

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
Allwood M. Skincare guidelines for infants aged 23-30 weeks' gestation:a review of literature. Neonatal, paed & Child health Nurs., 2011, 14(1)	II	<ul style="list-style-type: none"> • Skin care guidelines for infants 23-30 weeks' gestation should not include emollients as part of routine care. Recent research indicates the routine use of emollients is contraindicated due to the increased risk of infection
Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN). Neonatal skin care. Evidence-based clinical practice guideline. Washington (DC): association of Women's Health, Obstetric and Neonatal Nurses(AWHONN); 2001 Jan. 54p	II	<ul style="list-style-type: none"> • Remove adhesives by pulling slowly parallel to the skin surface, wetting the adhesive-skin interface with water soaked cotton wool. • Avoid solvents • Emollients safe to use while newborn is under phototherapy or radiant heat
Blackburn S. Maternal, Fetal & Neonatal Physiology: A clinical perspective. Missouri, USA: Saunders Elsevier, 2007	VII	<ul style="list-style-type: none"> • The natural maturation process of the SC is dependent on the skin drying out after birth the use of emollients may delay this process. • Vernix caseosa may assist in the development of the SC
Campbell J, Zaccaria E, Baker C. Systemic candidiasis in extremely low birth weight infants receiving topical petrolatum ointment for skin care: a case control study. Pediatrics. [Internet]. 2000 [cited 2010 Feb 1; 105 (5) 1195-1203.	IV	<ul style="list-style-type: none"> • Extremely low birth weight infants (<1000g) treated with topical petrolatum ointment were associated with an increased risk for Systemic Candidiasis
Connor J, Soll R, Edwards W. Topical ointment for preventing infection in preterm infants (review). Cochrane Database of Syst Rev. (internet). 2009 (cited 22 Feb 2010) Art No:CD001150	I	<ul style="list-style-type: none"> • Daily prophylactic application of a topical ointment in premature infants increases the relative risk of coagulase-negative staphylococcal infection by 31% and increases the relative risk of nosocomial infection by 20% in treated infants (infants weighing 501-1000g). • The daily application of a topical ointment improved skin condition and reduced TEWL however this does not outweigh the increased risk of infection. • Emollients should not be part of routine care for infants 23-30 weeks gestation

<p>Darmstadt G, Dinulos J. Neonatal Skin Care. Pediatric Clinics of North America. Vol 47(4) Aug 2000</p>	<p>V</p>	<ul style="list-style-type: none"> • Keep the nappy folded away from the cord to facilitate drying • Alcohol treated cord stumps take longer to separate than when left dry • Emollients may be used during phototherapy • Emollients may interfere with adherence of adhesives • Products containing perfumes or preservatives should be avoided in all newborns • The use of powders in the nappy area should be avoided • Nappy wipes can increase cutaneous skin pH. An acidic pH is important to prevent nappy area from fecal enzymes • Consider immersion bathing for stable infants once umbilical lines are removed • Use semi permeable membranes to anchor silicone catheters • Only use electrodes containing hydrogel adhesive • No adhesive removers, especially for infants <33weeks gestation • Allow vernix to absorb naturally
<p>Frank L, Quinn D, Zahr L. Effect of less frequent bathing of preterm infants on skin flora and pathogen colonization. J Obstet Gynecol Neonatal Nurs.(Internet). 2000; 29(6)584-89</p>	<p>IV</p>	<ul style="list-style-type: none"> • Bathing can be reduced to every 4 days without increase in skin flora colonization • Use pH neutral cleansers
<p>Gregory J, Anschau N, McCutchan D, Patterson J, Martin S, Allwood M. Skincare Guidelines for babies in NICU. Kaleidoscope, The Children's health network. Jan 2011</p>	<p>VII</p>	<ul style="list-style-type: none"> • Recent studies indicate the routine use of emollients is contraindicated due to increased risk of infection • Use pH neutral cleansers when bathing. • Water only for babies <1000g • Minimize use of adhesives
<p>Kuller J. Skin care management of the low birth weight infant. In Gunderson L, Kenner C, editor(s). Care of the 24/25 week gestational age infant: A small baby protocol. 2nd ed. Petaluma (CA): NICU Ink 1995. P 107-144</p>	<p>VII</p>	<ul style="list-style-type: none"> • Use stretchy gauze to anchor probes, electrodes and limbs to arm boards.
<p>Lund C, Kuller J, Lane A, Lott J, Raines D, Thomas K. Neonatal skin care: Evaluation of the AWHOON/NANN research-based practice projection knowledge and skin care practices. J Obstet Gynecol Neonatal Nurs. (Internet). 2001 (cited 1 Feb 2010); 30(1)30-40</p>	<p>VI</p>	<ul style="list-style-type: none"> • pH neutral cleansers may be used for bathing. Only water for bathing infants <1000g
<p>Lund C, Kuller J, Lane A, Lott J, Raines D. Neonatal skin care: The scientific basis for practice. J Obstet Gynecol Neonatal Nurs. [Internet]. 1999 May/June [cited 1 Feb 2010];28(3)241-254.</p>	<p>VII</p>	<ul style="list-style-type: none"> • Some adhesives have a stronger bond to the epidermis than the bond between the epidermis and the dermis, the removal of adhesives can result in epidermal stripping • Remove adhesives with water soaked cotton balls or use petrolatum to loosen tape • Premature infants aged 24-34 weeks gestation skin pH is >6 at birth and takes 3 weeks to drop to a pH of 5. During this time the neonatal skin is vulnerable to infection

Lund C, Osborne J, Kuller J, Lane A, Wright J, Raines D. Neonatal skin care: Clinical outcomes of the AWHNN/NANN evidence-based clinical practice guidelines. J Obstet Gynecol Neonatal Nurs. 2001, 30(1)41-51.	V	<ul style="list-style-type: none"> • Use adhesives sparingly to secure life support, monitoring and other devices in all newborns • Implementation of a skin care guideline in NICU/SCN improved skin condition reflected by less visible dryness, redness and skin breakdown
Lund C, Nonato L, Kuller J, Frank L, Cullander C, Durand. Disruption of barrier function in neonatal skin associated with adhesive removal. J Pediatr. [Internet]. 1997 [cited 25 Jan 2010];131 (3)367-372	III	<ul style="list-style-type: none"> • Solvents are not recommended in premature neonates because of the increased risk of absorption through the underdeveloped SC
New Zealand Dermatological Society (NZDS), http://dermnetnz.org/ , May 2013	VII	<ul style="list-style-type: none"> • Erythema toxicum neonatorum, Neonatal milia, Miliaria, Pitrosoprum folliculitus definitions.
Nopper A, Horii K, Sookdoe-Drost S, Wang T, Mancini A, Lane A. Topical ointment therapy benefits premature infants. J Pediatr. (Internet). 1996 (cited 3 Feb 2010); 128 (5)660-669.	II	<ul style="list-style-type: none"> • Emollients may be used during phototherapy. In this study a minimal increase in cutaneous temperature(0.18%) after ointment application (Aquaphor) was observed in infants under radiant warmers or phototherapy. There was no evidence of hyperthermia or burns
Royal Prince Alfred Hospital. RPA Newborn Care Guidelines: Small Baby Protocol. (Internet) 2009. Available from: http://www.sswahs.nsw.gov.au/rpa/neonatal/html/docs/small_baby.pdf	VII	<ul style="list-style-type: none"> • Only use gel electrodes • Use a soft air mattress to alleviate pressure • Be proactive with skin care- observe and clean areas such as the neck, behind the ears, axillae and groin
Varda, K & Behnke R. The effect of timing of initial bath on newborn's temperature. JOGNN. Jan/Feb 2000 27-32	I	<ul style="list-style-type: none"> • Providing the neonate's condition is stable, newborns may be bathed after 1 hour of age when appropriate care is taken to support thermal stability. To minimize heat loss after the first bath, immediately put a nappy and hat on and wrap in warm blankets. When infant temperature is within normal limits(after approximately 10 minutes) dress and re wrap in dry warm blankets
Visscher M. Update on the use of topical agents in neonates. Newborn Infant Nurs Rev.2009 March 31-47	III	<ul style="list-style-type: none"> • At birth the full term skin pH is relatively neutral, decreasing significantly in the first 1-4 days continues to drop during the first 3 months • SC structural integrity is directly related to gestational age. At 23 weeks SC is nearly absent, by week 26 a few layers. SC is not well formed until 34-35 weeks. Premature infants therefore at risk for high water loss, thermal instability and increased exposure to environmental irritants and infectious agents. • To prevent nappy rash, the nappy area should be cleansed with a soft cloth and oil/water. Skin cleansing wipes usually contain a surfactant that can damage the SC barrier and cause skin irritation
Zupan J, Garner P, Omari A. Topical umbilical cord care at birth. <i>The Cochrane Database of systematic Reviews</i> 2004, Issue 3. Art. No.: CD001057. DOI: 10.1002/14651858.CD001057.pub2.	I	<ul style="list-style-type: none"> • No difference was demonstrated in preventing infection of cords treated with antiseptics compared with dry cord care or placebo • Antiseptics prolong the time to cord separation

