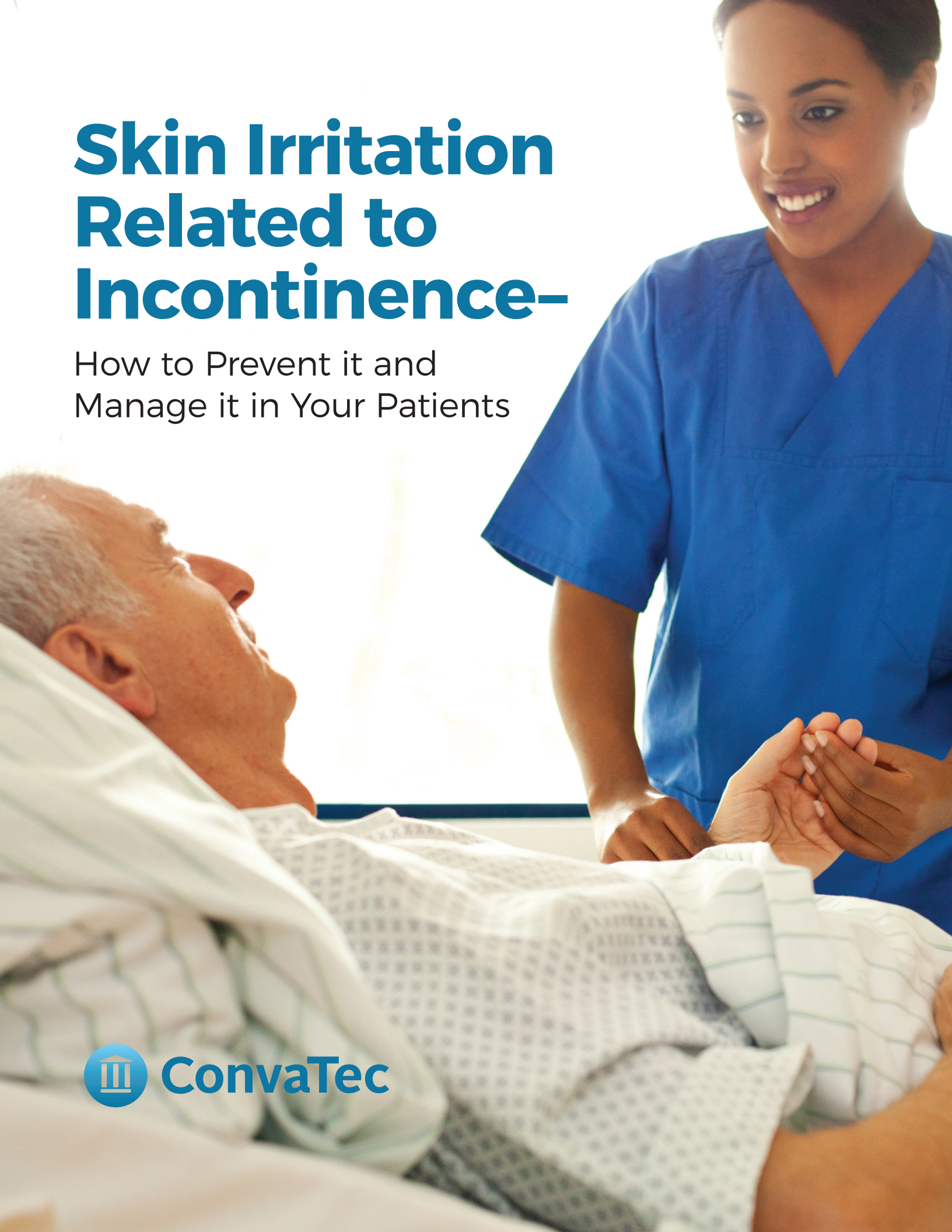
Skin Irritation Related to Incontinence–

How to Prevent it and Manage it in Your Patients



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Introduction

Moisture-associated skin damage (MASD) and incontinence-associated dermatitis (IAD) are a problem for patients and can present significant challenges for nurses. The elderly and critically ill are particularly vulnerable to sources of moisture from numerous causes.[1] Sources of moisture patients are frequently exposed to include: perspiration, urine, liquid feces, wound drainage, mucous and saliva. Management of skin damage related to moisture can be very time consuming and may contribute to painful and costly secondary problems, such as pressure injuries.[1,2]

In a 2012 survey of long-term acute care facilities, 22.8% of admitted patients experienced IAD and 35.1% had at least one pressure injury.[1] Among those living with fecal incontinence, as many as 41% developed IAD.[2] Since IAD is associated with more serious complications, such as pressure injuries and the risk of infection, taking steps towards prevention and proper treatment can have a major effect on outcomes.[3] Associated costs and time investments to manage these secondary complications can be much higher if complications aren't prevented.

This paper will review the topic of IAD: how to identify it, appropriate prevention strategies and evidence-based methods for managing this condition.

IAD presents significant risks for patients

Pressure injuries are associated with IAD - Research shows that there is a clear and persistent link between IAD and the development of pressure-related tissue injury.[3,4] A recent study found that patients with urinary incontinence are up to 4 times more likely to develop a stage 1 or 2 pressure injury and 9 to 20 times more likely to develop a stage 3 or 4 pressure injury.[5] The mortality rate for complications directly related to full-thickness pressure injuries is as many as 60,000 deaths per year.[6]

IAD causes discomfort - Perhaps the most frequent effect of IAD is discomfort. IAD usually first appears as erythema. This can then develop into swelling, vesicles, or sensations of pain, burning or itching.[7,8] Damaged skin exposed to moisture creates an opportune environment for bacterial or fungal skin infections on the exposed areas.[9]

Complications are costly and time-consuming - Given the high prevalence of IAD and associated increased risk of pressure injuries it is not surprising that caring for patients with incontinence takes up a significant portion of nurses' and other professionals' time, especially in long-term care facilities. Caring for those suffering from IAD can also be costly, especially if a pressure injury does occur. In populations with incontinence, recent findings suggest that facility-acquired pressure injuries are more severe when they do develop when compared to continent populations.[5] Over 17,000 lawsuits related to pressure injuries are filed each year in the United States. This makes it the third most common civil malpractice claim, and a major burden for healthcare workers and providers.[6] This further contributes to the benefits of prevention versus treatment, with some studies showing a nearly 30% reduction in cost for treatment using prevention-oriented methods.[9]

Prevention and Treatment Guidelines

Many studies and articles have been published on the subjects of preventing and managing IAD and pressure related tissue injuries. In addition, several consensus statements from subject experts, and evidence-based guidelines have been published on these subjects. The Wound, Ostomy and Continence Nurses Society™ (WOCN®) have published guidelines on both topics, available through their website, www.wocn.org.

Presentation of IAD

Recognizing the severity of IAD and appropriate interventions for managing at-risk patients includes identifying incontinent patients, doing regular skin assessments and protecting skin that is vulnerable to irritation. Best practices include a preventive topical skin care protocol as well as all the important components of a pressure ulcer prevention program for those who also have a high risk for pressure-related tissue injury. Turning and positioning, use of pressure reduction devices for at-risk patients, adequate nutrition and hydration, eliminating sources of friction and shear on the skin, and offloading heels on immobilized patients are all important components of effective care.[10]

Risk Factors for Development of IAD from the 2015 Global IAD Expert Panel:

- Type of incontinence:
  - Fecal incontinence (diarrhea/formed stool)
  - Double incontinence (fecal and urinary)
  - Urinary incontinence
- Frequent episodes of incontinence (especially fecal)
- Use of occlusive containment products
- Poor skin condition (due to aging/steroid use/diabetes)
- Compromised mobility
- Diminished cognitive awareness
- Inability to perform personal hygiene
- Pain
- Raised body temperature (pyrexia)
- Medications (antibiotics, immunosuppressants)
- Poor nutritional status
- Critical illness

The findings from the 2015 Global IAD Expert Panel also concluded that even though increased age is associated with higher prevalence of incontinence, age does not appear to be an independent risk factor for IAD.[11]

Identifying Damage Due to Incontinence

There have been several rating scales for skin damage published in the literature. However, none have been widely adopted and implemented. Further work is being done to refine and clarify all the skin conditions associated with moisture, specifically urine and fecal material. In addition, there is acknowledgement that better assessment of skin with darker tones is needed in order to detect early subtle skin changes caused by moisture or pressure. It has been observed that failure to assess early changes in this patient population exposes them to risk of developing a more advanced level of skin damage before preventive measures are initiated.[12]

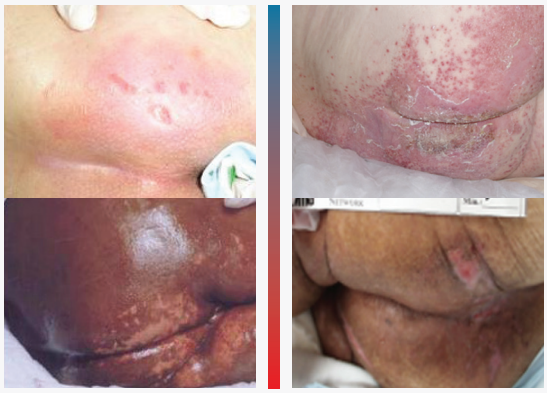
If a patient is identified to be in the at-risk category for developing IAD, the patient should be monitored closely for any signs of changes in the condition of the skin and a preventive skin care plan should be initiated. If patients are able to be assisted to either a bedside commode or to the toilet, they should be helped to do so as a regular part of the plan to prevent incontinent episodes.

Early IAD - Skin has developed erythema and affected areas may be warmer than other surrounding areas. Monitoring the skin on a frequent basis, cleansing with gentle pH-balanced cleansers, and the use of protective barrier products should be an ongoing part of the plan. Use of absorptive underpads or containment devices may be used in conjunction with topical skin care, but must be checked frequently, properly fitted, and of high quality. Use of such products should be per facility policy.[10]

Moderate IAD - The erythema of early IAD will have worsened and skin will become a more noticeable shade of red. There may also be small points of bleeding and skin loss. Treatment should include the treatment associated with early IAD. If there are open areas on the skin that may include vesicles or eroded areas, use of a skin care ointment that will stay in place when exposed to moisture from the skin surface will be necessary.[10]

Severe IAD – With severe IAD, skin will be deep red and there will be more significant areas of skin loss. Treatment should include the treatments for early and moderate IAD. Caregivers should also reposition patients to expose the skin to air if possible, and take steps to reduce the presence of trapped moisture in the affected area, which may occur with the use of underpads or other containment products.[10]

Examples of Moderate to Sever IAD



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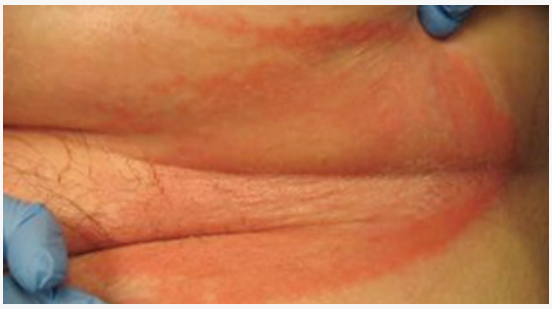
Moisture related skin damage in a skin fold.



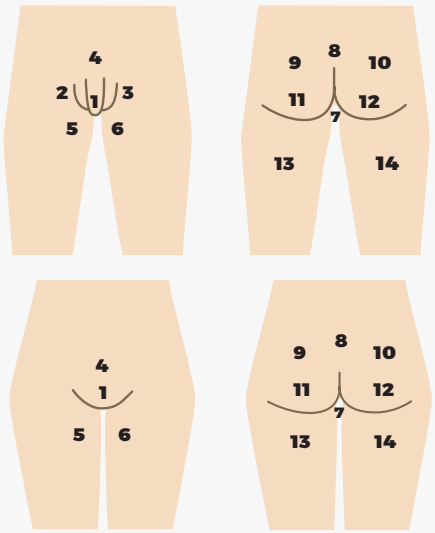
It goes without saying, if the patient is not incontinent, the skin damage is not IAD.

Skin damage in a skin fold could be related to other moisture sources such as perspiration trapped between the folds. This may occur in the gluteal area – between the buttocks. This condition is referred to as intertriginous dermatitis or intertrigo and is also common in bariatric patients who have numerous skin folds exposed to heat, moisture, and friction.

Moisture- or Pressure-Related Skin Damage

A challenging aspect of caring for patients who have incontinence and are at high risk for pressure-related tissue injury is being able to distinguish which condition caused the altered skin integrity. Location is one of the first observations to make. If the area is exposed to urine or stool the lack of skin integrity is likely associated with IAD.

IAD may extend beyond the perineum.[13]



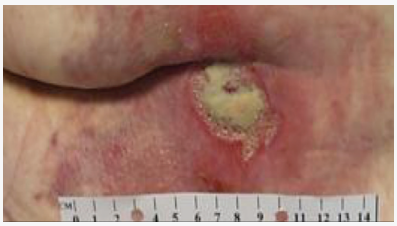
1. Genitalia (labia/scrotum)
2. Right groin fold (crease) between genitalia and thigh
3. Left groin fold (crease between genitalia and thigh)
4. Lower abdomen/suprapubic
5. Right inner thigh
6. Left inner thigh
7. Perinanal skin
8. Gluteal fold (crease between buttocks)
9. Left upper buttock
10. Right upper buttock
11. Left lower buttock
12. Right lower buttock
13. Left posterior thigh
14. Right posterior thigh

Adapted from[13]

If the area is exposed to pressure and shear from an underlying bone or if there is pressure from the outside due to a medical device in contact with the skin, it is more likely a pressure injury.

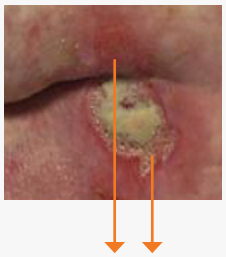
When the skin changes occur in the buttocks or sacral/coccyx it may be more difficult to identify the cause as these areas are exposed to both pressure and moisture. The following are some observations that have been associated with both conditions. This should assist with the appropriate identification of the cause of the skin damage.

What caused this damage?



Incontinence-Associated Dermatitis or Pressure Injury?[14]

	IAD	PI
ETIOLOGY	continued skin exposure of urine, feces or both	ischemia from pressure - shear
LOCATION	buttocks, perineum upper thighs, skin folds – diffuse area	circumscribed and usually over bony prominences or device related
COLOR	red or bright red	red to bluish/ purple
DEPTH	partial-thickness (limited to epidermis and/or dermis)	partial or full-thickness deep tissue injury
NECROSIS	non	slough or eschar
SYMPTOMS	may be painful and cause itching	may be painful



Assessment - Findings Associated with Pressure:

Deep discoloration – Deep Tissue Injury (DTI)

Slough over an open area over a bony prominence – according to current NPUAP guidelines, Stage 3 or 4 pressure injury.

No skin redness in the gluteal fold, or any other findings that would suggest moisture as the cause of this skin damage.[15]

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To further complicate the subject, some experts have raised the possibility that skin damage on the trunk may be caused by a "mixed" etiology. They may exhibit signs that could be attributed to both "top-down" such as friction or moisture type injury, as well as "bottom up" injury such as shear and pressure. More research into clarifying guidelines and assessment is needed in this area.[16]

Skin Care

While there is little evidence regarding the comparison of skin care products in the management of skin exposed to incontinence, there is generalized agreement that the skin should be assessed regularly, cleansed as soon as possible when exposed to moisture, and a skin protectant used on the skin as a barrier.

Moisturizing to preserve the body's natural skin moisture is a regular part of a preventive skin care plan. The skin area exposed to urine or stool should be monitored for signs of dryness and skin care products that contain hydrating ingredients such as emollients and/or humectants should be incorporated in the regular plan of care. Often the skin in the exposed area is overhydrated and the use of a moisturizer is not needed – just a protectant would be used in this case. Many protectant products also contain ingredients that provide these functions.[10,15]

Cleansing – Timely cleansing the skin of the affected area has been shown to help prevent skin damage. By removing urine or feces, the cause of the problem is eliminated and it is important that this be done regularly to limit exposure of skin to irritants.[14] Incontinence cleansing is often provided using specifically formulated cleansers or wipes that provide gentle cleansing, and no-rinse foam cleansers have also been shown to be effective for this purpose. The surfactants used in these products are gentle to the skin and help with the process of removal of urine or fecal material without the need for harsh scrubbing.[10]

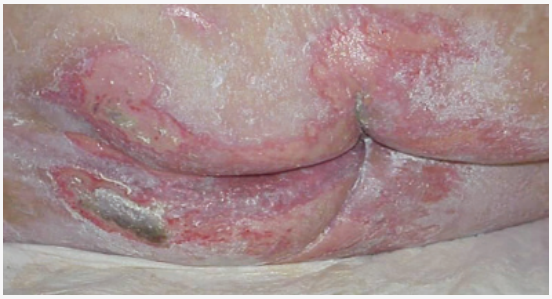
Protecting - Moisture barriers can protect the skin from incontinence and help prevent IAD from developing or worsening. Barrier products include ingredients that will provide a physical layer between the skin and the potentially irritating liquids to which they are exposed. Barrier products usually contain several ingredients to assist in skin protection and to make the product easy to deliver to the skin and stay in place. For instance, most barriers are provided in an ointment form rather than a cream or lotion as the ingredients themselves tend to be thicker. Some common ingredients in skin barrier products include petrolatum, silicone derivatives, and zinc oxide.[10]

Liquid barrier products have been developed that provide specially formulated non-stinging acrylic polymers that provide a clear barrier on the skin.[11]

With moderate to severe incontinence-associated dermatitis, skin erosions or blistering may be present.

The moisture associated with those conditions can interfere with the adherence of some barrier products. Combination products that contain absorptive ingredients have been found to adhere better in these situations. An example is the use of a thicker zinc oxide and petrolatum ointment that contains carboxymethylcellulose. Sensi-Care® Protective Barrier ointment is an example of such a commercially available product.

Example of severe skin damage secondary to IAD.



Note raw exuding denuded areas and a crusted, eroded area – all damage secondary to IAD.

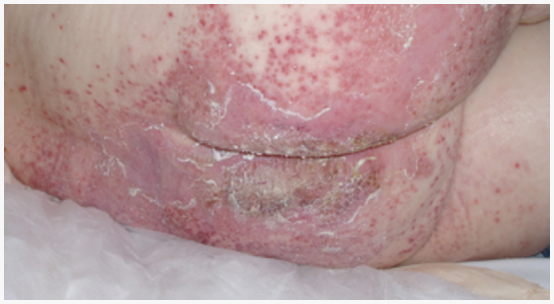
This photo was taken after cleansing. It is routine to have residual traces of zinc oxide present when it is contained in the thicker barrier products that contain absorbent products such as carboxymethylcellulose.

Zinc oxide has also been shown to have soothing and antibacterial properties on the skin.[17] Using products containing zinc oxide may provide protection for at-risk skin or skin with early IAD.

IAD with Candidiasis

With moderate to severe IAD the skin may experience an overgrowth of bacteria or fungi, with *Candida albicans* being one of the most common invading organisms. Just keeping moisture off the skin will not be effective in managing this situation. A product that contains a safe and effective dose of an antifungal such as miconazole nitrate is often used in this situation. There are creams, powders, sprays and ointments that contain antifungal ingredients. When using such a product with incontinent patients, the ointment format barrier product is often more convenient and effective as the antifungal is delivered directly to the skin with the barrier product.[11] Be sure to always follow manufacturer's indications and instructions for use of skin care product.

Classic presentation of a yeast infection of the skin with IAD caused by *Candida albicans*.



Bright red rash with characteristic pinpoint or "satellite" lesions around the central red area. This condition requires an antifungal containing product.

Conclusions

Moisture-associated skin damage can be a challenge to identify and manage for healthcare professionals. Early and ongoing patient assessment, the establishment of evidence-based and cost effective skin care protocols that are communicated to staff as a part of an overall plan of prevention and skin management will help assure positive outcomes for patient comfort and protection. Patient comfort and preservation of personal dignity by being effectively managed is increasingly a part of the measurement of positive patient experiences in health care facilities. The selection and use of effective skin care products that can help cleanse, moisturize and protect at-risk or damaged skin is a key part of this process.

How ConvaTec Can Help

ConvaTec also manufactures a complete line of advanced wound care products, ostomy products as well as the Flexi-Seal™ line of Fecal Management Systems.

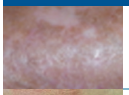
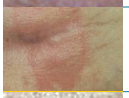
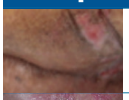
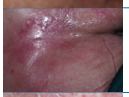
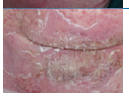
ConvaTec's skin care products provide evidence-based options as part of a preventive skin care protocol.

ConvaTec's products help cleanse, moisturize, protect, and treat, with beneficial ingredients and pH-friendly formulation for fragile skin. A study in two long-term care facilities demonstrated that the use of ConvaTec products as part of a protocol of care helped reduce the incidence of pressure injuries.[18,19]

Studies also show that a disposable wipe containing skin protectants, cleansers and moisturizers can be more effective than using soap and water at preventing complications and reducing the severity of IAD.[10,20] The ConvaTec skin care product line includes such a product, Sensi-Care® Skin Protectant Incontinence Wipes.

To learn more about ConvaTec's skin care portfolio click here.

Work with your ConvaTec representative to select a product formulary based on the needs of your staff and patients. Educational materials, such as the example below, can be developed to support your facility's needs.

Routine Preventive Skin Care	1 CLEANSE Recommended	2 MOISTURIZE Recommended	3 PROTECT Recommended
 INTACT SKIN	Aloe Vesta® Cleansing Foam	Aloe Vesta® Daily Moisturizer	Sensi-Care® Clear Zinc
 REDNESS	Aloe Vesta® Cleansing Foam	Aloe Vesta® Daily Moisturizer	Sensi-Care® Clear Zinc
 DRY SKIN	Aloe Vesta® Cleansing Foam	Sensi-Care® Body Cream	Sensi-Care® Clear Zinc
 INCONTINENCE - INTACT SKIN	Aloe Vesta® Cleansing Foam	Moisturizer Not Needed	Sensi-Care® Clear Zinc
Compromized Skin Care	**Recommended**	**Recommended**	**Recommended**
 INCONTINENCE - RAW SKIN	Aloe Vesta® Cleansing Foam	Moisturizer Not Needed	Sensi-Care® Clear Zinc
 DENUDED AND WEEPING SKIN	Aloe Vesta® Cleansing Foam	Moisturizer Not Needed	Sensi-Care® Clear Zinc
 FUNGAL INFECTION	Aloe Vesta® Cleansing Foam	Moisturizer Not Needed	Aloe Vesta® Clear Antifungal Ointment

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