



Clinical Practice Policy:	Neonatal Skin Care including IV Infiltration information and Ostomy Management
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Approved By:	Department of Pediatric Newborn Medicine Clinical Practice Council <u>01/06/2021</u> CWN PPG <u>10/14/15 1/07/2021</u> BWH SPP Steering <u>10/21/15</u> Nurse Executive Board/CNO <u>10/26/15</u>

The following neonatal skin care guidelines are based on the 4th Edition of the Association of Women's Health, Obstetric, and Neonatal Nursing (AWHONN) Neonatal Skin Care Guidelines (2018). Summary information regarding skin assessment, bathing, cord and circumcision care, disinfectants, water loss, use of skin care products and adhesives, skin breakdown and intravenous infiltration are included below. More information can be found in the AWHONN Skin Care Guideline manuals, which are available in the NICU tea.

Presumed Knowledge:

[General Pediatric Care of the Healthy late Preterm Newborn](#)

[Diaper Dermatitis Clinical Practice Policy](#)

Management and Care of Newborn Skin

Newborn Skin Assessment

- Assess skin daily for all patients per gestational age/DOL expectation
- Assess for erythema, dryness, breakdown, rashes
- Identify risk factors for skin injury
- Utilize preventative measures to minimize the risk of skin injury
- Try to determine causes of breakdown
- Skin culture per order if infection suspected

Initial Bathing

- All infants must achieve thermo stability and euglycemia prior to bathing.

- < 32 weeks gestation: use warm sterile water to cleanse and ensure complete dryness of the infant after achieving thermal & cardiorespiratory stability.
 - Warm tap water with a minimal amount of neutral pH or slightly acidic cleanser is adequate.
 - Point of emphasis: Adding more cleanser creating more suds to the water may increase the pH (creating an alkalotic solution) which could impact the skin's natural acidic pH.
 - If an infant is to be placed in humidity in an incubator, a warm sterile water sponge bath should be attempted to prevent bacteria growth within the isolette environment.
 - <37 weeks gestation: Delay bathing until ~ 24 hours of age.
 - Full term: Delay bathing until at least 6 -24 hours of age.
- Universal precautions, gloves must be worn
- Immersion bathing is preferred for late preterm and term newborns.
- Leave vernix on the infant's skin
- Bathing guideline for infectious diseases: [Care of Infants of HIV Positive Mothers](#)
- Parental preference on deferring initial bath in hospital can be honored, in situations requiring circumcisions, cleansing at the site will be performed per policy.

Routine Bathing

- Limit bathing to every few days, shampoo 1-2 times/week
- Use neutral pH or slightly acid cleanser, daily soap bathing is discouraged
- Avoid rubbing; rinse with soft cloth and pat dry
- Less than 32 weeks, use warm water only in the 1st week

Immersion Bathing

- Water depth approximately 5 in. or enough to cover infants' shoulders
- Swaddled bathing may be done fully immersed or additional comfort measures can be implemented to reduce stress and maintain body temperature during bathing.
- Bath water temperatures should range from 38*-40*C = 100*-104* F
- Immediately dry and wrap infant in warm blankets when bath completed

Cord Care

- Keep cord area clean and dry
- Keep diaper folded and under cord to allow drying
- Cleanse with water if cord becomes soiled with urine/stool
- Bathing does not delay cord healing or increase infection rates in healthy term

newborns.

Circumcision Care

- If able, a preprocedural bath is desirable.
 - Cover circumcised penis with generous amounts of petroleum or petroleum gauze which helps heal as well as protects the site from adhering to the diaper.
 - If Surgicel® has been applied, let Surgicel® fall off without removal
 - Clean site with water only for 3-4 days
 - No immersion baths for 3-4 days post procedure

Disinfectants

Please refer to: [NICU/SCN B.1 Arterial and Venous Blood Sampling](#)

- Povidone iodine OR alcohol to disinfect before invasive procedures
- Remove prep completely with sterile water or NS post procedure
- Avoid isopropyl alcohol in combination with povidone/chlorhexidine

***note: povidone iodine and chlorhexidine should never be used together.**

Transepidermal Water Loss

Please refer to: [NICU H.2 Humidity in the Giraffe Omnibed](#)

- The risk of heat & fluid losses are high in premature infants born less than 30 weeks
- Measure humidity regularly in first weeks of life
- Humidity may be ordered at 80-90% for the ELBW population and should be maintained for the 1st week of life.
- Humidity should be gradually decreased by 5-10% q 12 hours until 50% is reached. 50% humidity should be maintained until the infant is 30-32 weeks post conceptual age depending on skin assessment and team discussion.
- Humidity can again be weaned by 5-10% q 12 hours approximately 2-3 days prior to planned discontinuation by team.

Skin Care Products and Adhesives

Products

Skin barriers include hydrocolloid and/or silicone products

- Hydrocolloid/pectin-based products include but are not limited to:
 - DuoDERM®
 - NeoHold™
 - Cannulaide®
- Silicone products include but are not limited to:
 - Mepitac® = Soft silicone tape
 - Mepitel® =Contact layer w/ lg pores
 - Mepilex® Lite = Absorbent thin foam dressing
 - Mepilex border lite® = self-adherent thin bordered foam dressing.

Adhesives

- Apply skin barrier prior to adhesive use
- Use all adhesives sparingly and remove on a horizontal plane(L-R)
- Remove polyurethane transparent dressings (Tegaderm™) slowly on a horizontal plane that is parallel to the skin surface with a stretching motion
- DO NOT use silicone tapes to secure silicone lines EXCEPT nasal cannulas
- Double back tape to secure PIV to IV board or use silicone tape
- Utilize hydrocolloid barriers for better molding as a platform
- Hydrogel adhesive EKG or limb leads or monitor VS through arterial lines if the infant's skin is unable to maintain leads due to incomplete formation.
- Avoid solvents, bonding agents, minimize ALL adhesive bandages
- Remove adhesives slowly with NS pads or water-soaked gauze
- Optional mineral oil(MCT) for removal of adhesives unless re-taping
- ALL adhesive bandages should be avoided/used minimally after blood draws to cover minimal skin surface area. An alternative to a bandaid is using a silicone product including but not limited to Mepilex border lite®.

Skin Breakdown: Prevention and Treatment

Prevention

- Gelled mattresses/pads, Zflo positioners when disposition requires, cotton surfaces
- Skin barrier/transparent dressings to prevent friction injury
- Petrolatum/zinc to groin and thighs can reduce urine irritation
- Hydrocolloid barriers/silicone beneath NPCAP around nares and upper lip
- Alcohol free skin barriers beneath tape securing endotracheal tube
- Apply skin barrier to surrounding ostomy skin before appliance application
- Assess skin under medical devices frequently (q 1 – 4 hours) w/ rotation of pressure points secondary to medical device use.
- Assess wound state of skin breakdown (homeostasis, inflammation, proliferation/repair, maturation/remodeling)
- Use moist occlusive healing product (Mepitel®)

*For pigmented skin, careful protection strategies should be considered to prevent stripping of pigmentation on the infant's face. Carefully removing any adhesives properly and adding any barrier ointments as appropriate.

Potential Causes for Skin Breakdown

- **Mechanical:** Adhesive removal, abrasions/friction, pressure sites
- **Thermal:** cooling blankets or warming devices (mattresses/heat warmers)
- **Chemical:** diaper dermatitis, irritant cleansing solutions, extravasation injury
- **Congenital:** epidermolysis bullosa
- **Infection**
- **Vascular compromise:** large hemangiomas, thromboembolic event

Intravenous Infiltration: Prevention and Treatment

Prevention

- Use insertion devices covered with plastic or silicone catheters
- Avoid IV placement in areas difficult to immobilize when possible
- Use transparent adhesive and arrange tape so that insertion site is visible at all times
- Use gauze/silicone tape beneath heavy plastic appliances to avoid pressure
- Visualize site at least every hour:
 - **Touching:** site should feel soft, warm, dry
 - **Looking:** Site visualized, clean/dry, without redness, no evidence of swelling
 - **Compare:** Limb should be same size as other limb, equal capillary refill equal bilaterally, equal skin temperature
- When using an arm board, prevent obstruction of venous return by placing the tape loosely over bony prominences and do not completely encircle the extremities with tape.

Treatment

- Stop infusion
- Elevate site
- Cover with absorbent silicone wafer (Mepilex® Lite)
- Administer therapeutic agents/antidotes per order (LIP can either use the puncture technique or can inject hyaluronidase)
- Discourage application of silver sulfadiazine

****Do NOT apply heat or cold to the site****

Intestinal Ostomy Care

General information

- The type of ostomy is determined by site of intestinal diversion and included jejunostomy, ileostomy, and colostomy and should be documented in the EHR. This information can be found in the surgical notes provided by BCH.
- Configurations may include an end stoma (Hartman's pouch), double barrel (functioning stoma with mucous fistula), or loop stoma.
- Management of appliances is often challenging due to proximity of stoma to umbilicus/groin and the rounded abdomen of the infant and therefore consistent application and plan for appliance changes is imperative to protecting and maintain the surrounding skin of the ostomy.

Routine care practices

- **Primary goal:** to prevent the contact of output from ostomy onto infant's skin.
 - The optimal way to promote healing and maintenance of skin integrity is to create a regimen customized to each infant that is followed by all caregivers. This can be created and posted at the bedside for consistent practice by all.
- **Timing of appliance changes** may vary based on clinical scenarios. The wafer and pouch should be changed if the following are encountered:
 - Whenever the ostomy appliance is leaking. Patching with tape or other items is not recommended.
 - If "melting" is noted on the wafer after the appliance is removed, this indicates that the appliance needs to be changed more frequently.
 - Consider emptying the appliance when 1/3-1/2 full of if full of air to minimize detachment.
 - Small holes or cuts into the bag/appliance to allow gas to escape are not permitted. The bag should be opened at the bottom regularly to help gas to escape. Changing the integrity of the bag by cutting or placing a small hole causes leakage of gastric contents.
- **Gently cleanse the area.**
 - Use a soft cloth with warm water to loosen any barrier paste or adhesive.
 - The stoma area may be gently cleansed with a soft cloth and water.
- **Assess skin integrity.**
 - A skin barrier powder can be applied to weepy areas prior to placing the appliance to absorb moisture and protect the peristomal skin.
 - If fungal infection is suspected on the peristomal skin, apply antifungal powder (with appropriate physician order) and then cover with skin protectants.
- **Apply an appropriately sized appliance.**

- Minimize touching any areas of products that will have direct contact with peristomal skin.
- Warming the appliance wafer by hand prior to removal of the adhesive backing may help with adherence.
- A template of the appropriately sized opening to cut into the wafer should be available to all team members.
- The determined appropriate opening should be traced onto the wafer to then be cut into an opening to fit over the stoma as well as cutting adjustments to the size of the wafer to accommodate the abdomen/groin.
- The opening in the wafer should sit snugly around the base of the stoma. The opening should not be too tight compressing the base of the stoma nor too large so that output will come in contact with unprotected skin.
- A thin line of barrier paste can outline the opening cut into the wafer. Too much barrier paste can be difficult to remove from the skin later on.
- The thin paste is used to secure the wafer around the stoma to the patient's abdominal skin.
- Once the wafer is secured over the stoma onto the skin, the bag/appliance can be applied to sit directly onto the wafer.
- To monitor initial stool output, cotton balls may be placed within the appliance.
- Continue to monitor stoma appearance-evaluating for color/perfusion, any signs of excoriation, protrusion changes/prolapses or retractions, as well as signs or symptoms of infection.

Appendix 1:

Sample Ostomy Bedside Care Plan:

- All supplies can be placed in a gray bin with the patients ADT label on it at the infant's bedside including stoma paste, stoma powder, large wafers, ostomy bags, and template that can be used to cut the wafer and bag to accommodate the stoma.
- If patient's ostomy bag is leaking at any point, an **entire bag change is warranted.**
- Using additional stoma paste can be abrasive to the skin and can be difficult to remove. Please only use stoma paste to define the inner cut circle to adhere to the skin, not to patch small areas of leakage.
- If the bag needs to be vented, please open the valve at the bottom to remove excess gas. No manipulation of the bag should be done to allow venting as this can cause leakage of stool inadvertently causing additional skin exposure to acidic stool.

Step 1: Prepare your supplies:

- ✓ Create a template cutting out the size appropriate for the stoma and date it to ensure the team is aware of the most recent fitting template.
- ✓ Trace the stoma size using the stencil onto the wafer.
- ✓ Cut the stoma circle w/ a blade (careful!) to secure clean lines.
- ✓ Warm the wafer b/t two heel warmers to help increase its moldability to the skin.
- ✓ Use the syringe of stoma paste to provide a clean line of paste to the inner circle of the wafer where it will be placed over the stoma and help secure the wafer to the skin.



Inner stoma circle has a clean line of stoma paste applied. The edge of the wafer can also be slightly cut to fit appropriately on patient's abdomen/groin.



Step 2: Prepare patient for the ostomy bag change:

- ✓ Place face cloths, white pads, or wipes around his stoma site to catch any stool that may be expressed during the bag change to ensure a clean area.
- ✓ Have warm water and wipes available to cleanse the stoma site.
- ✓ If there is any excess stoma paste noted on the skin, MCT oil or cavilon swabs are helpful in removal.
- ✓ Inspect the stoma for its color, perfusion, protrusion, and surrounding skin for any breakdown.

Step 3: Place new wafer and ostomy bag onto the stoma site:

- ✓ On clean, dry skin place the wafer w/ the stoma circle cut out that has been lined w/ stoma paste directly over patient's stoma. The opening of the wafer should fit snugly around the stoma without adding any pressure to the base of the stoma or having any excess space b/t the cut out and the stoma, exposing abdominal skin.
- ✓ Using gentle pressure, carefully mold and press the wafer to patient's abdomen.
- ✓ If stool is expressed, use a clean wipe to cleanse the area prior to attaching the ostomy bag.
- ✓ Remove the stickers from the back of the ostomy bag and carefully place the ostomy bag over the stoma so that it is aligned and adhered to the wafer. Use gentle pressure to ensure the entire bag is securely fastened to the wafer.



- ✓ Syringes can be placed on the valve of the bottom of the bag to extract stool to ensure accurate I & Os. If the bag is patched without being fully changed, stool leaks into patient's diaper mixing w/ urine and causes an inability to precisely calculate the infant's fluid/nutritional needs.
- ✓ The ostomy bag can be rotated so the opening is either to the left or right of the stoma with bag changes.

Please reach out to patient's primary team if this plan requires updating based on the infant's growth or stoma changes.

Appendix 2:

NICU Skin Care Products

Mepitac ® (tape) Not on tubes directly (silicone on silicone does not hold)

- Coat oximeter probes
- Under IV catheter hubs
- Knees and elbows - seen with neonatal abstinence agitation (with stripe lines up and down)
- Any friction burn area

Mepitel ® One (honey comb silicone dressing) this is tacky not adhesive

- Over excoriations (ankles, neck) can view wound through weave and treat with ointments

Mepilex Lite ® (padded dressing) - layered with tegaderm, absorbent middle layer, silicone layer on baby

- Over wounds to wick away exudates
- IV infiltrates to draw fluid from beneath the skin
- Occiput wounds to pad and wick away exudates

Mepilex border lite ® silicone bandaid - middle padded with silicone tape surrounding it

- Any of the above with advantage of silicone adhesive border, good when cut to fit as heel stick band aid

Oil Emulsion - smooth sterile non adherent knitted cellulose acetate dressing with petrolatum in an emulsion blend which permits flow of exudate through the porous knitted fabric, thus minimizing maceration

- Cut to fit over cracks and fissures - cracked nipples, skin folds
- Great to reduce scarring and may use directly on a wound beneath an absorbent secondary dressing

Cavilon™ spray - excoriated buttocks, use for “crusting” technique

Cavilon™ swabs - other body areas requiring protection from adhesives, including Hydrocolloid

- May use under cannulaide and ET tubes
- May use under NG tubes

Xeroform® Petrolatum Wound Dressing - Sterile fine mesh gauze impregnated with USP Petrolatum and 3% Bismuth Tribromophenate for deodorizing and bacteriostatic action.

- Helps maintain moist wound site.

Hydrocolloid - Moisture-retentive dressings, with gel-forming agents such as sodium carboxymethylcellulose and gelatin which is laminated in place on a foam or film, made of polyurethane

- Protectant or secondary dressing to layer up or to protect intact and newly healed skin, stoma. Very adhesive.