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


<table>
<thead>
<tr>
<th>Reference (include title, author, journal title, year of publication, volume and issue, pages)</th>
<th>Evidence level (I-VII)</th>
<th>Key findings, outcomes or recommendations</th>
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• By 32 weeks epidermal development is mainly complete
• In the first 2 weeks of life the stratum corneum matures at an accelerated rate for premature neonates; this development is less rapid for gestations below 27 weeks
• Humidity decreases transepidermal water loss in premature neonates
• Summary of small randomized controlled trial which showed that nursing neonates in humidity greater than 75% beyond 14 days of life may slow stratum corneum formation, and ideal humidity is 85% in first week followed by 50% humidity, adjusted over 12-24 hours, to allow stratum corneum formation |
| Association of Women’s Health, Obstetric and Neonatal Nurses (2013). Neonatal Skin Care (Third Edition) – Evidence Based Clinical Practise Guideline. | VII | • Comprehensive evidence based guideline developed by the Association of Women’s Health, Obstetric and Neonatal Nurses
• Detailed description on Bathing, Umbilical Cord Care, Disenfectants, Perineal Dermatitis & Wipes, Medical Adhesives, Emollients, Transepidermal water loss & Skin Breakdown.
• Supports the use of emollients in the preterm infant with identification of the slight increased risk of infection
• Identification of best practice disinfectant use – 0.5% Chlorhexidine in 70% Isopropyl Alcohol for Term Infants and 0.1% Chlorhexidine Gluconate in Preterm Infants
• Supports the use of water and paraffin or silicone based adhesive removers over the use of solvent based adhesive removers. |
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<th>Source</th>
<th>Page</th>
<th>Notes</th>
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<tr>
<td>Clemison, J., &amp; McGuire, W. (2016). Topical emollient for preventing infection in preterm infants (review). Cochrane Database of Systematic Reviews 2016, Issue 1. Art. No.: CD001150. DOI: 10.1002/14651858.CD001150.pub3.</td>
<td>I</td>
<td>Topical emollients are moisturising treatments applied directly to the skin to protect the stratum corneum, enhance epidermal barrier function and reduce evaporative water loss The available data reviewed did not provide any evidence that routine use of emollient ointments reduces the incidence of invasive infection in preterm infants Review of the available data found that routine use of emollients in the preterm infant may increase the risk of infection Routine application of topical emollients in preterm infants improved skin condition as measured by skin score and evaporative water loss</td>
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<td>Expert Forum: Neonatal Skin Health and Skin Care Symposium 2015. <a href="http://www.researchreview.com.au">www.researchreview.com.au</a></td>
<td>VII</td>
<td>Protecting newborn skin is a challenging but important aspect of neonatal care Discussion of the defective skin barrier present in infants during the first few weeks of life Importance of maintaining and promoting development of the newborns skin ‘acid mantle’, which inhibits the growth of pathogenic microorganisms and gives immunological properties to the skin Importance of conducting a ‘skin assessment’ in addition to a ‘risk assessment’ Advocated the use of the NEONATAL SKIN CONDITION SCORE Prevention of atopy</td>
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- Advocates for the daily application of an emollient in newborns at risk of atopic dermatitis/eczema |
- Advocates for the daily application of an emollient in newborns at risk of atopic dermatitis/eczema
- Results show that daily application of an emollient is a safe and effective approach to prevention of atopic dermatitis/eczema |
- Identification of nappy rash
- Product recommendation for treating nappy rash |
| The Royal Women’s Hospital (2016). Clinical Practise Guideline - Skin Care for Newborn Babies. | VII | • Supports the use of emollients to restore lipid levels, improve hydration, preserve natural moisturising factors and offer significant buffering capacity to normalize skin pH and maintain the microbiome  
• Advocates for the use of pH neutral cleansers during bathing  
• Cleanse the perineal area with warm water soaked absorbent towels or cotton wool  
• Avoid using packaged baby wipes on the perineal area  
• Do not use solvent based adhesive removers due to toxicity from absorption through the skin  
• Regular ‘skin assessment’ in addition to pressure risk assessment |
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<td>Varda, K., &amp; Behnke, R. (2000). The effect of timing of initial bath on newborn’s temperature. <em>Journal of Obstetric, Gynecologic &amp; Neonatal Nursing</em>, 27 (32).</td>
<td>I</td>
<td>• 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</td>
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