



**GUIDELINE**

**Skin Care**

<b>Scope (Staff):</b>	Nursing and Medical Staff
<b>Scope (Area):</b>	NICU KEMH, NICU PCH, NETS WA

**Child Safe Organisation Statement of Commitment**

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.

**This document should be read in conjunction with this [disclaimer](#)**

Provide parents/carer with the information sheet "[Looking after your baby's skin in hospital](#)"

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## Aim

Skin care is crucial in the management of neonates and requires timely assessment and implementation of interventions to promote optimal skin function, integrity and protection.

## Risk

Compromised skin integrity leads to an increased risk of infection, requires healing and delays maturation. Timely recognition and management of compromised skin is critical to avoid adverse outcomes, such as infection and scar formation.

## Background

The skin acts as the primary barrier against transepidermal water loss, microorganisms and other external factors and is critical in the regulation of temperature, water and electrolytes.

The skin of the extremely preterm infant is particularly fragile due to immature and incomplete stratum corneum formation. This results in high transepidermal water loss (TEWL), greater absorption of topical agents, ineffective thermoregulation, and vulnerability to epidermal stripping from tape and other chemical or mechanical trauma.

Newborn infants admitted to a neonatal unit are prone to developing skin injury and/or pressure injury due to:

- Unrelieved or excessive pressure from medical devices
- Unrelieved or excessive pressure on dependent body parts, especially bony prominences
- Prematurity (limited subcutaneous fat, immature skin), and/or
- Medical condition that and/or immobility restricts repositioning schedules and options.

## Screening and Assessment Tools

Use the following validated skin assessment and pressure injury risk assessment tools:

- [Neonatal Skin Condition Tool \(NSCS\)](#) for skin integrity
- [Glamorgan Scale \(Modified\)](#) Pressure Injury Risk Assessment Tool (GS)

## Neonatal Skin Condition Score (NSCS) Tool

Perform a NSCS assessment on admission and every day of their in-patient stay.

- NSCS score is to be documented on the Observation chart **within the first 4 hours of admission** to the neonatal unit then each nursing shift thereafter.
- Refer to the [Routine Skin Care](#) & [Skin Care and Pressure Injury Prevention Reference Guide](#) below to assist with the implementation plan of the care needed.

- Where an infant score is >3, notify the CNC / CNS and medical staff to document an action plan in the patient’s progress notes.
- For any loss of skin integrity or skin break down refer to [Skin Care Treatment Guide](#) and commence a Wound Assessment Form MR492.
- Notify the incident in Datix CIMS. Note: for skin tears/unexplained cuts, bruising, wounds notify as Tier 1: Patient Accidents/Falls, Tier 2: Contact/collision with objects (not sharps), Tier 3: Contact resulting in skin tear

Neonatal Skin Condition Score (NSCS)					
DRYNESS		ERYTHEMA		BREAKDOWN	
1	normal, no sign of dry skin	1	no evidence or erythema	1	Non evident
2	dry skin, visible scaling	2	visible erythema, <50% body surface	2	small, localized areas
3	very dry skin, cracking/fissures	3	visible erythema, ≥50% body surface	3	extensive
Score 1-3 for each category: Perfect Score = 3, worst score = 9					

(This tool is designed to facilitate assessment of skin condition. It is copyright of Association of Women’s Health, Obstetric and Neonatal Nurses (AWHONN) and was developed for the AWHONN/NANN Neonatal Skin Care Research-Based Practice Project (2007) and is reproduced with their kind permission)

## Glamorgan Scale (GSM) – Modified Pressure Injury Risk Assessment

Appropriate use of a validated risk assessment tool identifies infants at-risk so that timely [prevention strategies](#) can be implemented. Pressure from medical devices and the degree of immobility are the 2 key risk factors which place infants at most risk.

- A GS score is to be documented on the observation chart **within the first 4 hours of admission** then each nursing shift thereafter, and additional if there is any deterioration in infant condition.
- Most infants admitted to NICU initially will score 10 or higher therefore the risk of developing pressure injuries remains high, and a prevention plan is needed to prevent injury.
- Refer to the [Skin Care and Pressure Injury Prevention Reference Guide](#) to assist with identification of infants at risk and the care needed, and [Pressure Relieving](#) devices available for use.

Pressure Injury Risk Assessment – Glamorgan Scale Modified [GS(m)]		
<ul style="list-style-type: none"> <li>• Complete a PI Risk Assessment at the commencement of each nursing shift.</li> <li>• Document the score on the observation chart.</li> <li>• It is not necessary to disturb the infant to complete the assessment.</li> <li>• Add score from choice 1-4, then add this to the score from point 5 (medical devices) to get the total risk score. See examples below.</li> </ul>		
Risk Assessment		Score
1	Infant cannot be moved without great difficulty or deterioration in condition. E.g., a ventilated infant who de-saturates with position changes or in certain positions. Poor peripheral perfusion: cold extremities, capillary refill > 2 seconds / cool mottled skin	20
2	Infant unable to change his/her position without assistance/reduced body movement. E.g., an infant may be unable to move themselves, but carers can move the infant and change his/her position without deterioration in vital signs.	15
3	Some mobility but reduced for age. E.g., infant has some ability to change their own position, but this is limited / restricted (infants on CPAP, nested, IV splints & fluids).	10
4	Normal mobility for age	0
5	Medical devices (equipment) – If no equipment in use, score = 0 If equipment in use and any device pressing, rubbing, or taped on the skin for long enough or with enough force that could cause pressure damage if not removed, then score = 15	15
<p><b>Maximum that can be scored = 35</b></p> <p>See PI action plan Skin Care Reference guide to assist with planning patient care according to score. Review for ongoing care, and refer to <a href="#">Appendix 2 (pressure relieving devices)</a></p>		

### Examples

1. 28-week gestation infant, 3 weeks of age on HFJV with a peripheral IV. Infant is prone to having desaturations to 30-40% with handling and repositioning. Using the table above: score = 20 and add 15 for 'yes' to medical equipment, total score = 35
2. 35-week gestation infant, 2 weeks of age swaddled and nursed in an open cot with no monitoring attached. Infant does have a nasogastric tube insitu. Using the table above: Score = 0 and add 15 for 'yes' to medical equipment, total score = 15. Note if this infant has the NGT removed the score would then be 0 (No/low risk)

Pressure Injury Action Plan		
<a href="#">See Appendix 4: Skin Care and Pressure Injury Prevention Guide</a>		
Score	Category	Action
0	Not at risk	Continue GS scoring per shift. Inspect skin integrity as per NSCS
10+	At risk	<ul style="list-style-type: none"> <li>Continue GS scoring per shift. Inspect skin integrity as per NSCS.</li> <li>Relieve pressure by repositioning no longer than 4 hourly.</li> <li>Resite monitoring devices 4 hourly (e.g., O<sub>2</sub> saturation probe)</li> <li>Consider the use of pressure redistribution surface/device.</li> </ul>
15+	High risk	<ul style="list-style-type: none"> <li>Continue GS scoring per shift. Inspect skin integrity as per NSCS.</li> <li>Relieve pressure by repositioning no longer than 4 hourly.</li> <li>Inspect skin with each repositioning.</li> <li>Ensure infant is not lying on any lines or cords.</li> <li>Resite devices at least 4 hourly (e.g., O<sub>2</sub> saturation probe)</li> <li>Use pressure redistribution surface/devices.</li> </ul>
20+	Very high risk	<ul style="list-style-type: none"> <li>Continue GS and NSCS scoring per shift.</li> <li>Relieve pressure by repositioning no longer than 4 hourly.</li> <li>Inspect skin with each repositioning.</li> <li>Sheets wrinkle free, ensure lines/cables are not under the infant.</li> <li>Resite monitoring devices at least 4 hourly (e.g., SaO<sub>2</sub> probe)</li> <li>Use pressure redistribution surface/devices.</li> </ul>
<p><b>NOTE:</b> In some instances, infant condition may not permit change of position 4 hourly.</p> <ul style="list-style-type: none"> <li>Consultation with shift coordinator +/- CNC is to occur to ensure measures are taken to reduce the risk of pressure injuries.</li> <li>Document the agreed plan clearly in the patient progress notes.</li> <li>Plans are to be reassessed daily or when there is a change in patient condition.</li> </ul>		

## Pressure Injury Management

On detection of a pressure injury use the [Pan Pacific pressure injury classification system for neonates and children](#) to stage the injury and do the following:

- Inform Coordinator, CNC/CNS and request medical review.
- Perform pain scoring and consider pain relief.
- Identify when and how the injury occurred (causative factors, device related (CPAP prongs and hat sizing, saturation probe), decreased mobility (sedated, muscle weakness) or poor tissue perfusion (extreme prematurity, cooling).
- Complete a Wound Assessment and Management Plan MR492 for the management of the wound and any treatment/dressing needed. Refer to specialist teams as appropriate i.e., Stoma Therapist, Plastics or Surgical Team. Document commencement of MR492 in Progress notes and Neonatal Problem List MR485.03. See [Skin Care Treatment Guide](#)

- Notify the incident in Datix CIMS and document in progress notes that incident notified.
- Review nutritional status of patient with Dietician and Medical Team.
- Inform Parent/Carer of the presence of the pressure injury, potential cause and the management plan.

## Routine Skin Care

Refer to the appropriate respiratory support guideline for frequency of nappy changes and repositioning.

<b>Trans epidermal water loss (TEWL)</b>	
<p>Commence humidity &lt;32/40 or less than 1500g BW. Babies &lt;27/40 commence in 80% humidity. Infants at high risk of skin breakdown.</p> <p>Commence weaning humidity during the first week of life when the infant can maintain a per axilla temperature within normal range. Wean at 5% intervals over 7days to ~ 50%.</p>	<p>Humidity reduction should be alternated with incubator temperature reduction until suitable temp regulation is maintained.</p> <p><a href="#">Thermoregulation</a> guideline</p>
<b>Emollients/barrier creams (skin moisturiser)</b>	
<p><a href="#">Coconut Oil</a> is to be used to maintain and improve skin integrity in preterm infants born &lt;30 weeks gestation and continued until 37 weeks corrected gestational age.</p>	<p>Contact CNC if concerned about skin integrity.</p>
<b>Minimal cleanse</b>	
<p>Infant to be washed with water wipes every <b>FOUR</b> days until able to be bathed. Face area to be washed with sterile water and cotton balls.</p> <p>Cleaning the eyes should not be done routinely. If eye toilet necessary use sterile cotton wool &amp; sterile NaCl, see <a href="#">Eye Care</a> guideline</p>	<p>Regular bathing or washing of the skin using lotions and soaps in the sick or preterm infant has been shown to alter the skin pH. The acid mantle and natural flora of the skin is an important defence against infection.</p> <p>Procedure of washing sick or preterm neonate can cause physiological distress: increase / decrease in heart rate, desaturations, and hypothermia.</p> <p><a href="#">Thermoregulation</a> guideline</p>
<b>Chlorhexidine Wash Procedure</b>	
<p>Used on infants in incubators on day 1 then on alternate days. Used on infants in open cots on day 1 then on alternate days until having routine baths.</p>	<p>Chlorhexidine should never be applied to excoriated or ulcerated areas of skin.</p> <p><a href="#">Chlorhexidine Wash Procedure</a></p>
<b>Bathing</b>	

<ul style="list-style-type: none"> <li>• Face area to be washed with sterile water and cotton balls.</li> </ul> <p>For <b>Level 2</b> infants NOT in SCN 3 that:</p> <ul style="list-style-type: none"> <li>• Maintained temperature &gt;48 hours after grading out of incubator,</li> <li>• Have no intravascular devices,</li> <li>• <b>Level 3</b> babies &gt; 35 weeks GA and remain on CPAP / HHF may be bathed in consultation with CNC. Decision to be documented in medical record for consistency in care.             <ul style="list-style-type: none"> <li>○ Use portable bath in SCN 2. Fill up at bath tap in SCN 2 and bring to bedside.</li> </ul> </li> </ul>	<p>The first bath is a significant milestone for parents. The first bath must be discussed with parents and occur at an agreed arranged time by parents and nursing staff. The first bath is undertaken by nursing staff with parents being taught how to bath their baby.</p> <p>Where possible, incorporate bathing into other cares such as weighing and measuring.</p>
<p><b>Skin antiseptis/skin cleaning - Aseptic technique is to be use for all procedures</b></p>	
<p>≤ 27 weeks - use Povidine-iodine 10% swab.          &gt; 27 weeks - use 1% Chlorhexidine solution.</p> <p><u>Clean procedures</u> (venepuncture, heel prick)</p> <p>≤ 27 weeks - use Povidine - iodine 10% swab.          &gt; 27 weeks - use Chlorhexidine 1%/alcohol 70% swab.</p>	<p>Wash off excess solution after the procedure with sterile water or saline.</p> <p>See <a href="#">Aseptic Technique in the NICU guideline</a></p>
<p><b>Tapes/adhesives/dressings</b> See Appendix 6: <a href="#">Medical Adhesive Related Injury (MARSI)</a></p>	
<p>IV TAPING FOR INFANTS ≤ 27 WEEKS (avoid Tegaderm)</p> <ul style="list-style-type: none"> <li>• 3 small Leukostrips.</li> <li>• Small sized splint.</li> <li>• 3 large Leukostrips.</li> </ul> <p>IV TAPING FOR INFANTS &gt; 27 WEEKS</p> <ul style="list-style-type: none"> <li>• 3 small Leukostrips.</li> <li>• Appropriately sized splint.</li> <li>• Tegaderm.</li> <li>• Leukoplast tape (backed with cotton wool)</li> </ul>	<p>Use the ≤ 27-week strapping policy If there are concerns regarding skin integrity irrespective of the age.</p> <p>V bungs must be flushed with 0.5ml of Normal Saline every 4-6 hours to ensure patency.</p> <p>Document the date of insertion and position of cannula.</p> <p><a href="#">Tape removal</a> - use SKIN-PREP® protective wipe or ConVaCare® adhesive remover wipe</p>
<p><b>Intravenous infiltration</b></p>	
<p>Tape IV so site visible and observe the site at least hourly. Document PIVAS scores.</p> <p>Pay attention to pump pressures. Set initial pressure limit at 50-100cm H<sub>2</sub>O above baseline and monitor fluctuations closely.</p>	<p>Most at risk VLBW, IV TPN, calcium, sodium bicarbonate or inotropes.</p> <p>See <a href="#">Extravasation Injuries</a> and Medication Protocols <a href="#">Hyaluronidase</a></p>

## Adhesive Tapes and Dressings to secure Medical Devices

Skin injury can occur due to incorrect removal techniques of adhesive tapes and dressings. Refer to Appendix 6: [Medical Adhesive Related Injury \(MARS\)](#) table for correct removal of adhesives.

## Management of Skin Breakdown

Skin breakdown requires immediate review. Notify CNC and Medical Team. Complete Wound Assessment and Management Plan MR492, communicate the plan for management of the wound in conjunction with appropriate team: Stoma Therapist, Plastics or Surgical as required. Medical photography should be completed with parental consent.

The treatment plan should be determined with reference to the [Skin Care Treatment Guide](#). Refer to [Extravasation Injuries](#) guideline for information for skin injuries caused by extravasation.

## Nappy Care

**Gaia® WaterWipes** to be used nappy changes of:

- All Level 3 babies in SCN3 and SCN2 - including term babies
- All babies in incubators
- All babies less than 1500g
- All babies with intravascular devices.

Other infants can use dry soft wipes and warm tap water to dampen the wipes for nappy changes.

Nappy care frequency 3 to 6 hourly depending on respiratory support and clinical condition. Unstable ventilated infants may be left longer with consultation with CNC/CNS.

## Nappy Dermatitis

Is an acute inflammatory reaction of the skin in the perineal region. A wound care plan is necessary for skin breakdown resulting from nappy dermatitis. Refer to the [Skin Care Treatment Guide](#) for appropriate nappy care plan. Classified as:

- **Mild** – Erythema (2-10%), intact skin, some irritation detected.
- **Moderate**- Erythema (10-50%) covering areas including buttocks, genitals, pubic area, and upper thighs **or** very intense redness in a small area (<2%), few papules/pustules, superficial opening of the skin involving the epidermis.
- **Severe**- Erythema (>50%) covering areas including buttocks, genitals, pubic area and upper thighs **or** very intense redness in a small area (2-10%), shiny, bleeding, many or clustered papules/pustules, deep dermal open skin with damage to the dermis.



- **Candida Albicans (Thrush)**- Severe bright red elevated patches that can be found around the anus, top of the thighs and in the skin folds. Vesicles (like a small, raised cyst or fluid-filled blister) and pustules around the rash is also an indication of thrush.


Related CAHS internal policies, procedures and guidelines
<p>Neonatology Clinical Guidelines</p> <ul style="list-style-type: none"> <li>• <a href="#">Aseptic Technique in the Neonatal Unit</a></li> <li>• <a href="#">Brainz Monitor: Low Impedance Needle Electrodes</a></li> <li>• <a href="#">Chlorhexidine Wash Procedure</a></li> <li>• <a href="#">Continuous Positive Airway Pressure (CPAP)</a></li> <li>• <a href="#">Developmental Positioning Guideline</a></li> <li>• <a href="#">Extravasation Injuries</a></li> <li>• <a href="#">Humidified High Flow Nasal Cannula Therapy</a></li> <li>• <a href="#">Monitoring and Observation Frequency</a></li> <li>• <a href="#">Neonatal Abstinence Syndrome (NAS)</a></li> <li>• <a href="#">Peripheral Intravenous Cannula Insertion and Management</a></li> <li>• <a href="#">Thermoregulation</a></li> <li>• <a href="#">Transcutaneous Monitoring (TCM)</a></li> <li>• <a href="#">Ventilated Neonate: Nursing Care of</a></li> </ul> <p>Neonatology Medication Protocols</p> <ul style="list-style-type: none"> <li>• <a href="#">Coconut Oil</a></li> <li>• <a href="#">Hyaluronidase</a></li> <li>• <a href="#">Chlorhexidine Wash Procedure</a></li> <li>• <a href="#">Stratamed</a></li> </ul> <p>CAHS Policy</p> <ul style="list-style-type: none"> <li>• <a href="#">Pressure Injury Prevention and Management</a></li> </ul>

Useful resources
<p><a href="#">Looking after your baby's skin in hospital</a></p> <p><a href="#">Fact Sheet: Preventing pressure injuries and wound management (safetyandquality.gov.au)</a></p>

References and related external legislation, policies, and guidelines
<p><a href="#">Australian Commission on Safety and Quality in Health Care, Standard 5: Comprehensive Care Standard – Minimising Patient Harm Actions</a></p> <p><a href="#">Prevention and Treatment of Pressure Ulcers/Injuries: Clinical Practice Guideline 2019</a> (European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel and Pan Pacific Pressure Injury Alliance)</p>
<ol style="list-style-type: none"> <li>1. Association of Women's Health, Obstetric and Neonatal Nurses. Neonatal skin care: Evidence based clinical practice guideline (4<sup>th</sup> Edition). 2018.</li> <li>2. European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel and Pan Pacific Pressure Injury Alliance. Prevention and Treatment of Pressure Ulcers/Injuries: Clinical Practice Guideline. The International Guideline. Emily Haesler (Ed.). EPUAP/NPIAP/PPPIA:2019</li> </ol>

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This document can be made available in alternative formats on request.

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Healthy kids, healthy communities

Compassion

Excellence

Collaboration

Accountability

Equity

Respect

Neonatology | Community Health | Mental Health | Perth Children’s Hospital

## Appendix 1: Skin Care Treatment Guide

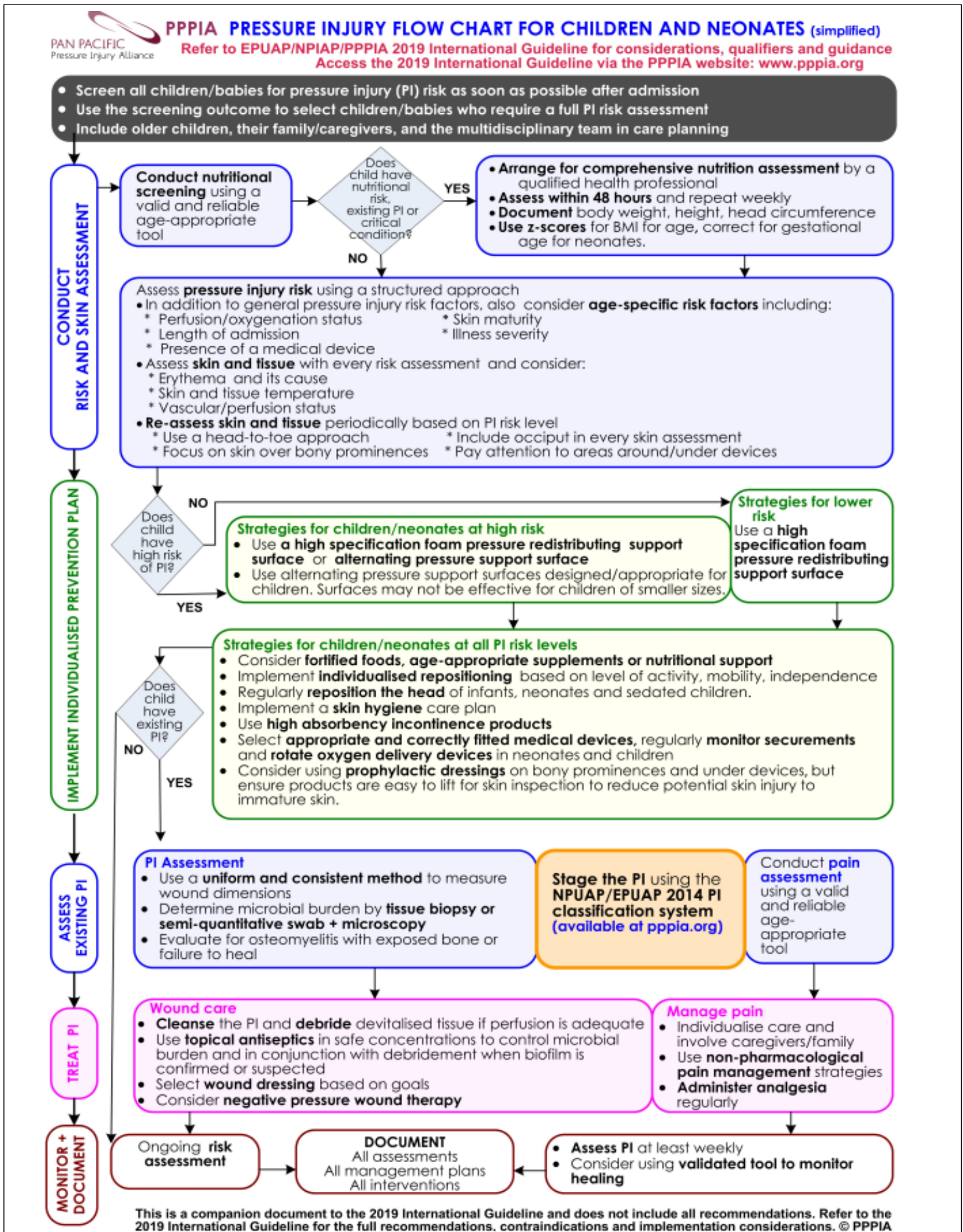
<b>Routine Skin Care and Management of Skin Breakdown. Document on MR492.00 Wound Assessment and Management Tool</b>		
Product	Indicated for	Additional Information
<a href="#">COCONUT OIL</a>	<b>ROUTINE SKIN CARE (PROPHYLAXIS).</b> Continue until 37 weeks or discharge.	Apply as part of routine cares.
<b>DERMEZE</b> An emollient containing white soft and liquid paraffin (Mineral oil).	<b>SPECIFIC SKIN CONDITIONS (e.g., ICHTHYOSIS)</b> The skin barrier is more impaired when the skin is excessive dry, with ichthyoses (thickened, scaly), or collodion skin.	Only use when specifically ordered by a Consultant for selected conditions. Note: in extremely preterm infants can increase risk of invasive infection.
<a href="#">NYSTATIN (1<sup>st</sup> line)</a>	<b>MUCOCUTANEOUS CANDIDIASIS (THRUSH)</b>	Use a combination of both oral and topical treatment.
<a href="#">MICONAZOLE (2<sup>nd</sup> line)</a>		
<a href="#">STRATAMED</a> An advanced wound dressing which protects against microbial and chemical invasion	<b>SKIN BREAKDOWN FROM PRESSURE, FRICTION, HEAT OR CHEMICAL INJURIES (E.G. NASAL SEPTUM, ABDOMINAL SKIN &amp; SURGICAL SCARS)</b> Apply a thin layer of Stratamed to the affected area. Allow gel to dry. Should be dry within 5 to 6 minutes. If it takes longer to dry, too much has been applied. Apply <b>TWICE</b> daily.	<b>Take clinical photo of skin breakdown prior to commencing treatment and after 4 days of treatment.</b> Ensure the affected area of skin is clean. Secondary dressing not required.
<b>MEPITEL LITE DRESSING</b> A gentle two-sided contact layer with <i>Safetac</i> , designed to mould softly to the skin without sticking to the moist wound.	<b>SECOND LINE TREATMENT FOR SKIN BREAKDOWN IF STRATAMED UNSUCCESSFUL</b> To be used on wounds such as skin tears, skin abrasions, sutured wounds, partial thickness burns and lacerations. Transparent dressing allows assessment of healing.	Cleanse area with saline prior to application of Mepitel. May be left insitu for 14 days.
<b>MEPILEX BORDER DRESSING</b> A five-layer dressing with <i>Safetac</i> , designed to minimise damaging the wound and surrounding skin.	<b>DRESSING FOR SKIN BREAKDOWN AT PRESSURE AREAS (HEELS AND BONY PROMINENCES)</b> The foam backing reduces the risk of pressure areas developing. Suitable for both acute and chronic wounds.	Cleanse area with saline prior to application of Mepilex. Mepilex may stay on for 7 days, depending on the condition of the wound and surrounding skin.
<b><i>Not appropriate for use &lt; 27 weeks gestation due to its adhesive properties.</i></b>		

<p><b>Redi-wipe®/Tru-wipe®/Waterwipes</b></p>	<p><b>STANDARD PERINEAL HYGIENE</b></p> <p>Allow to air dry or pat skin dry. Take care not to drag the skin during removal of faeces and urine or whilst drying. Note: can also use warm water ± mild soap and unsterile cotton wool balls.</p>	<p>Change nappies at least 4-6 hourly.</p>
<p><b>SUDOCREM</b></p>	<p><b>MILD NAPPY DERMATITIS/PERINEAL EXCORIATION</b></p> <p>After cleaning, apply a <b>thin layer</b> as a barrier over the entire area at each nappy change, change nappies at least 4 hourly. Use water and cotton balls to clean.</p>	<p>Also consider exposing the buttocks to room air BD. Consider Thermoregulation.</p>
<ol style="list-style-type: none"> <li>1. <b>Aqueous cream</b></li> <li>2. <b>Cavilon spray (KEMH)/ Cavilon skin barrier wipe (PCH) BD</b></li> <li>3. <b>Conveen Critic Barrier</b></li> </ol>	<p><b>MODERATE/SEVERE NAPPY DEMATITIS/ PERINEAL EXCORIATION WITHOUT SKIN BREAKDOWN</b></p> <p>Clean with aqueous cream on dampened cotton wool and allow skin to dry. Apply Cavilon spray (KEMH) or 3M Cavilon skin barrier wipe (PCH) BD, allow skin to dry. This may take 30 seconds. Apply a thin layer of Conveen Critic Barrier over the entire area at each nappy change. Change nappies with all feeds and in between feeds if faeces present.</p> <p>Subsequent nappy changes, try to only remove stool, take care not to drag skin during cleaning. Reapply barrier and Conveen Critic Barrier as needed.</p> <p>Refer to PCH <a href="#">Perianal Skin Care guideline</a></p>	<p>Consider exposing the buttocks to room air BD.</p> <p>Try to leave barrier intact but if skin showing through barrier layer, use aqueous cream to remove barrier taking care not to drag the skin.</p> <p>When skin healed revert to sudocrem or standard hygiene regime</p>

## Appendix 2: Pressure Relieving Devices

Device	Location	Guide for use
Coziny 100 Air alternating pressure relief mattress	KEMH PCH	<ul style="list-style-type: none"> <li>• &lt; 3.5 kg</li> <li>• Can fit into incubator.</li> <li>• All muscle relaxed infants</li> <li>• All infants with severe HIE (not to be used during active cooling)</li> <li>• Neonates with an inability to move</li> <li>• Consider for infants ventilated on Sensormedics ventilator</li> </ul>
Coziny 200 Air alternating pressure relief mattress	KEMH PCH	<ul style="list-style-type: none"> <li>• 3.0 -10 kg</li> <li>• For overhead warmer use</li> <li>• Neonates with an inability to move &amp; muscle relaxed infants</li> <li>• All infants with severe HIE (not to be used during active cooling)</li> <li>• Consider for infants ventilated on Sensormedics ventilator</li> </ul>
Giraffe warmer pressure diffusing mattress	KEMH	Neonates with reduced mobility, nursed on overhead warmer
Drager warmer gel mattress	KEMH	Any neonate nursed on Drager overhead warmer
Omnibed pressure diffusing mattress	KEMH	Omnibed incubators
Gelliroll mattress for cooling	KEMH PCH	All infants being actively cooled
Sheep skin	KEMH PCH	Preterm infants on respiratory support. Or as individually assessed.
Comfeel	KEMH PCH	NAS, PRS infants over bony prominences to reduce injury by friction
Dermis Plus	KEMH	<ul style="list-style-type: none"> <li>• All neonates &lt;750g (under head)</li> <li>• All muscle relaxed infants</li> <li>• Neonates with identified pressure injury over a bony prominence</li> <li>• Consider for infants with severe HIE or other risk factors</li> </ul>

## Appendix 3: Pressure Injury Risk Assessment Flow Chart



## Appendix 4: Skin Care and Pressure Injury Prevention Guide

<b>Skin Care and Pressure Injury Prevention Reference Guide</b>	
Document use of pressure relieving devices, repositioning of infant and re-siting of all probes.	
<b>At risk infants</b>	<b>Care considerations and pressure relieving options</b>
Muscle relaxed / sedated / vascular compromise / therapeutic Hypothermia / post- op / HFJV / HFOV	Sheepskin or Gel mattress or Alternating air mattress Other positioning aids include gel wedges, positioning bolsters, gel protectors, fat pads, ear pads, Comfeel applied to pressure points.
Nasal CPAP/HHF <a href="#">CPAP guideline</a>	Hat type and size, prong size, mask, Comfeel to septum, Neoseal. Use of other positioning aids above as required.
ETT <a href="#">Care of ventilated infant guideline</a>	Maintain alignment, use of positioning aids. Use of other positioning aids above as required.
ECG leads	Check around ECG site daily, replace leads every 7 days +/- after bathing.
TCM <a href="#">Transcutaneous Monitoring guideline</a>	<27/40 and <14 days - set transducer temp at 41°C/rotate between 2 sites 2hourly. All others re-site 3-4hourly or as directed
Temperature probe	Do not position underneath infant, re-site <u>at least</u> every 24 hours Document re-siting of probe
Pulse oximeter <a href="#">Monitoring and Observation Frequency</a>	Re-site 2-4 hourly, check site integrity at change time. Do not over tighten Strappit.
IV splints/taping	Refer to <a href="#">Peripheral Intravenous Cannula Insertion and Management</a> guideline. Maintain anatomical alignment of limb. Do not over tighten tape.
Brainz monitor	Assess sites 3-4 hourly. Review <a href="#">Brainz Monitor: Low Impedance Needle Electrodes</a> guideline
NAS <a href="#">Neonatal Abstinence Syndrome</a>	Consider use transparent dressings to prevent friction injury on pressure points e.g., Comfeel over knees and use of sheep skin.
PBF/NGT/OGT	Do not position tubing underneath infant. Assess integrity of taping with each care episode
Phototherapy eye pads	Remove at care times/parent visits, check for exudate. Do not over tighten. Cleaning the eyes should not be done routinely. If eye toilet necessary see <a href="#">Eye Care</a> guideline for performing eye care
<b>Medical devices and equipment</b>	
All staff to receive training in the correct usage of medical devices used in the NICU, as well as injury prevention strategies during Orientation. See Skills Assessment Matrix Document.	

## Appendix 5: Pressure Injury Classification System for Neonates and Children

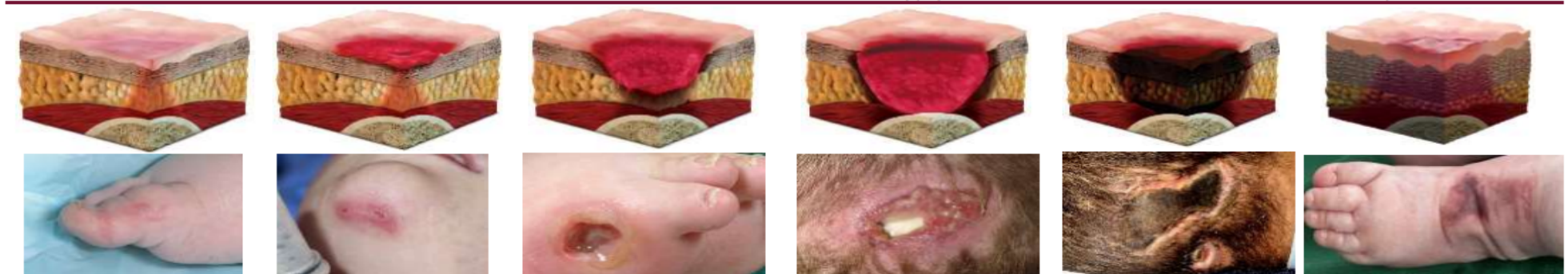
### PAN PACIFIC PRESSURE INJURY CLASSIFICATION SYSTEM FOR NEONATES AND CHILDREN



Compared to normal adult skin, paediatric skin has a smoother epidermis and less pigmentation. Epidermis, dermis and subcutaneous fat are thinner in children. Skin moisture concentration and sebum are lower, and water content is higher in children. Skin pH is higher in neonates.


**Text adapted from:** *International NPUAP/EPUAP Pressure Ulcer Classification System (2009,2014)* published in: National Pressure Ulcer Advisory Panel (NPUAP), European Pressure Ulcer Advisory Panel (EPUAP), Pan Pacific Pressure Injury Alliance (PPPIA), Prevention and Treatment of Pressure Ulcers: Clinical Practice Guideline. 2014: Emily Haesler (Ed.) Cambridge Media: Osborne Park, WA. **3D graphics:** Owned by PPPIA, supported by Silver Chain. **Photos:** Photos courtesy of C. Boylan, used with permission. **Also available in this series:** PPPIA Classification System: Multicultural, PPPIA Classification System for Adults with Light Skin Tones, PPPIA Classification System for Dark Skin Tones, PPPIA Classification System for Asian Skin Tones, PPPIA Classification System for Older Adults. **More information and permission:** [www.pppia.org](http://www.pppia.org) © PPPIA 2020

Stage 1	Stage 2	Stage 3	Stage 4	Unstageable	Suspected Deep Tissue Injury
<p>Intact skin with non-blanchable redness of a localised area usually over bony prominences. Darkly pigmented skin may not have visible blanching; its colour may differ from the surrounding area. The area may be painful, firm, soft, warmer or cooler as compared to adjacent tissue. Stage 1 pressure injuries may be difficult to detect in babies/children with darkly pigmented skin tone. May indicate 'at risk' babies/children (a heralding sign of risk).</p>	<p>Partial thickness loss of dermis presenting as a shallow open ulcer with a red/pink wound bed, without slough. May also present as an intact or open/ruptured serum-filled blister. Presents as a shiny or dry shallow ulcer without slough or bruising (bruising indicates suspected deep tissue injury). Stage 2 pressure injuries should not be used to describe skin tears, tape burns, perineal dermatitis, maceration or excoriation.</p>	<p>Full thickness tissue loss. Subcutaneous fat may be visible, but bone, tendon or muscle are not exposed. Slough may be present but does not obscure depth of tissue loss. May include undermining and tunnelling. The depth of Stage 3 pressure injuries varies by anatomical location. The bridge of nose, ear, occiput and malleolus do not have subcutaneous tissue and Stage 3 ulcers can be shallow. In contrast, areas of significant adiposity can develop extremely deep Stage 3 pressure injuries. Bone/tendon is not visible or directly palpable.</p>	<p>Full thickness tissue loss with exposed bone, tendon or muscle. Slough or eschar may be present on some parts of the wound bed. Often include undermining and tunnelling. The depth of a Stage 4 pressure injury varies by anatomical location. The bridge of nose, ear, occiput and malleolus do not have subcutaneous tissue and these ulcers can be shallow. Stage 4 pressure injuries can extend into muscle and/or supporting structures (e.g. fascia, tendon or joint capsule) making osteomyelitis possible. Exposed bone/tendon is visible or directly palpable.</p>	<p>Full thickness tissue loss in which the ulcer base is covered by slough (yellow, tan, gray, green or brown) and/or eschar (tan, brown or black) in the wound bed. Until enough slough and/or eschar is removed to expose the base of the wound, the true depth, (and therefore Stage) cannot be determined. Stable (dry, adherent, intact, no erythema or fluctuance) eschar on the heels serves as 'the body's natural (biological) cover' and should not be removed.</p>	<p>Purple or maroon localised area of discoloured intact skin or blood-filled blister due to damage of underlying soft tissue from pressure and/or shear. The area may be preceded by tissue that is painful, firm, mushy, boggy, warmer or cooler as compared to adjacent tissue. Deep tissue injury may be difficult to detect in babies/children with dark skin tones. Evolution may include a thin blister over a dark wound bed. The wound may further evolve and be covered by thin eschar. Evolution may be rapid, exposing additional layers of tissue even with optimal treatment.</p>






# Appendix 6: Medical Adhesive Related Skin Injury (MARSI)

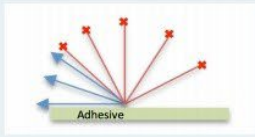










**Neonatal Skin Forum**

## Medical Adhesives and Removal Techniques



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NEONATAL NURSES  
Neo-Skin SIG

General Education	<ul style="list-style-type: none"> <li>○ Skin injury occurs for 9-43% of hospitalised neonates (including epidermal stripping/Medical Adhesive Related Injury (MARSI))<sup>1,2</sup></li> <li>○ Erythema persisting 30 minutes after adhesive removal is considered stripping or MARSI<sup>3,4</sup></li> </ul>		
	<p><i>Prior to application</i></p>	<p><i>On application</i></p>	
	<ul style="list-style-type: none"> <li>• consider if the adhesive is indicated, as adhesives should be left in place for a minimum of 24 hours (adhesion is strongest during the first 24 hours, delaying removal, reduces the risk of injury)<sup>4</sup></li> <li>• ensure adhesive length and width is appropriate for the size of the neonate</li> </ul>	<ul style="list-style-type: none"> <li>• be aware that pressure applied to an adhesive will increase the bond to the skin<sup>5</sup></li> <li>• fold an edge for easier removal</li> </ul>	
	<p><i>On Removal</i></p>	<p style="text-align: center;"><i>Practices and products that <u>increase</u> risk of skin injury</i></p> <div style="text-align: center;">  <p>Adhesive</p> </div> <ul style="list-style-type: none"> <li>• removal of adhesive(s) using angles less than 120°<sup>3</sup></li> <li>• natural rubber or hydrocolloid adhesives<sup>2,5</sup></li> <li>• zinc oxide/acrylate adhesives applied directly to skin<sup>7</sup></li> <li>• removal of adhesive less than 24hrs after application<sup>3,5</sup></li> <li>• bonding agents (e.g. Tincture of Benzoin)<sup>5,8</sup></li> <li>• pressure applied to adhesives on application</li> </ul>	
Removal Agents*	<ul style="list-style-type: none"> <li>○ Avoid agents with high alcohol content and scent<sup>8</sup></li> <li>○ SILICONE derivative products or WATER are currently preferred (based on pediatric studies<sup>4</sup>)</li> <li>○ Clean any residual removal agent from the skin prior to reapplication of adhesive(s)</li> <li>○ More evidence is required regarding emollients and oils as removal agents</li> <li>○ There is limited evidence regarding the frequency of use of removal agents for neonates</li> </ul>		
<p><b>Adhesive Base Type</b></p>		<p><b>Technique (2 handed)</b></p>	
Removal Techniques for Adhesive Type	<p><b>A. Plastic top + acrylate bottom</b></p>		<p><b>1 Low &amp; Slow</b></p>
	<p><b>B. Silicone (poor adherence to medical devices)</b></p>		<p><b>2 Low &amp; Super Slow</b></p>
	<p><b>C. Hydrocolloid sheet (e.g. DuoDERM®, Comfeel)</b></p> <p>• high risk of injury<sup>5,8-10</sup></p>		<p><b>3 Roll &amp; Stretch<sup>8</sup></b></p> <p><b>or Low &amp; Slow<sup>11</sup></b></p>
	<p><b>D1. Traditional film, occlusive, polyurethane dressings (border and borderless)</b></p>		<p><b>4 Moisten*, then Rub &amp; Loosen</b></p>
	<p><b>D2. Newer film dressings with grid adhesive</b></p>		<p><b>5 Soak* Top Layer; then Low &amp; Slow</b></p>
	<p><b>E. Gel adhesive</b></p>		<p><b>5 Soak* Top Layer; then Low &amp; Slow</b></p>
	<p><b>F. Fabric top + acrylate bottom</b></p>		<p><b>5 Soak* Top Layer; then Low &amp; Slow</b></p>
<p><b>G. Paper top + acrylate bottom</b></p>		<p><b>5 Soak* Top Layer; then Low &amp; Slow</b></p>	
<p>View demonstrational tutorials at: <a href="https://www.youtube.com/playlist?list=PLwIzD33AD9nyXtsyG1MdG-Iz2VkyYdnL">https://www.youtube.com/playlist?list=PLwIzD33AD9nyXtsyG1MdG-Iz2VkyYdnL</a></p>			

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Tutorial QR code

## Appendix 7: QRG Treatment of Skin Injury related to CPAP

**Injury Identified** – requires immediate CNC/ CNS/ Medical review.  
 Commence Wound Care Plan  
 Medical photography with parental consent required.  
 Complete CIMS



**Nasal Injury**

- Check prong and hat size.
- Check 2mm gap between prongs and nasal septum.
- Remove hydrocolloid dressing – do not site over nasal injury.
- Use Neoseal
- Secure tubing with clip
- If skin is broken – Commence Stratamed

**Only consider mask use if the above treatment is unsuccessful.**

**Ear Injury**

- Check hat size.
- Apply coconut oil to injury.
- Use ear protectors.



Prong Size	Recommended weight
Size 0	<700 grams
Size 1	700-1250 grams
Size 2	1250 - 2000
Size 3	2000 - 3000 grams
Size 4-5	>3000 grams

Hat Size	Head Circumference
Extra Small	<b>&lt;25cm</b>
Small	<b>25-30cm</b>
Medium	<b>30-35cm</b>
Large	<b>35-40cm</b>

**Refer to CPAP guideline, CNSs, CNCs and Wound Care Nurse for further resources.**