

# 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](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>

Databases searched:	<input checked="" type="checkbox"/> CINAHL (Ebsco)	<input checked="" type="checkbox"/> Medline (Ebsco)	<input checked="" type="checkbox"/> Pubmed (NLM)	<input checked="" type="checkbox"/> Nursing (Ovid)	<input type="checkbox"/> Emcare (Ovid)
Keywords used:	Neonatal/paediatric ostomy/ileostomy/colostomy/management/nursing/complications/skin care/stoma care				
Search limits:	Previous 15 years				
Other search comments:					

Reference (include title, author, journal title, year of publication, volume and issue, pages)	Evidence level (I-VII)	Key findings, outcomes or recommendations
Birch, J and Sica, J. (2007) One-and two-piece colostomy appliances: merits and indications. <i>British Journal of Nursing</i> . 16(17); pp 1042 – 1047.	VII	<ul style="list-style-type: none"> <li>• Anatomy and physiology of intestinal tract.</li> <li>• Description of ostomy formation procedures.</li> <li>• Use of 1 and 2 piece systems and implications for skin care and use around each, with 1 piece appliances being less complicated however removal of whole appliance has implications for skin condition.</li> </ul>
Kargl, S, Wagner, O and Pumberger, W. (2017) Ileostomy Complications in Infants less than 1500 grams – Frequent but Manageable. <i>Journal of Neonatal Surgery</i> . 6(1); 4.	IV	<ul style="list-style-type: none"> <li>• Retrospective analysis on Very low birthweight infants and ileostomy related complications.</li> <li>• The importance of stomal placement that avoids skin creases is important in decreasing complications.</li> <li>• Ileostomy formation in VLBW infants is risky with high rates of complications.</li> <li>• Early closure where safe may decrease complications as ELBW infants can develop complications as time progresses.</li> </ul>
Nguyen, H and Houska Lund, C. (2007) Exploratory Laparotomy or Peritoneal Drain? Management of Bowel Perforation in the Neonatal Intensive Care Unit. <i>Journal of Perinatology and neonatal Nursing</i> . 21(1); pp 50 – 60.	IV	<ul style="list-style-type: none"> <li>• Background of NEC and outcomes of management strategies including stoma formation and complications in premature infants.</li> <li>• Identification of stoma related complications such as wound healing and skin breakdown described highlighting importance of understanding procedure endured by patient and careful assessment.</li> </ul>
Mansout, F, Peterson, D, De Coppi, P and Eaton, S. (2014) Effect of sodium deficiency on growth of surgical infants: a retrospective observational study. <i>Pediatric Surgery International</i> . 30; 1279 – 1284.	IV	<ul style="list-style-type: none"> <li>• Retrospective observational study of infants &lt; 1 year old who had stoma formation.</li> <li>• Weight's, serum and urinary Na/K data was collected from patient's medical records who had at least 3 results during their hospital stay.</li> <li>• Link between growth and urinary sodium deficiency confirmed.</li> </ul>

		<ul style="list-style-type: none"> <li>• Ileostomies are more likely to result in severe malnourishment as is increased length of ICU admission.</li> <li>• Optimal growth occurs at urinary Na concentrations above 30mmol/L.</li> </ul>
Butterworth, S, Lalari, V and Dheensaw, K. (2014) Evaluation of sodium deficit in infants undergoing intestinal surgery. <i>Journal of Pediatric Surgery</i> . 49(5); pp 736 – 740.	IV	<ul style="list-style-type: none"> <li>• Information obtained from a retrospective review of sodium deficits in children undergoing intestinal surgery.</li> <li>• Sodium depletion was the common finding.</li> <li>• Data tabulated and an algorithm for sodium replacement suggested based on severity of deficit.</li> </ul>
Stoma Care. Great Ormond Street Hospital. Accessed via <a href="http://www.gosh.nhs.uk/health-professional/clinical-guidelines/stoma-care">http://www.gosh.nhs.uk/health-professional/clinical-guidelines/stoma-care</a>	VII	<ul style="list-style-type: none"> <li>• Guideline based around step by step guide to changing the stoma pouch in a sequential way paying attention to skin protective strategies, identification of stoma complications with descriptions and rationales for each step.</li> </ul>
Yadav, P, Choudhury, S, Kumar Grover, J, Gupta, A, Chadha, R and Sigalet, D. (2013) Early feeding in pediatric patients following stoma closure in a resource limited environment. <i>Journal of Pediatric Surgery</i> . 48; pp 977 – 982.	II	<ul style="list-style-type: none"> <li>• Prospective and consecutive study of children with newly re-anastomosed stomas enrolled in an early feeding regime were compared with historical data of similar children who were not on an early feeding regime over a 12 month period.</li> <li>• The study supported the view that early reeding post-surgery is well tolerated and resulted in decreased hospital length of stay.</li> <li>• The underlying theory is based on increased gastrointestinal hormones and propulsive activity.</li> <li>• Recently concluded randomised controlled studies suggest early feeding does not lead to anastomotic dehiscence.</li> </ul>
Rogers, V. (2003) Managing Premmie Stomas: More than Just the Pouch. <i>Journal of Wound and Ostomy Care</i> . 30 (2); pp 100 – 110.	IV	<ul style="list-style-type: none"> <li>• Common conditions necessitating premature neonatal stoma creation explained.</li> <li>• Description of specific neonatal skin characteristics that may affect stoma appliance use such as the epidermal barrier and transepidermal absorption.</li> <li>• How to protect the skin during pouch removal in premature infants by using non-alcoholic removers.</li> <li>• Discourages the use of extra adhesives to protect skin during removal.</li> <li>• How to use pastes without alcohol and apply correctly.</li> <li>• How to use barrier creams to effectively protect the skin.</li> </ul>

		<ul style="list-style-type: none"> <li>• Descriptions of different manufacturing appliances and their characteristics.</li> </ul>
Ratliff, C, Scarano, K and Donovan, A. (2005) Descriptive Study of Peristomal Complications. <i>Journal of Wound and Ostomy Nursing</i> . 32(1); pp 33 - 37.	V	<ul style="list-style-type: none"> <li>• Descriptive study relating to 220 patients returning for a 2-month check-up post ostomy formation.</li> <li>• Complications occurred in 16% of users and these included pressure areas and skin breakdown.</li> <li>• Outcomes emphasised the importance of correct choice of appliance and individual assessments.</li> </ul>
Kent, D. (2008) Changing an Ostomy. <i>Nursing</i> . December. Accessed via <a href="http://www.nursing2008.com">www.nursing2008.com</a> .	VII	<ul style="list-style-type: none"> <li>• Step by step guide to correctly fitting an ostomy pouch, size the correct skin barrier, assess the stoma visually and adhere the stoma wafer to reduce complications of skin breakdown.</li> </ul>
Hyland, J. (2002) The Basics of Ostomies. <i>Gastroenterology Nursing</i> . 25(6); pp 241 – 244.	VII	<ul style="list-style-type: none"> <li>• Basic skin care.</li> <li>• Identification of complications and use of stoma appliances to protect skin.</li> <li>• Definitions of several types of stomas explained.</li> </ul>
Chandler, P. (2015) Preventing and treating peristomal skin conditions in stoma patients. <i>British Journal of Community Nursing</i> . 20(8); pp 386 – 388.	VII	<ul style="list-style-type: none"> <li>• Anatomy of the skin.</li> <li>• Basic skin assessment.</li> <li>• Use of silicone adhesive removers, how to template and use hydrocolloid-based products.</li> </ul>
Gause, C, Hayashi, M, Haney, C, Rhee, D, Karim, O, Weir, B, Stewart, D, Lukish, J, Lau, H, Abdullah, F, Gauda, E & Pryor, H. (2016) Mucous fistula refeeding decreases parenteral nutrition exposure in postsurgical premature infants. <i>Journal of Pediatric Surgery</i> . (51)11; pp 1759-1765.	IV	<ul style="list-style-type: none"> <li>• Historically controlled study.</li> <li>• In the studied population of premature infants with ostomy formation around a mean gestation of 28 weeks with NEC, spontaneous perforation, volvulus and meconium inspissation, the neonates assigned to the refeeding group commenced enteral feeds and achieved full enteral feeds sooner after resection.</li> <li>• They were quicker to recommence feeds and ceased parenteral nutrition earlier after re-anastomosis than the non-refeeder group.</li> </ul>
Ostomy Care and Management. (2009) Registered Nurses Association of Ontario. Toronto. Ontario. Pp 17 – 105.	I-VII	<ul style="list-style-type: none"> <li>• Document drawing on multiple reference types describing core/practice/educational/organisational and policy recommendations, evaluation guidelines, implementation strategies and processes for review.</li> </ul>

		<ul style="list-style-type: none"><li>• Used for definitions of stoma types, complications and assessments of the stoma, mucocutaneous junction and peristomal skin and effluent with descriptive words and explanations.</li></ul>
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