcutaneous injections: hypothesised adolescents may be more likely to prefer daily injections reflecting the need for self control and normality - 2 G-CSF periods by an insuflon device were complicated by mild induration of the insertion site and low-grade fever - An insuflon device was reported as safe, easy and reliable in the care of children with cancer, improving quality of life especially in younger children
<p>Dyer, S.L., Collins, C.T., Baghurst, P., Saxon, B. and Meachan, B. (2004) Insuflon Versus Subcutaneous Injection for Cytokine Administration in Children and Adolescents: A Randomized Crossover Study. <i>Journal of Pediatric Oncology Nursing</i>, 21(2), pp 79-86</p>	<p>IV</p>	<ul style="list-style-type: none"> - No RCT's evaluating the use of an insuflon in the pediatric oncology population - Small sample (20 children) supports the use of an insuflon device for all children receiving cytokines - Study demonstrated a strong preference for the use of an insuflon compared to daily subcutaneous injections (75% of patients) - Decrease shown in local reaction when using an insuflon; no difference in febrile episodes between use of an insuflon or daily subcutaneous injections - Preference amongst children over 7 years of age for daily injections - Recommends that insuflon devices should be an option for all children receiving cytokines
<p>Hanas, R.H., Frid, A., Carlsson, S. & Ludvigsson, J. (1997) Unchanged Insulin Absorption After 4 Days' Use of Subcutaneous Indwelling Catheters for Insulin Injection. <i>Diabetes Care</i>, 20(4), pp 487-490</p>	<p>III</p>	<ul style="list-style-type: none"> - Small sample (10 adults) utilized radiolabelled short acting subcutaneous insulin to compare absorption through different injecting methods - Concluded that using indwelling subcutaneous catheters for insulin injections for up to 4 days does not affect the absorption of short-acting insulin

<p>Hanas, R., Adolfsson, P., Elfvin-Akesson, K., Hammaren, L., Ilvered, R., Jansson, I., Johansson, C., Kroon, M., Lindgren, J., Lindh, A., Ludvigsson, J., Sigstrom, L., Wilk, A. & Aman, J. (2002) Indwelling catheters used from the onset of diabetes decrease injection pain and pre-injection anxiety. <i>The Journal of Pediatrics</i>, 140(3), pp 315-320</p>	<p>II</p>	<ul style="list-style-type: none"> - 41 paediatric patients, open randomized controlled study - Demonstrated pre-injection anxiety and injection pain where lower when using indwelling catheters for introducing insulin injections at the onset of diabetes
<p>Healy, S., Israel, F., Reymond, E., Lyon-Micic, M. (2011) Subcutaneous medications and palliative care: A guide for caregivers, 2nd Edition, Brisbane South Palliative Care Collaborative, Queensland Health, Guideline</p>	<p>VII</p>	<ul style="list-style-type: none"> - Manual for carers at home
<p>McNeilly, P., Price, J. & McCloskey, S. (2004) The use of syringe drivers: A paediatric perspective. <i>International Journal of Palliative Nursing</i>, 10(8)</p>	<p>VII</p>	<ul style="list-style-type: none"> - A review article looking at current practice about syringe driver in paediatric palliative care.
<p>Menahem, S. & Shvartzman, P. (2010) Continuous subcutaneous delivery of medications for home care palliative patients – using an infusion set or a pump. <i>Support Cancer Care</i>, 18, 1165-1170, DOI:10.1007/s00520-009-0736-x</p>	<p>III</p>	<ul style="list-style-type: none"> - Double blinded cross over study looking at different infusions methods
<p>Morgan, S. & Evans, N. (2004) A small observational study of the longevity of syringe driver sites in palliative care. <i>International Journal of Palliative Nursing</i>, 11(2)</p>	<p>VI</p>	<ul style="list-style-type: none"> - A literature review on the topic and review of practitioners in the field on the diluents that are used in their practice including nurses, pharmacists and hospitals via an email survey

<p>NHS Greater Glasgow and Clyde Health Authority, Scotland (2010) Guidelines for the use of subcutaneous medications in palliative care for adults – Primary care and hospices, NHS Greater Glasgow and Clyde Health Authority Scotland, 2010, Clinical practice guideline</p>	<p>VII</p>	<ul style="list-style-type: none"> - Outlines the reason, procedure and administration of medications via the subcutaneous route in palliative care - Extensive list of compatible drugs and medications uses for which symptom
<p>NHS Lanarkshire, England (2011) Guidelines for the use of subcutaneous medications in palliative care, NHS Lanarkshire England, 2011, Clinical practice guideline</p>	<p>VII</p>	<ul style="list-style-type: none"> - Outlines the reason, procedure and administration of medications via the subcutaneous route in palliative care - Extensive list of compatible drugs and medications uses for which symptom
<p>Pegoli, V. & Kotasek, D. (1997) Daily Administration of Granulocyte Colony Stimulating Factor Using a Subcutaneous Butterfly. <i>International Journal of Nursing Practice</i>, 3(2), pp 141</p>	<p>VII</p>	<ul style="list-style-type: none"> - Review article - Outlines the use of an subcutaneous Intima device trial in an adult oncology setting to decrease the number of subcutaneous injections, incidence of needle phobia and decrease pain and bruising at the injection site
<p>Rouss, K., Gerber, A., Albisetti, M., Hug, M. & Bernet, V. (2007) Long term subcutaneous morphine administration after surgery in newborns. <i>Journal of Perinatal Medicine</i> 35(1), pp 79-81</p>	<p>IV</p>	<ul style="list-style-type: none"> - Case series of 20 newborn participants - Morphine administered via insuflon, viewed as a safe alternative to intravenous morphine administration
<p>SESIAHS Palliative Care Working Party, South Eastern Sydney Local Health Network, NSW Government (2011) Subcutaneous needle insertion and management, SESIAHS Palliative Care Working Party, South Eastern Sydney Local Health Network, NSW Government, 2011, Clinical Guideline</p>	<p>VII</p>	<ul style="list-style-type: none"> - Outlines the insertion and management of subcutaneous needles or cannulas in the adult and paediatric settings - Discusses the correct site, insertion technique, care and removal of the subcutaneous device

<p>Winnipeg Regional Health Authority, Canada (2010) Procedure for subcutaneous insertion, removal, medication administration and fluid administration for community palliative care patients, Winnipeg Regional Health Authority, Canada, 2010, Clinical Guideline</p>	<p>VII</p>	<ul style="list-style-type: none"> - Clinical practice guideline outlining the procedure around insertion of BD Sat-T-Intima
<p>Women's and Children's Hospital, Adelaide (2009) Indwelling Subcutaneous Catheter (Insuflon) Management, "Paediatric Nursing Clinical Standards, – Women's and Children's Hospital, Adelaide, South Australia Clinical Standard</p>	<p>VII</p>	<ul style="list-style-type: none"> - Clinical standard from tertiary paediatric hospital concerning the management of an insuflon - 5 references included to support clinical standard