

Every Nurse is a Skin Care Nurse





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Introduction

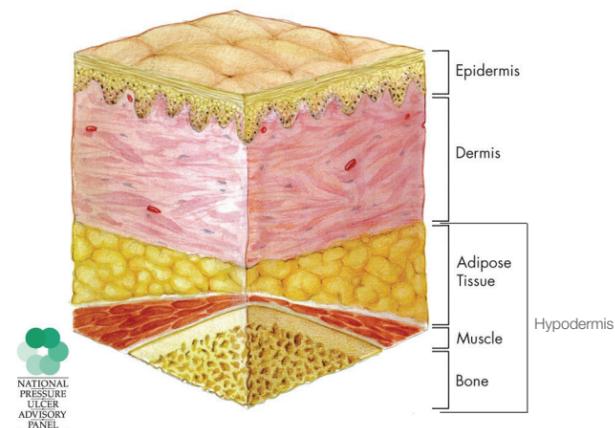
Caring for patients includes caring for the largest organ of the body—the skin. Preventing skin damage is not only possible, it is critical for patient health and comfort. This booklet is aimed to help you understand the anatomy and function of the skin. In addition, it discusses the common types of moisture-associated skin damage, caring for dry skin and best practices for preventing skin damage in your patient population.

Anatomy of the Skin

The skin protects the body and its internal organs from injury and is a barrier to bacteria and infection. It keeps moisture inside the body and also regulates body temperature by cooling mechanisms such as perspiration. In addition, the skin provides sensation, allowing us to feel heat, cold, pain and touch. Glands within the skin secrete oil and sweat for lubrication, helping it stay moist and healthy.

There are three (3) primary layers of the skin:

- **Epidermis:** dry, outermost layer which provides protection
- **Dermis:** moist, inner layer which provides strength and support
- **Hypodermis:** adipose tissue or fatty layer which provides insulation and cushioning



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The illustration shows a cross-section of the skin, muscle and bone.

The three (3) primary layers of the skin are the epidermis, dermis and hypodermis. The epidermis is the dry, outermost layer. Underneath the epidermis is the dermis, a moist inner layer which provides strength and support. The dermis contains blood vessels, lymph vessels, sweat glands and hair follicles. This layer also contains the pain and touch receptors. When the epidermis is injured, the dermis is exposed. This type of injury can hurt because pain receptors are exposed. The hypodermis or adipose fatty layer is the deepest layer of skin.

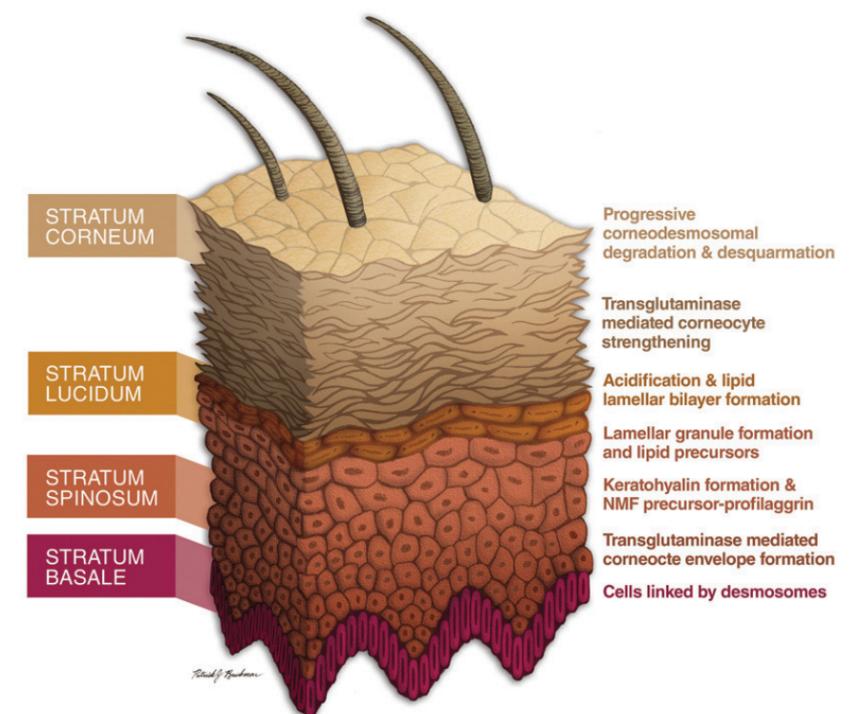
Importance of the Epidermis

Understanding the epidermal layer is essential to preventative skin care. For example, the epidermis uses keratinocytes and lipids to seal in the body's moisture, while the acid mantle retards bacteria growth. Selecting skin care products that enhance the epidermis' natural ability to control water loss and retard bacterial growth will be beneficial to the skin health of your patients.

Up to about 60% of the body is water. The body is able to retain water thanks to the outer layer of the epidermis, the stratum corneum. Like bricks on a building, the epidermal cells are tightly stacked in a staggered fashion. In between the epidermal cells are hydrophobic (water repellent) lipids, or fats, which act like mortar to keep the bricks in place. This structure allows the epidermis to be effective at "sealing in" the body's moisture.

The epidermis also acts as a barrier to infection. Keep in mind there are about one (1) trillion microorganisms on the surface of the skin. Many of these microorganisms are considered pathogens to the human body. The epidermis is able to protect the body from these harmful pathogens through the sebaceous glands or oil glands. The sebaceous glands secrete an acidic mixture of oils, called sebum, via the hair follicles and shafts. Sebum has an average pH of 5.4, which is on the lower acidic side of the scale. This pH level, called an "acid mantle," retards the growth and spread of bacteria on the skin because most pathogenic bacteria thrive in alkaline (pH above 7) environments. Finally, sebum also plays a role in keeping the skin smooth in texture.

Substances in contact with the skin can change the skin's pH or acid mantle. Skin exposed to urine and stool through incontinence will have a higher pH (more alkaline), which could increase the risk for skin irritation, breakdown and infection.



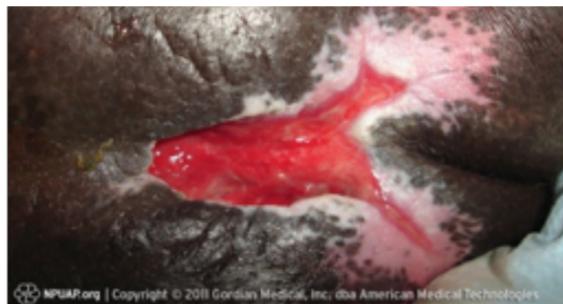
The Epidermal Layers

Managing Risk

The key to providing comprehensive and compassionate care is managing risk.

Failure to identify risk and manage patients appropriately can lead to pain, suffering and medical complications. Regulatory entities such as Centers for Medicare & Medicaid Services (CMS) and The Joint Commission (formerly known as the Joint Commission on Accreditation of Hospitals) unite their efforts to continuously improve healthcare for the public.

Preventative skin care has been identified as a problem area in healthcare facilities. Continued staff education regarding risk identification and timely, appropriate action is essential to meet prevention goals.



Compromised Epidermis

Risk factors that compromise intact skin

- Skin exposed to urine and stool from incontinence
- Friction that occurs when the skin rubs against skin or a surface such as bed linens
- Shearing caused by deeper tissue layers sliding against each other
- Dry skin (xerosis - the medical term for very dry, scaly skin)

Any of the above factors can contribute to skin injuries or the formation of pressure ulcers.

Once the skin is broken, the patient is susceptible to infection and pain as well as increased care costs. This is why it is important for each care provider to help prevent skin breakdown.



Preventative Skin Care

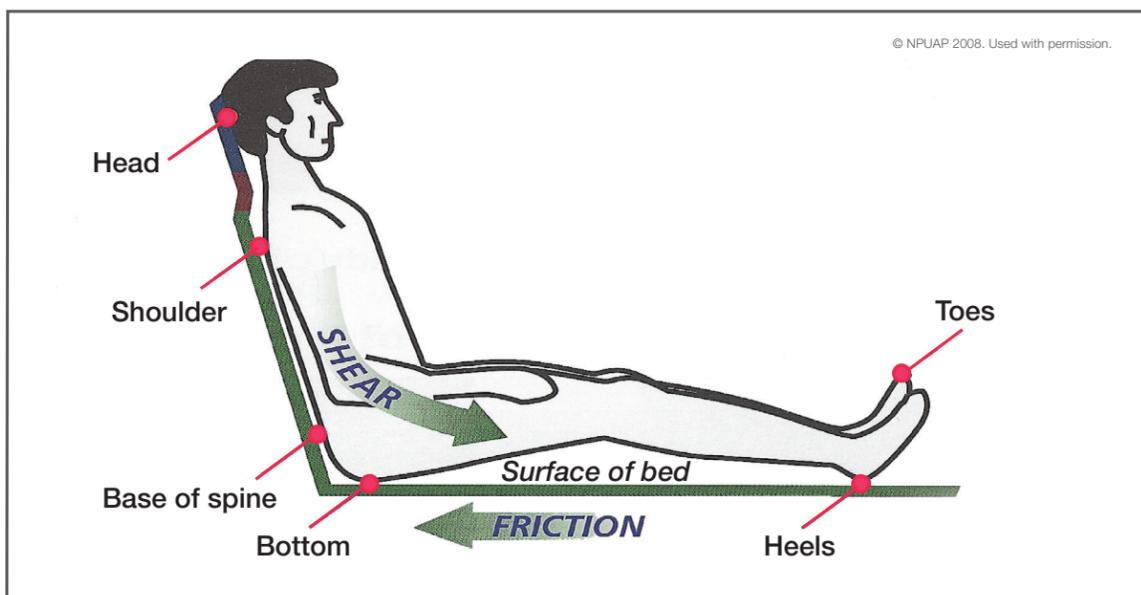
Some of the strongest available evidence associated with maintaining optimal skin health and preventing skin complications supports the use of a structured skin care regimen and quality products¹. A **simplified, structured regimen** decreases variations in the delivery of care among staff and promotes compliance for optimal outcomes².

The guiding principles of a structured skin care regimen include three (3) elements of care:

1. Cleanse
2. Moisturize
3. Protect

¹ Bliss, et al. An economic evaluation of four skin regimens in nursing home residents with incontinence: economics of skin damage protection. Journal of Wound Ostomy and Continence Nurs:143-151

² Gray M, Bliss DZ, Doughty DB, Ermer-Seltun J, Kennedy-Evans KL, Palmer MH. Incontinence associated dermatitis: a consensus. J Wound Ostomy Continence Nurs 2007; 34:45-54



Preventative Skin Care (Cont.)



Cleanse

Cleansing is a basic but essential first step in maintaining and promoting optimal skin health. During daily activities, skin wastes and environmental contaminants can accumulate on the skin. As a result, skin cleansing should be done at regular intervals. Cleansing of the body should be gentle, without scrubbing. Once cleansed, gently pat dry.

To minimize potential skin sensitivities, allergens or skin irritations, select a mild skin cleanser that is pH-balanced and made with few ingredients.

If the skin is soiled from urine or stool, cleanse the skin as soon as possible to limit skin irritation. When frequent cleansing is necessary, a 'no-rinse', pH-balanced skin cleanser is preferred because it is left on the skin rather than rinsed away, saving time and steps.

Specific instructions for perineal skin cleansing will be discussed later in this booklet.



Moisturize

Moisturizing the skin routinely, especially after bathing, with creams or lotions is an important second step which can help avoid skin complications such as dry skin, skin tears and skin breakdown.

Protect

Protecting the skin is the ultimate goal in the third step of a structured skin care regimen. Exposure to irritants and excess moisture from urinary and/or fecal incontinence can lead to painful dermatitis and skin breakdown.

Skin protecting barriers isolate the skin's exposure to these elements. An ideal moisture barrier shields the skin from irritants and excess moisture, maintains skin hydration, and avoids maceration.



Not All Barriers Are Created Equal

As previously stated, ideal skin protecting barriers should shield the skin from irritants, maintain skin hydration, and prevent maceration of tissue when the skin is exposed to moisture for a sustained period of time.

When choosing a protectant, consider the following strengths and weaknesses of the ingredients used in barrier products:

Petrolatum	Dimethicone	Zinc oxide
- Good protection	- Variable protection	- Good protection
- Modest skin hydration	- Good skin hydration	- Poor skin hydration
- Avoids maceration	- Modest protection against maceration	- Does not avoid maceration

Active ingredients in skin products

A study by Hoggarth et. al, tested each of the following ingredients and identified their property characteristics¹:

- Products containing **petrolatum** demonstrated good protection against irritants, avoided maceration of tissue, and provided modest skin hydration.
- Products containing **dimethicone** demonstrated good skin hydration, but only variable protection against irritants and modest barrier efficacy to prevent maceration.
- Products containing **zinc oxide** demonstrated good protection against irritants, but did not avoid maceration nor provide skin hydration.

Conclusion

The study suggests that not all barrier ingredients are equal. Overall, petrolatum was the only test article shown to be efficacious with all testing variables (e.g., a barrier to irritants, with skin hydration potential and a barrier against maceration).

Products that offer optimal protection against incontinence include all three ingredients (dimethicone, zinc oxide & petrolatum).

Assessment

Lastly, it is important to note that consistent monitoring of your patients' skin is crucial to maintain skin health. Use all of your senses to identify any potential skin problems.

What do you **see**: are there areas of skin that are red, discolored or broken?

What are you **hearing** from the patient: are they complaining of itching, burning or pain?

What do you **feel**: are some areas of the skin a little too firm, soft, scaly, hot or cold compared to the surrounding skin?

Are there any **odors**: especially ones that remain after cleansing of the area?

If you observe changes, document and report them and create an appropriate plan of care.

¹ Hoggarth A, Warong M, Alexander J, Greenwood A, Callaghan T. A controlled, three-part trial to investigate the barrier function and skin hydration properties of six skin protectants. *Ostomy Wound Management*: 2005; 51(12): 30-42

Moisture-Associated Skin Damage

You might encounter many different skin conditions while caring for your patients. Among the most common, yet most concerning, conditions are those caused by too much moisture on the skin.

Moisture-associated skin damage, or MASD, is the term used to describe the irritation, inflammation and erosion of skin that has been in contact with moisture. There are four (4) common types of MASD: incontinence-associated dermatitis, intertriginous dermatitis, peristomal moisture-associated dermatitis and periwound moisture-associated dermatitis¹. For any of these four (4) types of skin damage, long-term exposure to moisture can lead not only to redness and inflammation, but skin erosion and/or infection.

Incontinence-associated dermatitis, also known as IAD, is more commonly known as diaper rash or diaper dermatitis. IAD is an inflammation that occurs when the skin has prolonged contact with urine or stool.

Intertriginous dermatitis also known as ITD or intertrigo is an inflammation that occurs between opposing skin surfaces or between skin and medical device such as oxygen tubing or a blood pressure cuff. Inflammation is directly related to friction from skin-on-skin rubbing, and trapped moisture from perspiration within a skin fold. If not managed appropriately, the risk of skin breakdown and infection increases.

Peristomal moisture-associated dermatitis occurs when moisture such as stool or urine leaks from the stoma opening and underneath the skin barrier of the ostomy pouching system. This causes inflammation or redness of the skin next to the stoma.

Periwound moisture-associated dermatitis occurs when wound drainage has sustained contact with the skin around a wound. The wound drainage can cause inflammation and redness.

For this booklet, two types of moisture-associated skin damage (MASD), IAD and ITD, will be further discussed.



Incontinence-Associated Dermatitis (IAD)



Intertriginous Dermatitis (ITD)



Peristomal Moisture-Associated Dermatitis



Periwound Moisture-Associated Dermatitis



Incontinence-Associated Dermatitis (IAD)

Incontinence-associated dermatitis (IAD) sometimes called diaper dermatitis, maceration, perineal dermatitis or moisture lesions, occurs when skin is exposed to repeated or prolonged incontinence.

When urine and/or stool are in regular contact with the skin in the perineal or groin area, you may initially see redness or inflammation. However, erosion of the skin can sometimes occur within a short period of time, especially in patients with liquid stools. As a result, patients with incontinence should be assessed frequently to lower the risk of injury to the skin. Any change of skin condition should be documented and reported to the appropriate healthcare staff for further assessment.

Cleansing skin gently is an important first step for patients who already have compromised skin¹. Cleansing should be performed promptly **after each incontinent episode** and the cleanser selected should be indicated for perineal skin cleansing. The ideal cleanser removes unwanted microorganisms while maintaining the skin's barrier function². Perineal skin cleansers are pH balanced to

be similar to the pH of the skin and can be packaged as a liquid, emulsion, foam or disposable cloth. Avoid harsh soaps like bar soap and antibacterial hand-washing soap. These can change the pH of the skin, and can cause the skin to dry, crack and take longer to heal³.

Skin protectants should be used routinely for at-risk or compromised skin from incontinence. They are best applied in a thin, even layer over the entire area needing protection.

Incontinent Skin Care

1. Cleanse
 - Gently cleanse patient with mild, pH-balanced cleanser (Bedside Care[®] Foam, Bedside Care[®], Bedside Care[®] EasiCleanse[™] Bath or Gentle Rain[®] Extra Mild).
 - Pat skin dry. Do not rub.
2. Protect
 - Apply a thin, even layer of skin protectant

¹ Gray M, Bohacek L, Weir D, Zdanuk J. Moisture vs pressure: making sense out of perineal wounds. J Wound Ostomy Continence Nurs. 2007;34(2):134-142. Review

² Gray et al. Incontinence-associated dermatitis: A consensus J Wound Ostomy Continence Nurs. 2007;34(1):45-54

³ Nix D, et al. A review of perineal skin care protocols and skin barrier product use. Ostomy Wound Management. 2004;50(12):59-67

¹ Gray M, Black JM, Baharestani MM, et al. Moisture-Associated Skin Damage: overview and pathology. J Wound Ostomy Continence Nurs. 2011; 38(3):233-241

Incontinence-Associated Dermatitis (IAD) (Cont.)

IAD is a serious and common problem which can lead to infection, pain, and pressure ulcers. To prevent IAD, perineal skin care should begin before the skin turns red. Assessment and management of the skin are essential components of nursing practice, whether you are a WOCN, wound care specialist, staff nurse, or nursing assistant.

Complications from IAD

Whenever a patient is seen with incontinence, you also need to assess for secondary infection, such as candidiasis. Implement timely and appropriate treatment using an antifungal product that incorporates a skin protectant¹. Staff are more likely to adhere to structure when minimal products are required.



Moisture

Moisture & Yeast

The photo on the left shows the effects of moisture from incontinence, while the photo on the right shows the effects of moisture combined with yeast. Incontinence-associated dermatitis plays a key role in skin breakdown and pressure ulcer formation.

IAD or Pressure Ulcer?

To mistakenly classify IAD as a stage I or II pressure ulcer is not uncommon. IAD and pressure ulcers are closely related and etiology can be confusing, especially if the injury is on the buttocks.

Skin injuries not only determine the care we provide, but are also considered a quality indicator in the healthcare setting. Therefore, it's important to differentiate IAD from pressure ulcers to plan accordingly for care.

A thorough examination of all skin from perineal, peri-genital areas to adjacent skin folds is necessary to differentiate the etiology. Tools can help accurately identify persons at risk of IAD allowing staff to take appropriate steps for prevention, such as an IAD Assessment tool and IAD vs. Pressure Ulcer Differentiation tool. These tools can help accurately identify persons at risk of IAD allowing staff to take appropriate steps for prevention.



Tools -
Differentiating IAD from Pressure (Coloplast)

(IAD-S) instrument, Borchert & Bliss, 2010

¹ Gray M. Incontinence-related skin damage: essential knowledge. *Ostomy Wound Manage* 2008; 53(12) 28-32.



Intertriginous Dermatitis (ITD)

ITD, also known as intertrigo, is an inflammatory dermatitis of opposing skin surfaces caused by moisture and friction. Many people are at risk for developing intertriginous dermatitis including those who are hospitalized, immobilized, obese, malnourished, or have skin-to-skin or skin-to-device contact—such as from a brace or when a blood pressure cuff is left in place.



In this photo, note the limited amount of redness visible around the perimeter of the skin fold. The extent of the problem is identified only when carefully spreading the skin fold apart.

Symptoms common to ITD are odor, erythema, itching, burning, skin lesions and skin erosion. Not only do these uncomfortable symptoms become a problem, but trapped moisture and increased friction within a skin fold also create the ideal environment for fungal and bacterial overgrowth. Medical complications such as skin breakdown and infection become an added risk when the skin's natural protective barrier is eroded by moisture and friction.

ITD can occur in a normal weight individual, as well as in an individual of size (bariatric) at any age. Intertriginous dermatitis is most often found in areas of the body such as in the inframammary, pannus, axillary region, neck creases, posterior knee and inguinal skin folds.

Skin Fold Care

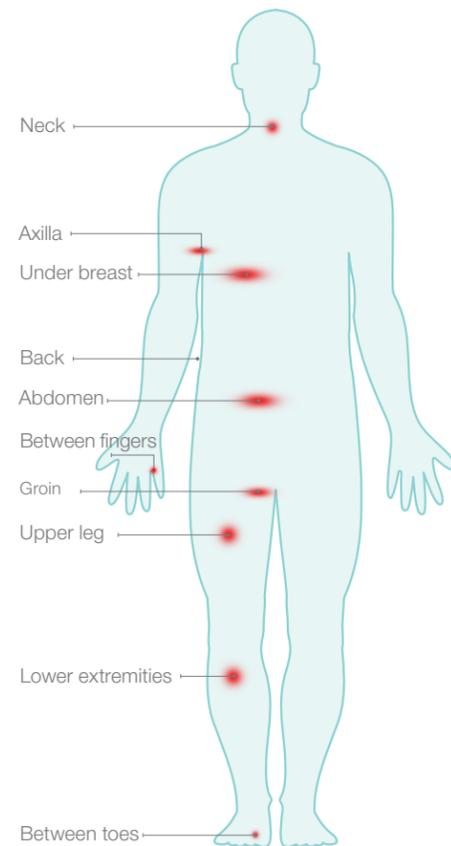
1. Gently cleanse skin with a pH-balanced no-rinse cleanser
2. Pat or air dry skin. Do not rub.
3. Place InterDry® Ag Textile between skin fold or under medical device.
4. Allow at least 2 inches of textile exposed outside of skin fold or brace/splint.
5. Remove textile when bathing and replace when finished.
6. Replace the textile in 5 days or sooner if it becomes soiled with urine or stool.

Intertriginous Dermatitis (ITD) (Cont.)

Delayed or inappropriate care can lead to serious complications, therefore, prevention and early intervention is key. Moisture that remains trapped in a skin fold and friction from skin-on-skin rubbing are the primary etiologies for skin fold problems. Effective skin fold management must address all causative etiologies. Some treatments, such as antifungal powders and creams, wound dressings, towels, and pillowcases used to absorb moisture do not address all causes and can actually delay appropriate care of ITD. Best practice recommends using a knitted polyester fabric that is impregnated with silver complex to wick sweat out of the skin folds and away from the body¹.

When providing care for a patient—whether it's your initial assessment, routine bathing, turning, dressing, or providing incontinence care—remember to take the extra step and closely assess skin fold areas. Look for changes such as redness and moisture build-up. As you can see below, when skin folds are not appropriately managed, ITD can occur and can lead to serious complications. Skin fold management begins by identifying the causative etiologies, and managing them appropriately.

Skin-to-skin and skin-to-device application sites:



Under Breasts Before



Under Breasts After



ICU Settings



Under full immobilizers



Under braces, wraps or blood pressure cuffs²



Between toes

1. Perspectives on Patient Safety, The Joint Commission, April 2009, Volume 9, Issue 4.

2. Moisture Management Challenges for the WOC Nurse. Julie Freyberg, RN, BSN, CWOCCN; Debra Netsch RN, MSN, FNP, CWOCCN; Jan Tessling RN, MSN, ANP, CWOCCN



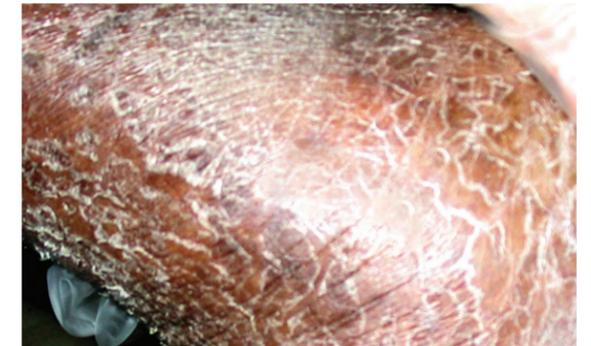
Dry Skin - Xerosis

Dry skin, or xerosis, the medical term for dry skin, requires proper care just as moist skin does.

The stratum corneum, or the protective outermost layer of the epidermis, needs a balance in moisture levels to stay healthy. Dry skin is often thought of as unimportant and can be overlooked. However, if the epidermis is either too moist or too dry, it may be less able to resist infections, friction and shear injuries. Dry skin that develops into scaly, itchy skin is called pruritus. Overly dry skin can become uncomfortable and can increase the risk for skin breakdown.

Dry skin appears rough, uneven, and cracked and feels tight to the touch. There may be raised areas or scaling, flaking or chapping, and complaints of itching. In severe cases, deep cracks, warmth, pain and redness may be evident. The presence of rough, uneven or cracked skin indicates a need for intervention.

Dry skin may be classified as mild, moderate, or severe. It is more easily eliminated or controlled when in the mild to moderate stages.



Dry Skin Care

1. Cleanse

Gently cleanse skin with a mild, pH-balanced cleanser and soft cloth or disposable wash cloth (Bedside Care[®] Foam, Bedside Care, Bedside Care Easiclean[™] Bath or Gentle Rain[®] Extra Mild).

2. Pat skin dry. Do not rub.

3. Moisturize

Apply moisturizing creams or lotions after bathing and as needed (Sween[®] 24, Sween Cream[®] or Atrac-Tain[®] Cream).

Dry Skin - Xerosis (Cont.)

Dry skin is a common problem caused by loss of the skin's natural moisturizers, leading to epidermal water loss. The environment plays an important role in this water loss. During the winter, or with the use of central heating or air conditioning, skin loses moisture more readily. Similarly, frequent bathing or using harsh soap product may increase the risk of dry skin. Dry skin is most often found on the lower legs and feet and less often on the trunk of the body or hands. The skin may be scaling and flaking, it may appear dull with a gray whitish discoloration, or you may see increased skin markings or lines.

The skin needs moisture. Unfortunately, retaining moisture becomes difficult as we age. The elderly have a lower production of free fatty acids and amino acids, which can increase the risk for dry skin. When a patient is scratching or complaining of itching, assess the skin and begin skin care interventions before skin breakdown occurs. Choosing the best type of moisturizer is important as well. For instance, water-based moisturizers require frequent application, often with little improvement. More effective oil-based creams and lotions that trap moisture in the skin and require less frequent application.



Implementing Your Structured Skin Care Regimen

Some of the strongest available evidence associated with maintaining optimal skin health and preventing skin complications involves a structured skin care regimen.

A structured regimen of care includes ongoing education of staff on appropriate product use. Preventive structured skin regimens are important and can improve skin health as well as decrease healthcare costs related to skin breakdown and medical complications.

A simplified, structured regimen:

- Simplifies formulary
- Decreases variations in the delivery of care among staff
- Promotes compliance for optimal outcomes

The bottom line – consistent, structured skin care.



Mild

Severe



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Cleanser	Moisturizer	Skin Protectant	Antifungal	Hand Hygiene
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Bedside Care®	Sween Cream®	Critic-Aid® Skin Paste	Baza® Antifungal	
Bedside Care® Perineal Wash	Sween® Lotion	Baza® Clear		
Bedside Care® EasiCleanse™ Bath	AtracTain® Cream	Baza® Protect		
Gentle Rain® Extra Mild		Baza® Cleanse & Protect		
Gentle Rain® Antibacterial				

Every Nurse is a Skin Care Nurse Quiz

- 1) Patients who are incontinent of urine and/or stool should have perineal area cleansing.
 - a. Daily
 - b. 2-3 times daily
 - c. 4-5 times daily
 - d. As soon as possible after each episode

- 2) Addressing dry skin is important because dry skin is less resistant to the following:
 - a. Infections
 - b. Friction
 - c. Shear and injuries
 - d. All of the above

- 3) Inflammation between skin surfaces or between the skin and a medical device, which is directly related to perspiration, friction, and the presence of bacteria or fungi on the skin is called:
 - a. IAD
 - b. Intertrigo
 - c. Xerosis
 - d. All of the above

- 4) Perineal skin care should begin once the perineal skin turns red.
 - a. True
 - b. False

- 5) The _____ retards the growth and spread of bacteria on the skin because most pathogenic bacteria thrive in alkaline environments.
 - a. Acid mantle
 - b. Epidermis
 - c. IAD
 - d. Stratum corneum

- 6) List the four common types of moisture-associated skin damage:
 - a.
 - b.
 - c.
 - d.

- 7) The outer most layer of the skin, responsible for regulating water loss and retarding bacteria growth is called:
- Dermis
 - Adipose layer
 - Epidermis
 - Hypodermis
- 8) List the three (3) guiding principles of preventative skin care:
- -
 -
- 9) Skin exposed to urine and stool through incontinence will have a _____ pH (more alkaline), which could increase the risk for skin irritation, breakdown and infection.
- Lower
 - Higher
 - Neutral
- 10) Preventative skin care has been identified as an area of improvement for healthcare facilities by which two entities:
- -
- 11) Evidence has shown that implementing a structured and consistent skin care regimen is a key factor to maintaining skin health in a patient population.
- True
 - False
- 12) Oil-based moisturizers are more effective than water-based moisturizers because they trap moisture in the skin and require application.
- True
 - False

Certificate of Completion

This document certifies that

_____ Has completed the *Every Nurse is a Skin Care Nurse Program*

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DATE

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