Assessing risk of pressure- and moisture-related problems in long-term care patients

Learn how to assess risk and care for skin breakdown caused by moisture.

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Assessing moisture and pressure risk in elderly patients continues to be a focus for clinicians in all settings, particularly long-term care. Ongoing research challenges our ideas about and practices for cleansing and protecting damaged skin. Until recently, most wound care clinicians have cleansed long-term care patients' skin with mild soap and water. But several studies have shown pH-balanced cleansers are more efficient than soap and water for cleansing the skin of incontinent patients.

Various terms are used to describe skin breakdown related to moisture—incontinence-associated dermatitis, perineal dermatitis, diaper rash, intertriginal dermatitis, intertrigo, moisture-related skin damage, moisture-associated skin damage, and even periwound dermatitis. This article uses *moisture-associated skin damage* (MASD) because it encompasses many causes of skin breakdown related to moisture. Regardless of what we call the condition, we must do everything possible to prevent this painful and costly problem.

Skin assessment

Start with an overall assessment of the patient's skin. Consider the texture and note dryness, flaking, redness, lesions, macerated areas, excoriation, denudement, and other color changes. (See *Identifying pressure and moisture characteristics*.)

Assessing MASD risk

A patient's risk of MASD can be assessed in several ways. Two of the most widely used pressure-ulcer risk scales, the Norton and Braden scales, address moisture risk. The Norton and Braden subscales should drive your plan for preventing skin breakdown related to moisture or pressure. The cause of breakdown (moisture, pressure, or shear/friction) must be identified, because treatment varies with the cause.

Both the Norton and Braden scales capture activity, mobility, and moisture scores. The Braden scale addresses sensory perception, whereas the Norton scale identi-

Identifying pressure and moisture characteristics

Because injuries from both moisture and pressure can occur in the same locations, determining causative factors is important. This chart helps you identify these factors so you can choose the correct treatment.

	Pressure injury	Moisture injury
Location	Common over bony prominences	• Occurs in skinfolds, buttocks, inner thighs, perineal area • Usually affects a relatively large surface area
Appearance of skin or wound	Involves a distinct area, possibly with necrotic tissue	• Denudement • Red, diffuse inflammation • Whitish area (from maceration)
Depth	Partial- to full-thickness; "bottom-up" skin injury	• Superficial or partial-thickness; "top-down" skin injury
Pain	May be present depending on patient's sensation and ulcer depth	• May be described as burning or itching
Norton and Braden subscales	Activity, mobility, friction/shear, mental condition	• Moisture • Incontinence

fies mental condition. (See *Subscales identifying pressure, shear, and moisture risk*.) Also, be aware that two scales have been published for perineal risk, but neither has been used widely.

You must differentiate pressure- and moisture-related conditions to determine correct treatment. Patients who are repositioned by caregivers are at risk for friction or shear. Also, know that agencies report pressure-ulcer prevalence. Care providers no longer classify mucous-membrane pressure areas in skin prevalence surveys; mucous membranes aren't skin and don't have the same tissue layers. Furthermore, don't report skin denudement from moisture (unless pressure is present) in prevalence surveys.

When moisture causes skin breakdown

Skin has two major layers—epidermis and dermis. The epidermis itself has five layers: The outermost is the stratum corneum; it contains flattened, keratin protein–containing cells, which aid water absorption. These cells contain water-soluble compounds called natural moisturizing factor (NMF), which are surrounded by a lipid layer to keep NMF within the cell. When skin is exposed to moisture, its temperature decreases, the barrier function weak-

Subscales identifying pressure, shear, and moisture risk

If you're using only a pressure-ulcer risk tool, consider using subscales that address moisture in this tool, and develop a plan of care based on need.

Scale	Pressure- and shear-related subscales	Moisture-related subscales
Braden	• Sensory perception • Activity • Mobility • Friction and shear	• Moisture
Norton	• Mental status • Activity • Mobility	• Incontinence

Picturing moisture and pressure effects

These photos show various moisture- and pressure-related effects.

Skin-protectant paste after cleansing on areas denuded by loose stool. Note that not all the paste has been removed—just the areas with stool. More paste now is applied.

Intertriginous dermatitis with fungal rash. Refer to the standard of care and separate skinfolds after treating the rash with a topical cream or, as appropriate, powder- or silver-based commercial product for wicking moisture.

Buttocks with moisture- and pressure-related components. Protecting the skin from moisture and pressure is important with this patient. Refer to the standard of care for protection, and consider such pressure-prevention techniques as turning and repositioning and possibly a pressure-redistribution surface.

Photos courtesy of Joan Junkin.

ens, and skin is more susceptible to pressure and friction/shear injury. Also, when urea in urine breaks down into ammonia, an alkaline pH results, which may reactivate proteolytic and lipolytic enzymes in the stool. (See *Picturing moisture and pressure effects.*)

Caring for moisture-related skin breakdown

The standard of care for moisture-related skin breakdown includes four major components: cleanse, moisturize, protect, and contain. Specific products used for each component vary with the facility's product formulary.

Cleanse

Gently wash the area using a no-rinse cleanser with a pH below 7.0. Don't rub the skin. Pat dry.

Moisturize

Use creams containing emollients or humectants. Humectants attract water to skin cells and help hold water in the cells; *don't* use these products if the skin is overhydrated. Emollients slow water loss from skin and replace intracellular lipids.

Protect

Options for skin protectants include:

- liquid film-forming acrylate sprays or wipes
- ointments with a petroleum, zinc oxide, or dimethicone base
- skin pastes. Don't remove these products totally at each cleansing, but do remove stool, urine, or drainage from the surface and apply additional paste afterward. Every other day, remove the paste down to the bare skin using a no-rinse cleanser or mineral oil.

Be sure to separate skinfolds and use products that wick moisture rather than trap it. These may include:

- commercial moisture-wicking products
- a light dusting with powder containing

refined cornstarch or zinc oxide—*not* cornstarch from the kitchen or powder with talc as the only active ingredient
- abdominal pads.

Contain

To keep moisture away from skin, use absorbent underpads with wicking properties, condom catheters (for males), fecal incontinence collectors, fecal tubes (which require a healthcare provider order), or adult briefs with wicking or gel properties. Call a certified ostomy or wound care nurse for tips on applying and increasing wear time for fecal incontinence collectors.

If 4" × 4" gauze pads or ABD pads are saturated more frequently than every 2 hours, consider applying an ostomy or specially designed wound pouch to the area. Collecting drainage allows measurement and protects skin from the constant wetness of a saturated pad.

Don't neglect the basics, for example, know that wet skin is more susceptible to breakdown. Turn the patient and change his or her position on schedule. Change linens and underpads when damp, and consider using a low-air-loss mattress or bed or mattress with microclimate technology.

Also, be aware that fungal rashes should be treated with appropriate medications. If the patient's skin isn't too moist, consider creams that absorb into the skin; a skin-protecting agent can be used as a barrier over the cream. Besides reviewing and using the standards of care, you may refer to the Incontinence-Associated Dermatitis Intervention Tool, which has categories related to skin damage. **See the "Incontinence-Associated Dermatitis Intervention Tool" (IADIT).**

Bottom line on skin breakdown

To help prevent skin breakdown related to moisture, assess patients' skin appropriately, determine treatment using evidence-based guidelines, and implement an appropriate plan of care.

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