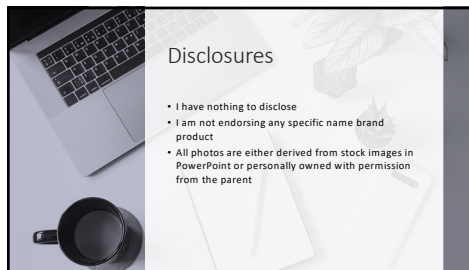
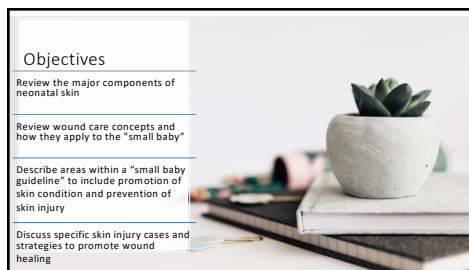




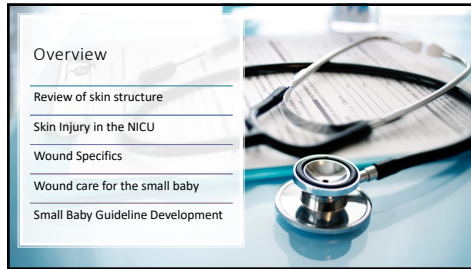
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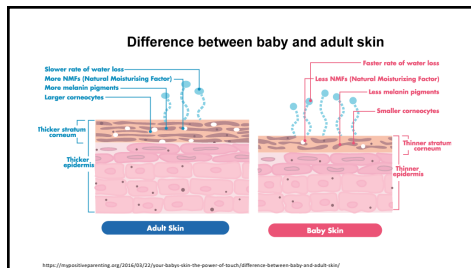
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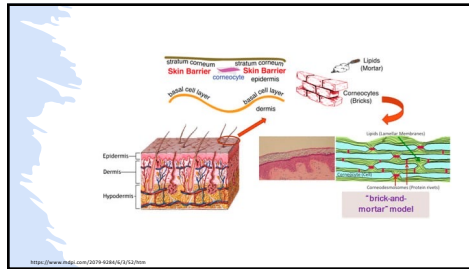
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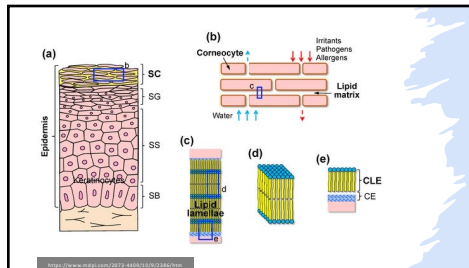
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9

Wound care for the small baby

- How wounds happen
- Where they occur
- What do we do



10

How *wounds happen*


- MARSI
- MASD
- Pressure
- Friction



11

Where *they occur*


- Anywhere a device is placed
- After antiseptis
- Incisions from procedures
- Diaper area
- Bony prominences
- IV sites
- ???



12

What *do we do*

- Prevent
- Assess
- Manage
 - Moist wound healing
 - Consults
- Continuously monitor



13

Ecchymosis
Adhesive Injuries
Skin tears
Pressure injuries
Diaper dermatitis
IV injuries

Skin Injury in the NICU

14

(Johnson, 2016)

"The skin of premature infants is, in essence, wounded. ... Based on this foundation, skin care for premature infants born less than 28 weeks' gestation should therefore be similar to wound cares until adequate time is allowed for the infant to develop barrier function."

Professional Growth and Development
Extremely Preterm Infant Skin Care
 A Transformation of Practice Aimed to Prevent Pain
 Authors: J. Johnson, MPH, MSW, MS, PhD, CRNP

Understanding premature infant skin care is the priority of practice for the NICU. The skin of premature infants is wounded, and the barrier function is not fully developed. This article discusses the importance of skin care for premature infants and provides a framework for practice change. The article also discusses the importance of skin care for premature infants and provides a framework for practice change.

NATURE AND SIGNIFICANCE OF THE PROBLEM

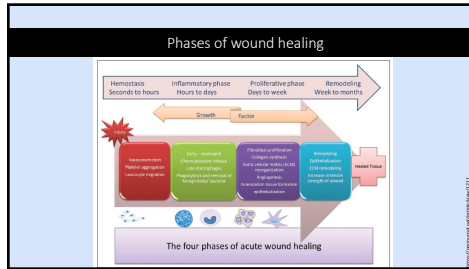
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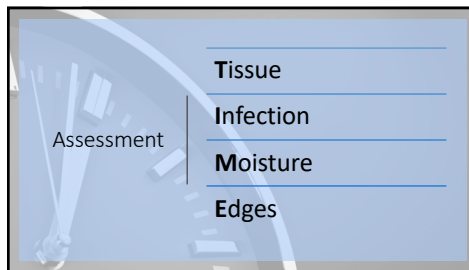
Prevention

- Mattress
- Positioning devices
- Dressings
- Appropriate skin products
- Frequent assessment

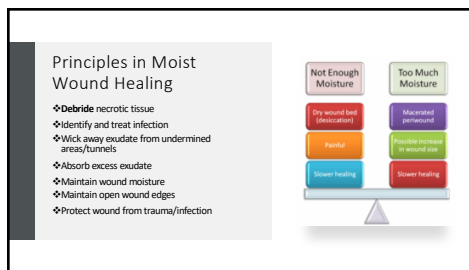
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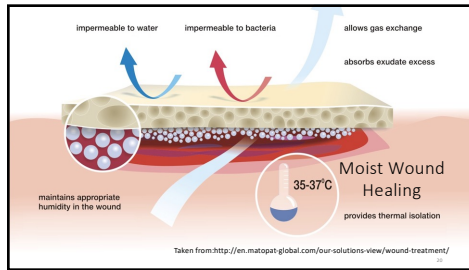
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Clinical Management Extra

Wound Healing and Wound Care in Neonates: Current Therapies and Novel Options

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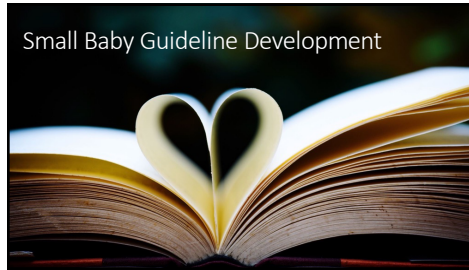
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Types of Dressings/Treatments

- ◊Semipermeable films (Tegaderm)
- ◊Hydrocolloid dressings (Duoderm, Replicare)
- ◊Foam (Mepilex, Mepilex lite, Mepilex border)
- ◊Medical Grade Honey (MediHoney, Therahoney)
- ◊Hydrogel (Intrasite, Restore, Wound Gel, Vigalon, Spandigel)
- ◊Irrigated gauze (Kerlix)**
- ◊Self sticking wrap (Coban)**

**supportive dressings

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Developmental Care Model

© American Pediatric Society (APS) and Society of Critical Care Medicine (SCCM)

Fig. 1. National Integrative Developmental Care Model.

Applying Developmentally Supportive Principles to Diapering in the NICU: What We Know

*Michelle Tross, MD, MEd, APRN, CPNP
 Melissa Tross, RN, BSN, MEd, PhD
 Felicia Pappalardo, MD, MEd, CA, CCRN, CNEC
 Jill Kelly
 Jessica Kelly, RN, MS
 Sha Leung, DTR, CRT
 Deborah Norman, PhD, MEd, CCRN, MEd, CNEC*

Abstract
 Developmentally supportive care strategies in the NICU have shown evidence to support individualized developmental care and individualized diapering. This review of the literature on diapering in the NICU summarizes the current evidence on diapering practices and provides recommendations for diapering practices that are developmentally supportive. The authors discuss the importance of diapering practices that are developmentally supportive and provide recommendations for diapering practices that are developmentally supportive.

Introduction
 The developmental care model in the NICU has shown evidence to support individualized developmental care and individualized diapering. This review of the literature on diapering in the NICU summarizes the current evidence on diapering practices and provides recommendations for diapering practices that are developmentally supportive. The authors discuss the importance of diapering practices that are developmentally supportive and provide recommendations for diapering practices that are developmentally supportive.

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Pharmacological and Non-Pharmacological Brain-Focused Premature Neonatal Injuries

Demetra Metallinou, MD, PhD
 Department of Pediatrics, Faculty of Medicine, University of Western Ontario, London, Ontario, Canada
 *Oncology Unit, *NICU, *NICU


Abstract
 Premature neonates are at high risk for brain injuries. This review of the literature on brain injuries in premature neonates summarizes the current evidence on brain injuries and provides recommendations for brain injury prevention. The authors discuss the importance of brain injury prevention and provide recommendations for brain injury prevention.

Introduction
 Premature neonates are at high risk for brain injuries. This review of the literature on brain injuries in premature neonates summarizes the current evidence on brain injuries and provides recommendations for brain injury prevention. The authors discuss the importance of brain injury prevention and provide recommendations for brain injury prevention.

Conclusion
 Premature neonates are at high risk for brain injuries. This review of the literature on brain injuries in premature neonates summarizes the current evidence on brain injuries and provides recommendations for brain injury prevention. The authors discuss the importance of brain injury prevention and provide recommendations for brain injury prevention.

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Considerations...



Infants <26 weeks Gestational Age (GA) at Birth

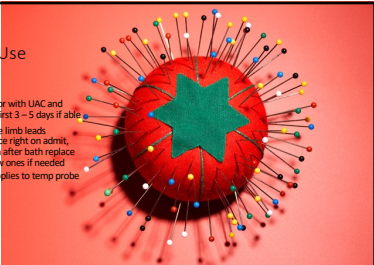
Focus on the *first 7 days of life*

Special care related to developmental considerations

Address concerns for infection related to compromised skin integrity

26

Device Use



- Try to monitor with UAC and POX for the first 3 – 5 days if able
- If needed use limb leads
 - May place right on admit, but then after bath replace with new ones if needed
- Same applies to temp probe

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Antisepsis

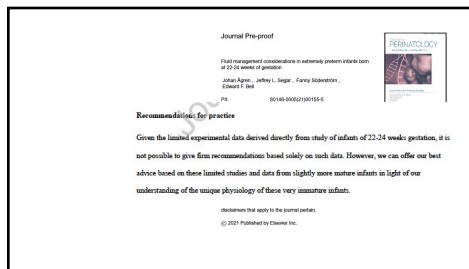


Consider using Betadine to prep skin for line placement

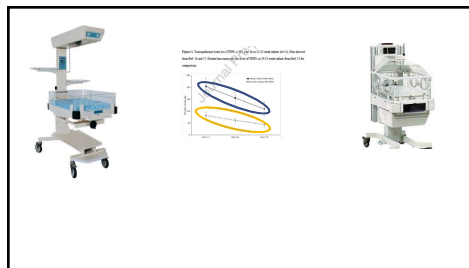
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Table 2. Fluid and electrolyte requirements in infants born at 22-24 weeks of gestation during care in a humidified incubator vs under a radiant warmer.

Component	Humidified* Incubator		Radiant Warmer**	
	Day 0-2	Day 3+	Day 0-2	Day 3+
Water, mL/kg/d	100-170	**	130-220	**
Sodium, mmol/kg/d	0-2	5-10 [†]	0-2	5-10 [†]
Potassium, mmol/kg/d	0	2-4 [‡]	0	2-4 [‡]

*Relative humidity > 80%. **Use plastic shield to limit heat and insensible water loss. †Including all enteral feeds and parenteral nutrition, drops/flush solutions. ‡Adjusted according to fluid (and growth) monitoring. †††Fluid increase over the first 1-2 weeks. ‡‡‡Only when serum or plasma potassium < 4.5 mmol/L.

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Thermoregulation

- Remove Plastic bag from delivery after lines placed
 - Increases risk for bacterial growth on skin
 - Impedes "breathability" of skin
- Considerations for continued temp instability
 - Consider leaving heated mattress in place or replacing
 - Suspended sheet of plastic at least 1 inch above infant
 - After stabilization of infant
 - Large Tegaderm sheet on torso and back (if able)
 - Should not overlap umbilical lines or other dressings
 - Should not be removed, allow to peel off on own

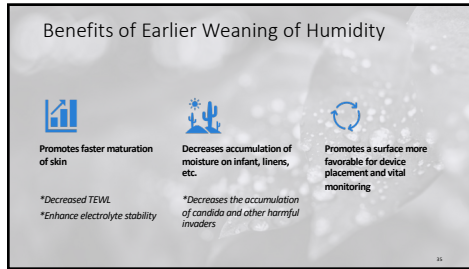
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Humidity

- Initial settings at 70-80% (no rainout)
- Begin wean at 3 days of life by 10% Q 12hrs until at 40-50%
 - Dryer environments promote maturation of skin
 - We are encouraging promotion sooner to impact TEWL from a natural aspect
- There should be no need to increase humidity after you reach maintenance
 - If the skin is maturing as predicted with exposure to dryer air electrolytes should be improving

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Benefits of Earlier Weaning of Humidity



-  Promotes faster maturation of skin
**Decreased TEWL
Enhance electrolyte stability
-  Decreases accumulation of moisture on infant, linens, etc.
**Decreases the accumulation of candida and other harmful invaders*
-  Promotes a surface more favorable for device placement and vital monitoring

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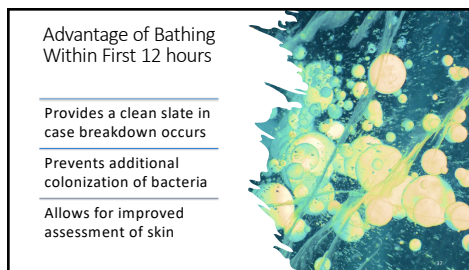
Sponge Bath



- When temperature stable (within first 4-12hrs of life)
- Provide a sponge bath with sterile water
- Bath will consist of very soapy wet gauze used to wash extremities, torso, back if possible, and top of head if possible.
- Face can be wiped with a sterile water wipe
- **NO emollients will be applied to the infant during the first 3-7 days**

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Advantage of Bathing Within First 12 hours



- Provides a clean slate in case breakdown occurs
- Prevents additional colonization of bacteria
- Allows for improved assessment of skin

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Emollients

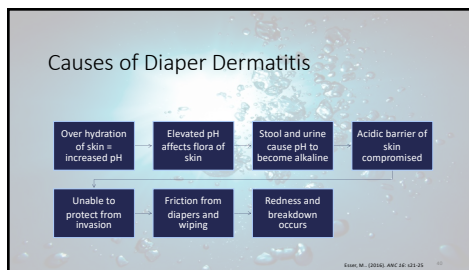
- No emollients during the first 3-7 days
- Application of a lotion-type product may be applied sparsely
- Can assist with maintenance of skin integrity

38

Day of Life 1-2	Days 3 - 6 of Life	Day of Life 7
<ul style="list-style-type: none">• Bath with sterile water• No emollients including diaper area• Humidity set at ~70%• Limb leads, Non-adhesive Pox probe, tegaderm with temp probe over (consider applying skin prep before)• Use betadine for line placement	<ul style="list-style-type: none">• Weaning isolette by 5% Q 12-24hr• If skin dry consider applying lotion sparingly, may include diaper area if stooling	<ul style="list-style-type: none">• Wean of humidity should be complete (at ~40%)• If skin dry consider applying lotion sparingly• Return to NICU skin care guidelines

Quick reference for placement at bedside

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Diaper Care

- Leave diaper open if able (females) or loosely secure
- When changing diaper do not lift abdomen/legs higher than 10-20 degrees during first 7 days
- Slide diaper slowly and blot diaper area with gauze or cotton ball wet with sterile water (there should not be an abundant amount of stool the first few days)
- Consider beginning diaper wipes once stooling (after 3-5 days of life)
- Notify provider immediately if redness occurs in diaper area during first 7 days

*If redness occurs providers should consider candida or infection. Assess all skin of infant for additional areas of redness that may have been a portal for bacteria



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Parenteral Involvement

- Model quiet environment
- Provide guideline for their reference
- Include them in cares encouraging them to contain the infant
- Kangaroo care can be done after 3 days of life if infant stable

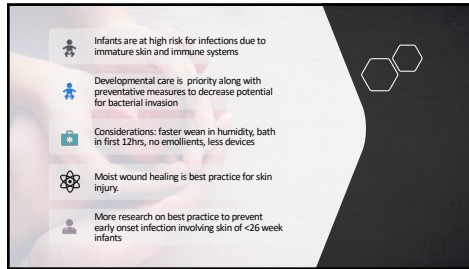


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Case Review: Full Thickness Wound




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- Infants are at high risk for infections due to immature skin and immune systems.
- Developmental care is priority along with preventative measures to decrease potential for bacterial invasion.
- Considerations: faster wean in humidity, bath in first 12hrs, no emollients, less devices.
- Moist wound healing is best practice for skin injury.
- More research on best practice to prevent early onset infection involving skin of <26 week infants.

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Key Takeaways and Next Steps

- Evaluate current practice
- Is skin a priority?
- Use what you have and incorporate skin care principles

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