

SUPPLEMENT

Wounds<sub>UK</sub>



# THE IDENTIFICATION AND MANAGEMENT OF MOISTURE LESIONS

*Karen Ousey, Janice Bianchi,  
Pauline Beldon, Trudie Young*

Continuous  
Innovation in  
Faecal  
Management  
Systems



ConvaTec

**WE  
LISTEN**  
to your  
clinical needs

## OUR RESPONSE: Nurse Inspired Improvements

### Sampling Port for your safety

Provides access to catheter for safe and easy stool collection

### Medication Delivery for your convenience

Deliver medication rectally via the irrigation port

### Extended Catheter for flexibility for your patients

Adapts to a range of patient heights and weights

**FlexiSeal** *SIGNAL*<sup>™</sup>  
The seal of innovation<sup>™</sup>

**Clinical Support Freephone:**

**(UK) 0800 289 738**

**(ROI) 1800 946 938**

©/TM indicates trademarks of ConvaTec Inc.

© 2012 ConvaTec Inc.

AP-012694-GB

Wound digest <i>A look at the latest research on moisture lesions and IAD</i>	s4
Top tips on avoidance of incontinence-associated dermatitis <i>Janice Bianchi</i>	s6
The causes and clinical presentation of moisture lesions <i>Trudie Young</i>	s9
The use of faecal management systems to combat skin damage <i>Janice Bianchi</i>	s11
The latest advances in skin protection <i>Pauline Beldon</i>	s17

© Wounds UK Limited,  
A Schofield Healthcare  
Media Company

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without prior permission from the publishers.

The views expressed in this document are those of the authors and do not necessarily reflect those of Wounds UK. Any products referred to should only be used as recommended by manufacturers' data sheets.

To reference this document, cite the following:  
Wounds UK (2012) *Moisture Lesions Supplement*. Wounds UK, London

## INTRODUCTION

Moisture lesions, moisture ulcers, perineal dermatitis, diaper dermatitis and incontinence associated dermatitis (IAD) all refer to skin damage caused by excessive moisture. Yet there is often confusion between pressure ulcers and this kind of lesion. Distinguishing between the two is of clinical importance since prevention and treatment are quite different for each (Defloor et al, 2005a). Due to the location of moisture lesions, they are often mistaken for pressure ulcers (Defloor et al, 2005b), however, skin damage as a result of excessive moisture is defined as being associated with incontinence and not pressure or shear (Defloor et al, 2005a), although moisture can contribute to the formation of pressure ulcers (EPUAP and NPUAP, 2009).

Gray et al (2012) defined IAD as erythema and oedema of the surface of the skin, sometimes accompanied by bullae with serous exudate, erosion, or secondary cutaneous infection. The risks of developing pressure ulcers or other problems with the skin increase where there is faecal and/or urinary incontinence, often resulting in maceration of the skin and friction (Cutting and White, 2002). This leads to the protective barrier of the skin being breached, allowing enzymatic attack (Wishin et al, 2008). It is of paramount importance that clinicians are able to correctly identify this and implement strategies for the prevention and/or treatment of these lesions.

The significance of correct identification and classification has never been more central, with many trusts identifying that moisture lesions are often incorrectly categorised as category 2 pressure ulcers. There are a range of tools that can be used for evaluation of IAD, including the Perineal Assessment Tool (Nix, 2002); the Peri-rectal Skin Assessment Tool (Storer-Brown, 1993); IAD Skin Condition Assessment Tool (Kennedy et al, 1996); and the IAD and its severity instrument (Borchert et al, 2010).

Proactive protection of the skin from maceration should be a priority, with regular skin inspection and cleansing and accurate recordings of skin assessment and frequency of incontinence episodes (Ousey and Gillibrand, 2010). A structured skin cleansing regimen that does not deplete the skin of moisture should be implemented. Nix (2006) recommended the use of as humectants, such as glycerine, esters, lanolin, cetyl or stearyl alcohol, and mineral oils, as they prevent the loss of natural moisture from the skin. Treatment goals recommended by Gray et al (2012) include protection of the skin from further exposure to irritants, establishment of a healing environment, and eradication any cutaneous infection.

Karen Ousey, June 2012

**Borchert K et al (2010)** The incontinence-associated dermatitis and its severity instrument: development and validation. *J Wound Ostomy Continence Nurs* 37 (5): 527-535; **Cooper P (2002)** Incontinence induced pressure ulcers. *Nurs Residential Care* 5(4): 16-21; **Cutting KE, White RJ (2002)** Maceration of the skin: 1: the nature and causes of skin maceration. *J Wound Care* 11(7): 275-8; **Defloor T et al (2005a)** Pressure ulcer classification differentiation between pressure ulcers and moisture lesions. Available at: [http://www.epuap.org/archived\\_reviews/EPUAP\\_Rev6.3.pdf](http://www.epuap.org/archived_reviews/EPUAP_Rev6.3.pdf); **Defloor T et al (2005b)** The effect of a pressure-reducing mattress on turning intervals in geriatric patients at risk of developing pressure ulcers. *Int J of Nurs Stud* 42(1): 37-46; **EPUAP/NPUAP (2009)** Prevention and treatment of pressure ulcers: quick reference guide. Available: [http://www.epuap.org/archived\\_reviews/EPUAP\\_Rev6.3.pdf](http://www.epuap.org/archived_reviews/EPUAP_Rev6.3.pdf); **Gray M et al (2012)** Incontinence-associated dermatitis: A comprehensive review and update. *JWOCN*. January/February; **Kennedy K et al (1996)** *Cost-effectiveness Evaluation of a New Alcohol-free, Film-Forming Incontinence Skin Protectant*. White paper. St Paul, MN: 3M Healthcare; **Nix DH (2002)** Validity and reliability of the Perineal Assessment Tool. *Ostomy Wound Manage* 48 (2): 43-49. **Nix D (2006)** Skin matters: Prevention and treatment of perineal skin breakdown due to incontinence. *Ost Wound Man* 52(4): 26-8; **Ousey K, Gillibrand W (2010)** Using faecal collectors to reduce wound contamination. *Wounds UK* 6(1): 86-91; **Storer-Brown D (1993)** Perineal dermatitis: can we measure it? *Ostomy Wound Manage* 39(7): 28-31. **Voegeli, D (2008)** The effect of washing and drying practices on skin barrier function. *J Wound Ostomy Continence Nurs* 35(1): 84-90; **Wishin J et al (2008)** Emerging options for the management of fecal incontinence in hospitalized patients. *J Wound Ostomy Continence Nurs* 35(1): 104-10.

# WOUND DIGEST

## SELECTED PAPERS OF INTEREST

1. Prevalence, management and clinical challenges associated with acute faecal incontinence in the ICU and critical care settings: The FIRST™ cross-sectional descriptive survey.

2. Efficacy of an improved absorbent pad on incontinence-associated dermatitis in older women: cluster randomized controlled trial.

In each *Wounds UK* supplement, the digest summarises, in turn, recent key papers in the areas of leg ulcers, moisture lesions, pressure ulcers and complex wounds.

### 1 Prevalence, management and clinical challenges associated with acute faecal incontinence in the ICU and critical care settings: The FIRST™ cross-sectional descriptive survey

Readability	✓	✓	✓	✓	
Relevance to daily practice	✓	✓	✓	✓	
Novelty factor	✓	✓	✓		

- ▶▶ This paper sought to investigate and evaluate the prevalence, awareness and management of acute faecal incontinence with diarrhoea (AFId) in the intensive care unit.
- ▶▶ The design incorporated a cross-sectional descriptive survey of intensive care units across Europe, including Germany, Italy, Spain and the United Kingdom.
- ▶▶ Nine-hundred and sixty two questionnaires were completed by nurses (60%), physicians (29%) and pharmacists or purchasing personnel (11%).
- ▶▶ The estimated prevalence of AFId ranged from 9–37% of patients on the specific day the survey was performed.
- ▶▶ The majority of respondents reported a low-to-moderate awareness of the problems of AFId.
- ▶▶ Patients with AFId often demonstrated compromised skin integrity, including perineal dermatitis, moisture lesions or sacral pressure ulcers.
- ▶▶ Reducing the risk of cross-infection and ensuring skin integrity were rated as the most important clinical priorities. Forty-nine percent of respondents said there was no hospital protocol or guideline for AFId management in their area.
- ▶▶ There was a poor awareness of how long nurses spent managing AFId — 60% of respondents estimated that 10–20 minutes with two to three clinicians are necessary for each AFId episode.
- ▶▶ The report concluded that AFId in the critical care setting may be an

underestimated problem, which is associated with a high use of nursing time.

Bayón García C, Binks R, De Luca E, Dierkes C, Franci A, Gallart E, Niederalt G, Wyncoll D (2012) Prevalence, management and clinical challenges associated with acute faecal incontinence in the ICU and critical care settings: The FIRST™ cross-sectional descriptive survey. *Intensive Crit Care Nurs*. 2012 Feb 29. [Epub ahead of print]

### 2 Efficacy of an improved absorbent pad on incontinence-associated dermatitis in older women: cluster randomized controlled trial

Readability	✓	✓	✓	✓	
Relevance to daily practice	✓	✓	✓		
Novelty factor	✓	✓	✓		

- ▶▶ This study examined the efficacy of an absorbent pad against incontinence-associated dermatitis (IAD).
- ▶▶ Most older adults with urinary incontinence use absorbent pads. The perineal skin region is a key risk area for the development of IAD.
- ▶▶ A cluster randomized controlled design compared two absorbent pads in female inpatients aged 65 years and over. Healing rates of IAD and variables of skin barrier function, such as skin pH and skin moisture, were compared.
- ▶▶ Thirteen patients (43.3%) from the test absorbent pad group and four patients (13.3%) from the usual absorbent pad group recovered completely from IAD. Moreover, the test absorbent pad group healed significantly faster than the usual absorbent pad group (p = 0.009).

Sugama J, Sanada H, Shigeta Y, Nakagami G, Konya C (2012) Efficacy of an improved absorbent pad on incontinence-associated dermatitis in older women: cluster randomized controlled trial. *BMC Geriatr*. 2012 May 29;12(1):22. [Epub ahead of print]

To compile the digest a Medline search was performed for the three months ending in June, 2012 using the search term 'moisture lesions.' Papers have been chosen on the basis of their potential interest to practitioners involved in day-to-day wound care. The papers were rated according to readability, applicability to daily practice and novelty factor.



# VISIT THE NEW WOUNDS UK MOISTURE LESIONS E-ACADEMY

Wounds UK has released its latest innovation in online learning with the new moisture lesions e-academy. Featuring practical step-by-step guidance on diagnosing and managing moisture lesions, the new e-academy provides a vital resource for tissue viability nurses, nursing home staff, link nurses and anyone else who comes into contact with moisture lesions on a regular basis.

[www.e-academy.wounds-uk.com](http://www.e-academy.wounds-uk.com)

# TOP TIPS ON AVOIDANCE OF INCONTINENCE- ASSOCIATED DERMATITIS

## KEY POINTS

- ▶ It is essential that when presented with a patient who is incontinent, clinicians take a full history and carry out a full assessment.
- ▶ In some cases, timely and appropriate skin cleansing and protection can prevent and heal incontinence-associated dermatitis (IAD).
- ▶ The aim of skin protection products is to isolate exposed skin from harmful or irritant substances.

This article looks at methods for avoiding the development of incontinence-associated dermatitis (IAD) and provides some useful tips for practice.

## INTRODUCTION

A systematic approach to assessment of IAD helps with early recognition of whether a patient is at increased risk of complications. It also helps healthcare practitioners to identify when prevention strategies should be put into place. This section describes the important elements of both assessment and prevention strategies which should be employed to avoid IAD.

### 1 RISK ASSESSMENT

It is essential that when presented with a patient who is incontinent, clinicians take a full history and carry out a full assessment to ensure that an effective treatment plan can be implemented (Bardsley, 2008). Clinicians should also consider whether any of the procedures that will be carried out, or prescribed drugs, have the potential to cause loose bowel movements.

### 2 ROUTINE SKIN ASSESSMENT

If the risk assessment has indicated that the patient is high risk of developing IAD, the skin should be inspected routinely. IAD is characterised by inflammation of the surface of the skin with erythema, oedema and in some cases bullae (vesicles) containing clear exudates. In severe cases, erosion of the epidermis can also be seen. Kennedy and Lutz (1996) noted that the erythema may be patchy or consolidated (*Figure 1*).

Observation of the distribution of these symptoms will help clinicians to differentiate from other types of tissue damage, including intertrigo (inflamed skin folds caused by exposure to perspiration, friction and bacterial or fungal bioburden),

periwound maceration (skin breakdown as a result of exposure to wound exudate) and pressure ulcers.

Gray (2007) observed that IAD associated with urinary incontinence tends to occur in the skin folds and the labia majora in women or the scrotum in men, whereas IAD associated with faecal incontinence tends to originate in the perianal area. In severe cases, the erythema may extend to the lower abdomen and sacrum (Beldon, 2008). Candidiasis is a common complication of IAD and will manifest itself as a macropapular rash with satellite lesions.

### 3 GRADE THE LEVEL OF DAMAGE

When reviewing the language clinicians use to describe the degree of IAD, Bianchi and Johnstone (2011) found there was no consistency. In order to help clinicians to accurately grade the degree of skin damage and suggest management strategies, the National Association of Tissue Viability Nurses Scotland (NATVNS) developed an excoriation grading tool, which includes clinical images, grades the level of excoriation and offers management advice. This tool may also help to encourage a consistent approach in care of patients with IAD.

### 4 CLEANSING ROUTINE

In some cases, timely and appropriate skin cleansing and protection can prevent and heal IAD. Soap and water should be avoided. Soap is made up of a mixture of alkalis and fatty acid. The alkalis in soap are thought to have the potential to raise the pH of the skin damaging the acid mantle (Beldon, 2008). Perineal skin cleansers are the best choice for individuals with IAD. They come in different formats including emulsions,

JANICE BIANCHI  
Medical Education Specialist at JB  
Med Ed Ltd; Honorary Lecturer at  
University of Glasgow

foams and sprays. They combine detergents and surfactant ingredients to loosen and remove dirt of irritants. Many are also pH balanced and/or contain moisturising agents, which restore or preserve optimal barrier function.

## 5 SKIN PROTECTION

The aim of skin protection products is to isolate exposed skin from harmful or irritant substances. In the case of IAD, skin protectors isolate the skin from excessive moisture, urine or faeces. Liquid barrier films and moisture barrier creams or ointments are frequently used products. Bliss (2005) compared four skin care regimens in the prevention of IAD,

including:

- ▶ Acrylate polymer-based liquid film
- ▶ Petroleum ointment (43%)
- ▶ Zinc oxide in 1% dimethicone (12%)
- ▶ Petroleum ointment (98%).

With all of the regimens, Bliss et al (2005) found that the incidence of IAD was low and there was no significant difference in the development of IAD between them. These results suggest the use of a defined skin care regimen using quality skin care products will prevent the occurrence of IAD.

If the IAD does not improve using these measures, the recommendations for napkin dermatitis in babies and children



Figure 1: Erythema may be patchy or consolidated.

Table 1

### Common causes of incontinence

#### Possible causes of faecal incontinence

##### **Anal sphincter damage or weakness**

Obstetric trauma to anal sphincter muscles; surgery e.g. lateral sphincterotomy, haemorrhoidectomy, anal stretch

##### **Neurological conditions**

Spinal chord injury; multiple sclerosis; Parkinson's disease; spina bifida; stroke

##### **Impaction with overflow**

Frail or immobile patient; cognitive impairment, e.g. dementia; immobility/physical disability

##### **Ano-rectal pathology**

Rectal prolapse; congenital abnormalities; anal/recto-vaginal fistula

##### **Diarrhoea/intestinal hurry**

Chron's disease; ulcerative colitis; drugs, e.g. antibiotics

#### Possible causes of urinary incontinence

##### **Stress incontinence**

Pelvic floor muscles damaged or weakened

Urethral sphincter damage

##### **Urge incontinence**

Urinary tract infection

Neurological conditions as above

Bladder cancer

Increasing age

Bladder outlet obstruction/stones

Benign prostatic hypertrophy (men)

Unknown cause

##### **Overflow incontinence**

Enlarged prostate gland (men)

Bladder stones

Constipation

Surgery to the bowel or spinal cord

Weak bladder muscles

Nerve damage

Some medications

##### **Medications associated with urinary incontinence**

Alpha-adrenergic agonists; alpha-adrenergic blockers; angiotensin-converting enzymes; diuretics; cholinesterase inhibitors; some medications with anticholinergic effect; hormone replacement therapy; opioids; sedatives and hypnotics.

### References

- Bardsley A (2008) An introduction to faecal incontinence. *Continence Essentials* 1: 110–16
- Beldon P (2008) Faecal incontinence and its impact on wound care. *Continence Essentials* 1: 22–27
- Bianchi J, Page B, Robertson S (2011) Common skin conditions in children. In: Bianchi J, Page B, Robertson S (eds). *Your Dermatology Pocket Guide: Common Skin Conditions Explained*. NHS Education Scotland: Edinburgh
- Bianchi J, Johnstone A (2011) Moisture-related skin excoriation: a retrospective review of assessment and management across five Glasgow Hospitals. Oral presentation 14th Annual European Pressure Ulcer Advisory Panel meeting. Oporto, Portugal



Figure 2: A faecal management system in situ.

may be an appropriate route to follow. Published literature suggests that when napkin dermatitis does not improve using barrier products, a weak topical steroid such as 1% hydrocortisone cream or ointment can be applied twice a day for 3–5 days. If candidiasis is present, 1% clotrimazole cream is recommended, or a combined hydrocortisone/clotrimazole cream when both dermatitis and candidiasis are present (Hunter et al, 2002; Bianchi et al, 2011).

## 6 TREATMENT AND MANAGEMENT OF INCONTINENCE

The ultimate goal for any clinician caring for an individual with urinary or faecal incontinence is to alleviate and control bowel/bladder function (Cooper, 2011). Causes of incontinence are numerous and multifactorial (see Table 1). A multidisciplinary approach may be required, with the continence advisor included in the team of clinicians involved in planning care.

## 7 CONTAINMENT OF URINE OR FAECES

In individuals where bladder and or bowel control is not possible, there are a range of containment products available.

**Body worn pads:** these disposable pads come in various sizes depending on the volume of fluid expected. They are made of super-absorbent material, which turns to a gel when it comes into contact with fluid, helping to lock the fluid away from the skin. It is essential to change soiled products on a regular basis.

**Urinary catheters:** urinary catheterisation is not without risk and should not be carried out unless there is a sound rationale. In the case of uncontrolled urinary incontinence with skin damage, the clinician should carry out a risk assessment to determine whether short-term catheterisation with an indwelling catheter is the best course of treatment for the individual.

**Anal bags:** These disposable containment bags are applied to the peri-anal area. The skin-friendly adhesive holds the product in situ. While they are useful, they may not be appropriate for high output of

faecal fluid or where the skin is already damaged by IAD.

**Faecal management systems:** In cases of severe or high-volume diarrhoea, IAD and widespread skin breakdown can occur very rapidly. In this instance it may be appropriate to consider the use of a faecal management system (Figure 2). These temporary faecal containment devices consist of a soft flexible silicone catheter, which is inserted digitally into the rectum and held in place by a low pressure balloon cuff that is inflated with saline or water. The catheter is then attached to a closed-ended collection bag, which enables accurate fluid balance to be maintained. These appliances are vital if the patient is at risk of dehydration. The device can be left in situ for 29 days and is a cost effective way of managing acute diarrhoea (Johnstone, 2005). While there is a paucity of evidence for their use at the present time, if there is a risk of cross-infection with *Clostridium difficile* or Norovirus, faecal management systems may reduce risk to other patients due to their ability to contain faecal matter.

## 8 DOCUMENT FREQUENCY OF EPISODES OF INCONTINENCE AND STOOL CONSISTENCY

It is important to observe for changes in frequency of faecal or urinary incontinence as this may indicate an increase in risk status. Equally if incontinence is becoming infrequent, the patient may be at less risk of skin breakdown. The Bristol stool chart should also be used to classify the form of the faeces.

## 9 EDUCATION OF PATIENTS AND/OR CARERS

Education should be based around the use of a structured skin care programme, including skin cleansers, skin protectors and continence management. It is important for the clinician to be aware of the possible causes of faecal and urinary incontinence. This knowledge will aid early identification of risk and timely intervention.

## CONCLUSION

If clinicians adopt the tips described here they may be able to reduce the number of patients developing IAD and the associated pain, discomfort and embarrassment. **WUK**

## References

- Bliss DZ (2005) An economic evaluation of skin damage prevention regimes amongst home residents with incontinence: labor costs. *J Wound Ostomy Continence Nurs* 32 (Supp 3): 51
- Cooper P (2011) Skin Care: managing the skin of incontinent patients. *Wound Essentials* 6: 69–74
- Gray M (2007) Incontinence-related skin damage: essential knowledge. *Ostomy Wound Manage* 53: 12: 28–32
- Hunter J, Slavin J, Dahl M (2002) Eczema and dermatitis. In: Hunter J, Slavin J, Dahl M (eds.) *Clinical Dermatology*. Blackwell Publishing Ltd, Oxford
- Johnstone A (2005) Evaluating Flexi-Seal® FMS: a faecal management system. *Wounds UK* 1: 3: 110–14
- Kennedy KI, Lutz I (1996) Comparing the efficacy and cost effectiveness of three skin protectants in the management of incontinence dermatitis. In: *Proceedings of the European Conference on Advances in Wound Management*. Amsterdam



# THE CAUSES AND CLINICAL PRESENTATION OF MOISTURE LESIONS

Excessive moisture from perspiration, urine, faeces, wound exudate or a combination of these factors, can begin to erode the integrity of the skin. The author looks at how the clinician can best identify moisture lesions.

The skin provides the body with an external protective layer. However, this layer is susceptible to damage and trauma from external elements, one of which is chemical damage in the form of excessive moisture from perspiration, urine, faeces, wound exudate, or a combination of these factors (Cooper et al, 2006; Evans and Stephen-Haynes, 2007).

## SKIN DAMAGE

After exposure to excessive moisture, the skin becomes damp, soggy and clammy and eventually saturated. At any point in this trajectory, the skin's permeability can be breached and it is susceptible to physical damage from friction and shearing forces (Beeckman et al, 2009).

The outer layer of the epidermis consists of 70% protein, 15% lipids and 15% water and is attacked by lipidolytic and proteolytic enzymes. These are found in the highest quantity in liquid faeces (Beeckman et al, 2009).

The enzymes break down and destroy the intercellular 'cement' and disrupt the physical construction of the stratum corneum, resulting in erosion of the epidermis and its subsequent barrier capabilities.

This may be further compounded by an increase in the normal acidic pH of the skin (4–6.8) due to the alkalinity of urine and faeces (Cooper et al, 2006). The increase in the pH of the skin encourages bacterial colonisation, most often with *Candida albicans* and *Staphylococcus* from the perineal skin and the gastrointestinal tract

(Beeckman et al, 2009). In this situation, the skin is at risk of developing a secondary infection in the injured epidermis (Beldon, 2008).

## Incontinence

Urinary incontinence alone can cause moisture damage, however, it is exacerbated when combined with faecal incontinence (Vogeli, 2010). Initially the skin may be able to maintain its integrity against the physical and chemical assault, however, the intensity, duration and frequency of exposure to the irritants will influence the speed of the breakdown (Nix and Haugen, 2010).

Extrinsic factors may exacerbate the problem, for instance, the side effect of some medications includes diarrhoea (Nix and Haugen, 2010).

## Microclimate

The role of the microclimate is being increasingly recognised as an influence on the humidity of the skin. Regulation of the microclimate, which includes controlling the temperature and moisture of the skin, are seen as pivotal in protecting the skin from external damage (Langoen, 2010).

## MOISTURE LESIONS

There are many causes of and many ways to describe moisture-induced skin damage, however, the most common term is moisture lesion.

Incontinence-associated dermatitis is one cause of moisture lesions (Langoen, 2010). One literature review of incontinence-associated dermatitis identified 18 different terms for the condition (Beeckman et al, 2009).

## References

- Beeckman D, Schoonhoven L, Verhage S, Heyneman A, Defloor T (2009) Prevention and treatment of incontinence-associated dermatitis: literature review. *J Clin Nurs* 65(6): 1141–54
- Beldon P (2008) Problems encountered managing pressure ulceration of the sacrum. *Br J Comm Nur* 13(Suppl 12): S6–10
- Bianchi J, Johnstone A (2011) Moisture-related skin excoriation: a retrospective review of assessment and management across five Glasgow hospitals. Poster presentation. Harrogate, Wounds UK
- Cooper P, Clark M, Bale S (2006) *Best Practice Statement: care of the older person's skin*. Wounds UK, London
- Defloor T, Schoonhoven L (2004) Inter-rater reliability of the EPUAP pressure ulcer classification system using photographs. *J Clin Nurs* 13: 952–59
- Defloor T, Schoonhoven L, Fletcher J, et al (2005) Pressure ulcer classification differentiation between pressure ulcers and moisture lesions. *EPUAP Review* 6(3) 81–5
- Evans J, Stephen-Haynes J (2007) Identification of superficial pressure ulcers. *J Wound Care* 16(2): 54–56

## TRUDIE YOUNG

Lecturer, Bangor University (Hon);  
Tissue Viability Nurse, Aneurin Bevan  
Health Board (Hon)

**References**

Gray M, Bliss D, Doughty D, Ermer-Seltum J, Kennedy-Evans K, Palmer M (2007) Incontinence-associated dermatitis: a consensus. *J Wound Ostomy Continence Nurs* 34: 45–54

Kottner J, Halfens R (2010) Moisture lesions: interrater agreement and reliability. *J Clin Nurs* 19: 716–20

Langoen A (2010) Innovations in care of the skin surrounding pressure ulcers. Available at: <http://www.woundsinternational.com/practice-development/innovations-in-care-of-the-skin-surrounding-pressure-ulcers> (accessed 29 May, 2012)

Nix D, Haugen V (2010) Prevention and management of incontinence-associated dermatitis. *Drugs Aging* 27(6): 491–96

Vogeli D (2010) Moisture-associated skin damage. *Nurs Res Care* 12(12): 578–83

Gray et al (2007) defines a moisture lesion as ‘reactive responses of the skin to chronic exposure to urine and faecal matter, which could be observed as an inflammation and erythema with or without erosion and denudation.’ Typically there is loss of the epidermis and the skin appears macerated, red broken and painful (Cooper et al, 2006; Gray et al, 2007).

**Pressure damage**

The link between incontinence and pressure damage has already been established. This is demonstrated by the inclusion of incontinence in the majority of pressure ulcer risk assessment tools (Braden — [www.bradenscale.com](http://www.bradenscale.com)). In addition, pressure ulcers (categories 2 and 3) are most commonly confused with moisture lesions (Defloor and Schoonhoven, 2004).

**IDENTIFICATION**

Tools have been devised to assist with the identification of moisture lesions, for instance there is a skin excoriation grading tool, however, their integration into clinical practice has not been fully achieved (Bianchi and Johnstone, 2011).

The European Pressure Ulcer Advisory Panel (EPUAP) suggest six questions/statements to consider when identifying the cause of a lesion:

- ▶ Check the (wound) history in the patient’s record
- ▶ Ascertain what measures have been taken/care provided so far
- ▶ What is the skin condition at the different pressure points?
- ▶ Check whether movement, transfers and changes in position may have caused the lesion
- ▶ If a patient is incontinent, consider whether the damage is a moisture lesion or not
- ▶ Exclude other possible causes (Defloor and Schoonhoven, 2004).

Along with the questions above, *Table 1* can help clinicians identify moisture lesions, however, they do not provide a watertight process for reaching the correct diagnosis (Kottner and Halfens, 2010). Also, the prevention and treatment of pressure ulcers and moisture lesions require different clinical interventions, therefore, it is essential that clinicians can differentiate between the two conditions. If confusion exists, this may result in suboptimal use of limited resources, such as pressure-redistributing equipment and nursing intervention (Beckman et al, 2009).

**CONCLUSION**

It is important to establish the prevalence of moisture lesions in different care settings as this will assist in the development of a strategy and allocation of resources to tackle the problem.

In addition, the pathophysiological mechanisms that cause moisture lesions require further exploration in order for the exact relationship between cause and effect to be established. Once this is better understood, it will be possible to begin providing support in the form of an unambiguous clinical definition and a validated observation instrument (Beckman et al, 2009). **WUK**

**Table 1**  
Clinical presentation of moisture lesions and pressure ulcers

Characteristic	Moisture lesion	Pressure ulcer
<b>Cause</b>	Moisture must be present (e.g. shining, wet skin caused by urinary incontinence or diarrhoea)	Pressure and/or shear must be present
<b>Location</b>	May occur over bony prominence Perineum, buttocks, inner thigh, groin Skin folds	If not over bony prominence then unlikely to be a pressure ulcer Equipment related – under a device/tube Skin folds (combination)
<b>Shape</b>	Diffuse differential areas/spots Kissing ulcer Anal cleft-linear	Circular wounds Regular shape
<b>Depth</b>	Superficial partial thickness skin loss Can enlarge if infection is present	Dependent on category of ulcer
<b>Necrosis</b>	No necrosis	Dependent on category of ulcer
<b>Edge</b>	Diffuse and irregular edges	Raised edge (chronicity)
<b>Colour of the wound bed</b>	Non uniform redness Pink/white surrounding skin (maceration) Peri-anal redness	Erythema Slough Necrosis Granulation tissue Epithelial tissue Dressing residue Infection
<b>Distribution</b>	Confluent or patchy	Isolated individual lesions

Adapted from Defloor et al (2005), Nix and Haugen (2010)

# THE USE OF FAECAL MANAGEMENT SYSTEMS TO COMBAT SKIN DAMAGE

Incontinence is a relatively common feature of the ageing patient, and can present as urinary, faecal or both. This article examines the different types of skin damage caused by incontinence, as well as outlining a new management tool to minimise this risk.

Incontinence-related skin lesions, sometimes referred to as incontinence-associated dermatitis, (Cooper et al, 2008), are extremely painful areas of skin damage in which the chemicals and enzymes present in urine and/or faeces are allowed to erode the surface of the skin (Beldon, 2008). In some cases the damage caused is severe and debilitating for the patient.

The skin normally provides an excellent protective barrier from physical and chemical damage (Timmons, 2006). As people age, the protective barrier of the skin changes and the loss of elasticity and appearance of wrinkles can increase the skin's susceptibility to pressure shearing and friction damage, while the simultaneous loss of sebum exposes the skin to chemical damage.

For patients who are exposed to incontinence, which may be compounded by pressure shear and friction, the skin undergoes a number of attacks that will undoubtedly result in loss of the superficial skin layers.

The presence of urine and faeces on the skin represents a significant threat to its integrity and the best way to avoid problems is to identify the at-risk patient and act to prevent any damage. Nor is this often unseen problem rare — in 2007, Houwing et al estimated the prevalence of incontinence-associated skin lesions in Dutch healthcare institutions to be 11%.

A clinical guide to incontinence-related skin damage has recently been

developed by a group of UK experts. This guide is designed to help clinicians identify the levels of moisture damage present, how to manage each level of damage and also how such damage can be prevented.

This tool will be presented below, however, in order to understand the mechanism of incontinence-related skin injury, it is helpful to first understand the function of the skin.

## FUNCTIONS OF THE SKIN

The skin plays a variety of roles in the maintenance of a person's overall health, including:

- ▶ Protection: the skin serves as the body's main protective barrier, preventing damage to internal tissues from physical trauma, ultraviolet (UV) light, temperature changes, toxins and bacteria (Butcher and White, 2005)
- ▶ Sensation: the nerve endings in the skin allow the body to detect pain as well as changes in temperature, touch and pressure
- ▶ Thermoregulation: the skin allows the body to respond to changes in temperature by constricting or dilating the blood vessels within it. The sweat glands produce sweat, which stays on the skin allowing the body to cool down. When the body is cold, the erector pili muscles contract, raising the hair and trapping warm air next to the skin
- ▶ Excretory function: the skin excretes waste products in sweat, which contains water, urea and albumin. Sebum is an oily substance excreted

**'The skin normally provides an excellent protective barrier against physical and chemical damage'**

JANICE BIANCHI  
*Medical Education Specialist at JB Med Ed Ltd; Honorary Lecturer at University of Glasgow*

KEY WORDS

- ▶ Incontinence
- ▶ Skin
- ▶ Moisture lesions
- ▶ Faecal management

- by the sebaceous glands, helping to lubricate and protect the skin
- ▶ Metabolism: when UV light is present, the skin produces vitamin D, which is required for calcium absorption
- ▶ Non-verbal communication: the skin can convey changes in mood through colour changes, such as blushing.

**The acid mantle**

The pH of the skin normally stands at between 4.4 and 5.5, which is why this protective mechanism is known as the acid mantle. This is the protective layer that is created by the presence of sebum, which creates a barrier to chemical damage and also protects against some types of bacteria. The acid mantle of the skin provides significant resistance against dehydration, as well as bacterial invasion.

**Changes in ageing skin**

There are a number of changes that occur in the skin of elderly patients, which may predispose them to skin damage:

- ▶ Skin becomes drier and sebum production slows down
- ▶ Skin can crack due to dryness, which makes it more vulnerable
- ▶ Collagen depletion leaves the skin thinner, there is a loss of elasticity and the skin becomes more fragile
- ▶ Decreased sensory perception due to reduction in nerve fibres can mean that patients may not feel pain in areas exposed to pressure.

**THE PREVALENCE OF INCONTINENCE**

As people age, the likelihood of incontinence increases — the bladder becomes more irritable, will hold less fluid and may empty less efficiently (Millard and Moore, 1996).

If these natural age-related changes are also compounded by concurrent illness, such as dementia or local surgery, then there is a likelihood that incontinence may develop (Farage et al, 2007).

The prevalence of incontinence in those aged over 65 is said to be in the region of 7% (Soffer and Hull, 2000), although this figure is likely to be an underestimate as the condition is often under-reported due to the attached stigma (Beldon, 2008).

One study in the US found that 48% of women aged over 50 had experienced urinary incontinence, 15% suffered from faecal incontinence and 9.4% had experienced both (Roberts et al, 1999). These figures suggest a significant problem, both in terms of quality of life for patients, but also in relation to costs for healthcare services. It could, therefore, be assumed that incontinence in the elderly is a significant problem, which is set to grow as the numbers of elderly patients continue to rise.

**‘The pH of the skin normally stands at between 4.4 and 5.5, which is why this protective mechanism is known as the acid mantle’**

**Faecal incontinence**

Faecal incontinence can be acute or develop into a chronic problem depending on the underlying pathology. Investigations should always be carried out to determine the exact cause of the problem. Diarrhoea could be due to infection in the bowel or some form of chronic inflammatory disease, such as Crohn’s disease or ulcerative colitis (Beldon, 2008). Overflow diarrhoea is also common in the elderly due to bowel impaction as a result of constipation. This should be investigated prior to commencing treatment for constipation, as aperients and enemas should not be given to patients with disease or infection (Beldon, 2008).

*Clostridium difficile* is an anaerobic bacteria that normally lives in the large bowel of some healthy patients and is subdued by the action of other commensal bacteria in the bowel. However, in certain situations, such as the presence of antibiotics, the numbers of commensal bacteria are reduced, which leads to the proliferation of *C.*

**References**

Bardsley A, Binks R, Kiernan M, Beldon P (2007) *Management of Faecal Incontinence: A guideline for the healthcare professional*. Continence UK, Aberdeen

Beldon P (2008) Moisture lesions: the effect of urine and faeces on the skin. *Wound Essentials* 3: 82–87

Berg RW, Buckingham KW, Stewart RL (1986) Etiologic factors in diaper dermatitis: the role of urine. *Pediatr Dermatol* 3: 102–06

Butcher M, White R (2005) The structure and functions of the skin. In: White R, ed. *Skin Care in Wound Management: Assessment, Prevention and Treatment*. Wounds UK, Aberdeen

Cooper P, Gray DG, Russell F (2008) Comparing Tena Wash Mousse with Clinisan Foam Cleanser: the results of a comparative study, *Wounds UK* 4(3): 12–21

*difficile* bacteria. The toxins released by this virulent bacteria create an inflammatory response within the bowel causing damage to the mucosa, which leads to diarrhoea (Bardsley et al, 2007).

### The effects of incontinence on the skin

Roberts et al (1999) suggest that incontinence may exist as a transient problem, possibly as a result of illness, but if allowed to progress beyond six months it can become chronic and more difficult to resolve.

The structure of the skin and the presence of the acid mantle are key to providing protection from external factors, such as urinary or faecal incontinence. In patients with urinary, faecal or combined incontinence, the skin is exposed to the harmful effects of the chemicals and toxins within the fluid, which may then begin to disturb the protective function of the skin.

Farage et al (2007) describe the effects of incontinence as chemical irritation, mechanical injury and increased susceptibility to infection.

When urine breaks down it forms ammonia, which is an alkaline substance, this increasing the pH of the skin, which results in disruption of the acid mantle. This effect can be compounded if there is also faeces present, which contains proteolytic enzymes. These enzymes are reactivated by the increase in pH on the skin, which leads to further irritation and skin breakdown (Berg, 1986).

The presence of the excessive moisture that accompanies urinary and faecal incontinence leads to the skin becoming over-hydrated or macerated, this also makes the skin more susceptible to bacterial infiltration (Beldon, 2008). Once the skin is over-hydrated it is also more prone to physical damage — twice as much friction energy is required to damage dry skin, compared with skin that has been exposed to moisture for prolonged periods (Sivamani et al, 2006).

In order to reduce skin damage, those involved in caring for patients with incontinence should be aware of the need to avoid excessive rubbing of the skin, for instance, when drying a person

with a towel after they have showered. Farage et al (2007) suggest that once the skin integrity is breached, both bacteria and fungal infection may occur. Faecal material contains a large number of bacteria that are not normally in contact with the skin, however, when present in the vicinity of a moisture lesion, are in danger of causing an infection (Whitman, 1991).

For example, *Candida albicans* is a common fungus, which thrives in the environment created within moisture lesions.

Farage et al (2007) also highlight the role of occlusion when poor quality incontinence pads or pants are used. Occlusion is likely to exacerbate the impact of incontinence on the skin's barrier function and encourage maceration.

The role of shearing and friction in the formation of moisture lesions is unclear, however, the predominance of lesions on the buttock area and the natal cleft would suggest that these sites are prone to friction, which may combine to create further tissue damage.

Once the skin has been breached, the lesion that forms may cover a large area and begin with mild erythema, which, if left untreated, may deteriorate into blistering and in time erode the skin's surface. Skin damage caused by incontinence is variously referred to as moisture lesions or incontinence-associated dermatitis.

### MOISTURE LESIONS/ INCONTINENCE- ASSOCIATED DERMATITIS

Moisture lesions and incontinence-associated dermatitis are both terms used to describe areas of skin damage caused by urinary and/or faecal incontinence. Skin damage in the perineal area and the buttocks can cause the patient significant discomfort (Farage et al, 2007).

Moisture lesions are often associated with increased age and decreased mobility, as well as the presence of incontinence.

In addition to these factors, the patient's overall health, cognitive impairment and concurrent medications may

## 'Skin damage caused by incontinence is variously referred to as moisture lesions or incontinence dermatitis'

### References

- Farage MA, Miller KW, Berardesca E, Maibach HI (2007) Incontinence in the aged: contact dermatitis and other cutaneous consequences, *Contact Dermatitis* 57: 211–17
- Houwing RH, Arends JW, Canninga-van Dijk MR, Koopman E, Haalboom JRE (2007) Is the distinction between superficial pressure ulcers and moisture lesions justifiable? A clinical-pathological study. *SKINmed* 6: 113–17
- Mathison R, Bianchi J, Bateman S, Harker J, Johnstone J (2011) Skin Integrity: A clinical guide to 'best practice'. Wounds UK Harrogate Poster Presentation. Available at: <http://www.wounds-uk.com/case-series/harrogate-poster-presentations-2011> (accessed 22 May, 2012)
- Millard RJ, Moore KH (1996) Urinary incontinence: the Cinderella subject. *Med J Austr* 165: 124–25
- Morris C (2011) Flexi-Seal faecal management system for the preventions and management of moisture lesions. *Wounds UK* 7(2): 88–93
- Roberts RO, Jacobson SJ, Reilly WT, Pemberton JH, Leiber MM, Talley NJ (1999) Prevalence of combined faecal and urinary incontinence: a community based study. *J Am Geriatr Soc* 47: 837–41

KEY WORDS

- ▶▶ Barrier films
- ▶▶ Barrier creams
- ▶▶ Incontinence pads
- ▶▶ Faecal management systems

also play a part in the development of moisture lesions/incontinence dermatitis. The pattern of skin damage is reflective of the flow of urine and faeces around the perineal area and often appears like a superficial burn.

Once superficial damage occurs, bacteria from the stool can colonise the skin and increase the inflammation present, increasing the size and depth of the lesion.

**A new clinical tool to aid assessment of moisture lesions or incontinence dermatitis**

Assessment of skin lesions is a key consideration if treatment and management protocols are to be employed effectively.

Wounds on the sacrum are often classified as pressure ulcers regardless of the cause of the lesion.

Similarly, moisture lesions may be mistaken for pressure damage due

**‘Managing the skin of incontinence patients begins with regular skin inspections. Without this, there is a risk that skin damage may occur’**

to the position and the type of tissue damage present (Morris, 2011).

It is also important for clinicians to be able to recognise when lesions may be caused by a combination of incontinence and pressure.

A group of UK clinicians have developed a tool that can be used to help identify the type of skin damage present (Mathison et al, 2011) (see *Figure 1*). Using this chart can help clinicians to identify the type and level of tissue damage present and choose the correct skin care regimen to best manage the patient.

The key differences between the types of damage are shown in *Figure 2*.

**MANAGEMENT OF INCONTINENCE AND MOISTURE LESIONS**

Managing the skin of patients with incontinence begins with regular skin inspections. Without this, there is a risk that skin damage may occur or existing skin damage may deteriorate.

Any skin inspection should include all the areas that can be affected by urine and faeces — the perineal area, the natal cleft, in between the thighs, any skin folds and the buttocks.

Using the appropriate skin cleanser is another important step in managing the skin of the incontinent patient. Cleansers with an acidic pH, which do not require rinsing off the skin, will help to maintain the acid mantle and prevent further damage (Cooper et al, 2008).

Avoiding the use of soap and water is also considered to be helpful, as soap is alkaline and can further disturb the acid mantle.

Foam cleansers are available and these assist in skin cleansing by breaking down the active components within the urine and faeces, further preventing skin damage. The pH-balanced formulation of these products also helps to maintain the slightly acidic pH of the skin (Cooper et al, 2008).

The skin should be cleansed after each episode of loose stool, using non-rinse skin cleansers and soft wipes, which will help to prevent excessive friction on the skin (Beldon, 2008; Cooper et al, 2008).

When possible, ‘air drying’ of the skin is preferable and avoids rubbing the area with towels, which can cause friction and damage to the epidermis (Farage et al, 2007).

Barrier creams can also be used to help form a protective layer on the skin between episodes of incontinence, although it is important to avoid build-up of these products and they should be rinsed off at each episode of incontinence (Beldon, 2008). Liquid barrier films, which

**References**

Sivamani RK, Wu G, Maibach H I, Gitis NV (2006) Tribological studies on skin: measurement of the coefficient of friction. In: Serup J, Jemec GBE, Grove GL (eds). *Handbook of Non-Invasive Methods and the Skin*. 2nd edition. Boca Raton, Taylor and Francis: 215–24

Soffer E, Hull T (2000) Faecal incontinence: a practical approach to evaluation and treatment. *Am J Gastroenterol* 95(8): 1873–79

Timmons JP (2006) Skin physiology and wound healing. *Wounds Essentials* 1: 8–17

Whitman DH (1991) *Intra-Abdominal Infections: Pathophysiology and Treatment*. Hoechst, Frankfurt, Germany



.....  
**‘The faecal management system has revolutionised the way clinicians care for patients with faecal incontinence, and has the potential to improve the quality of life of this patient group’**  
 .....

**Excoriation**

Erythema (redness) skin not broken. Caused by irritant fluids, urine and/or sweat. Skin is shiny and wet in appearance. Most commonly occurs in skin folds, natal cleft and peri-anal area. Likely to have irregular edges.



.....  
**Moisture Lesion**

Superficial lesions caused by irritant fluids i.e. urine, faeces and wound exudate. Found in skin folds natal cleft, and the peri-anal area — may present as diffuse spots, kissing ulcers and are likely to have irregular edges. Superficial or partial thickness skin loss is common and infection may be present. The wound may also be macerated. White colouration may be due to fungal infection and green areas could be caused by bacterial infection.



.....  
**Pressure ulcer**

Tissue damage caused by pressure, shearing and friction or a combination of these factors. Damage can be superficial or deep, often present over bony prominences. Tissue types may vary from erythema to black necrosis. Edges are more distinct than in moisture lesions.



.....  
**Combined lesions**

One or more wounds/skin lesions caused by a combination of pressure, shear, friction and moisture. May occur over bony prominences and there may also be skin damage in the perineal area, the natal cleft and between the thighs. The lesions may be partial or full thickness in appearance and may range from non-blanching erythema to necrotic and sloughy wounds. These wounds are at risk of infection so may appear green in colour depending on the types of bacteria present.



*Figure 2: Differentiating between types of skin damage.*

minimise the risk of skin damage. The faecal management system has revolutionised the way clinicians care for patients with faecal incontinence, and

.....  
 has the potential to improve the quality of life of this patient group, as well as providing significant cost savings for the NHS. **WUK**



# THE LATEST ADVANCES IN SKIN PROTECTION

## Abstract

The effects of incontinence on the skin are known to be a significant cause of moisture damage. This article looks at the different products that are available to aid clinicians in preventing faeces and urine from coming into contact with the skin in the first place.

The deleterious effects of urine and/or faeces on the skin have been recognised for many years and regular skin inspection of vulnerable individuals, together with early intervention, is recognised as reducing the risk of incontinence-associated dermatitis (IAD). The function of skin protector products is to both protect the skin and/or treat the effects of IAD, which can lead to the development of moisture lesions and/or increase the risk of pressure ulcer development (Bale, 2007).

Skin protection, particularly of the older person is likely to involve a combination of solutions, for example, a containment device to isolate urine/faeces from the skin, a skin cleansing regimen (avoiding the use of soap and water), to preserve the acid mantle of the skin and which does not cause excessive dryness, together with the application of a barrier product (Hodgekinson and Nay, 2005; Nursing and Midwifery Planning and Development Units [NMPDU], 2005; Beeckman et al, 2009; National Institute of Health and Clinical Excellence [NICE], 2007; Mathison et al, 2011).

## CONTAINMENT DEVICES

Absorbent, disposable products, such as body worn/continence pads, are made from a super-absorbent material, which forms a gel on contact with fluid. This locks any urine or watery stool away within the pad, reducing contact with the skin. Provided the individual is either independent or supervised and the pads are changed regularly, this is a common management strategy. However, continence pads do not manage odour and require changing

post-bowel movement to prevent faeces remaining in direct contact with skin.

## URINARY SHEATHS

Urinary sheaths are used to manage male incontinence and comprise a soft flexible sleeve that fits over the penis and attaches to a urinary collection system, which can be either worn on the leg or free-standing. They can be used intermittently or continuously. However, sheaths are not recommended for men with a permanently retracted penis or whose penis retracts when they bend or sit down, as the sheath will roll-off, leading to urine leakage. Neither should sheaths be used if there are any breaks in the skin or soreness, as the adhesives used to fix the sheath may exacerbate this (Pomfret, 2008).

## URINARY CATHETERS

Urinary catheterisation is an invasive procedure and, therefore, not without the risk of infection (Foxley, 2011). If the incontinence is an acute problem, which has severely damaged the perineal/perigenital skin, then a urinary catheter may be considered, but this should be removed as soon as the acute continence problem has subsided, minimising the risk of urine infection. Long-term indwelling catheters, whether urethral or suprapubic, should only be considered for individuals with a neurogenic bladder, disease or injury of the spinal cord, neuromuscular diseases or cerebrovascular accident (Wilde and Getliffe, 2008).

## FAECAL MANAGEMENT SYSTEMS

Faecal collection devices have been available

## References

- Ananthapadmanabhan KP, Moore DJ, Subramanyan K, Misra M, Meyer F (2004) Cleansing without compromise: the impact of cleansers on the skin barrier and the technology of mild cleansing. *Dermatologic Therapy* 17: 16–25
- Bale S (2007) The effect of incontinence on the skin of older people. *Continence UK* 1(3): 31–40
- Beeckman D, Schoonhoven L, Verhaeghe S, Heyneman A, Defloor T (2009) Prevention and treatment of incontinence-associate dermatitis: literature review. *J Adv Nurs* 65(6): 1141–54
- Beldon P (2006) Problems encountered managing pressure ulceration of the sacrum. *Br J Comm Nurs* 13(12 Suppl): S6–12
- Bolton C (2004) Assessment of pad clogging. *J Comm Nurs* Available at: <http://www.jcn.co.uk/journal/06-2004/product-news/690-assessment-of-pad-clogging/?s=pad+clogging> (accessed 28 June, 2012)
- Clever K, Smith G, Bowser C, Monroe K (2002) Evaluating the efficacy of a uniquely delivered skin protectant and its effect on the formation of sacral/buttock pressure ulcers. *Ostomy Wound Manage* 48(12): 60–67
- Duso S (1992) A new faecal containment device. *Ostomy Wound Manage* 38(5): 38–41

PAULINE BELDON  
Tissue Viability Nurse  
Consultant, Epsom and  
St Helier University  
Hospitals NHS Trust

## 'Patients experiencing incontinence will have their skin cleansed more often, therefore, the risk of skin damage is increased'

for many years. Duso (1992) performed a study featuring a faecal containment device, which consisted of a soft, flexible latex collection bag, similar to a stoma bag. Researchers found that the device was a good anatomical shape, adhered to the patient well via a silicone-based adhesive and was efficient in isolating faeces from local pressure ulcers, thus preventing contamination.

Similarly, Palmieri et al (2005) reported on the use of an anal bag, which insulates the anus and peri-anal area using an adhesive. The study featured 120 patients in three different groups — nursing home residents, acutely ill patients with diarrhoea, and post-surgical patients. The study found that the majority of patients found the anal bag acceptable. In addition, 80% of nurses questioned stated that they felt the anal bag was very effective in preventing pressure ulcers and that the skin surface in the peri-sacral area was well preserved by the adhesive layer of the polyurethane with no contamination or friction observed (Palmieri et al, 2005).

Faecal management systems (FMS) have proved to be effective in acute and community hospitals, especially when the patient is in a critical care setting. Since one side-effect of many antibiotics is diarrhoea, the use of a FMS can be the main intervention that prevents IAD.

FMS (for example, Flexi-Seal® [ConvaTec] and Zassi® [Hollister]) (Figures 1 and 2), comprise a soft, flexible silicone catheter that is inserted digitally into the rectum and held in place by a low-pressure balloon cuff inflated with water (Figure 3). The catheter is then attached to a closed drainage bag, providing a closed system, useful if the

patient has infectious diarrhoea for infection control purposes. This enables the monitoring of fluid balance, vital in the older person with diarrhoea, and maintain skin integrity, in addition to preserving the dignity of the patient (Beldon, 2006).

### SKIN CLEANSERS

Soap and water is not advised for skin cleansing post-incontinence — soap adversely affects the skin, removing natural oils and resulting in dryness. Soap and water may also alter the pH of the skin, changing its natural acid state and affecting the protective layer of the stratum corneum and the balance of commensal bacteria, both of which may lead to increased skin vulnerability (Ananathapadmanabhan et al, 2004).

Patients experiencing incontinence will have their skin cleansed more often, therefore, the risk of skin damage is increased. The use of a skin cleanser, specifically to cleanse and afford some protection for the skin, is advocated. Skin cleansers may come in the form of a pH-balanced, pressurised aerosol spray containing water and a surfactant to remove urine/faeces from the skin. Some versions (for example, Clinisan®, [Synergy Health]; AriPro Mousse®, [Forest Laboratories UK]; Triple Care® Cream, [Smith & Nephew]) also contain a moisturiser and barrier protection.

Skin cleansers are also available as an all-in-one product (Comfort Shield®, Sage Products). These comprise a pre-moistened washcloth that cleanses, gently removes urine and faecal matter, deodorises, moistens, and in some instances, applies a barrier film, minimising the risk of both IAD and pressure ulceration in the sacral area (Clever et al, 2002).

### References

Foxley S (2011) Driving down catheter-associated urinary tract infection rates. *Nurs Times* Available at: <http://www.nursingtimes.net/home/clinical-specialisms/continence/driving-down-catheter-associated-infection-rates/5032930.article> (accessed 28 June, 2012)

Hodgekinson B, Nay R (2005) Effectiveness of topical skin care provided in aged care facilities. *Int J Evid Based Healthcare* 3: 65–101

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

Mathison R, Bianchi J, Bateman S, Harker J, Johnstone A (2011) Skin Integrity: a clinical guide to Best Practice. Poster Presentation. Wounds UK, Harrogate.

Nair B (2003) Final report of the safety assessment of dimethicone. Cosmetic Ingredient Review Expert Panel. *Int J Toxicol* 22(2 suppl): 11–35

NICE (2007) *Clinical Guideline 49. Faecal incontinence; the management of faecal incontinence in adults*. NICE, London



Figure 1: The Flexi-Seal faecal management system.

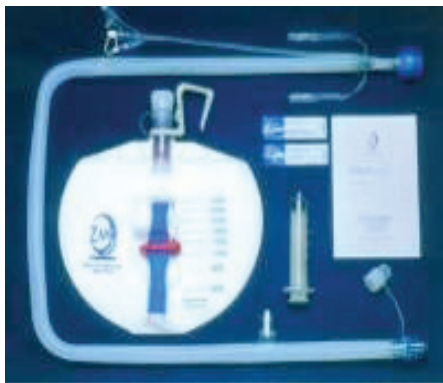


Figure 2: The Zassi faecal management system.

## SKIN PROTECTORS/ BARRIER CREAMS

Barrier creams do not necessarily provide any emollient benefit to the skin — their role is to act as a barrier, which prevents urine/faeces and moisture coming into contact with the skin. Similarly, emollients do not afford barrier protection. Consequently, if the individual has very dry skin, they may require both emollient therapy and a barrier cream (Hogarth et al, 2005).

Basic barrier creams consist of an emulsion of lipids/water with the addition of a metal oxide, such as zinc oxide. This is applied in a thin layer on the skin to repel any irritants. Over enthusiastic application of some barrier creams may reduce the effectiveness of continence pads, by clogging the absorbent layer and causing urine/ loose stool to pool against the skin, thus causing hyper-hydration and leading to possible moisture damage. However, if barrier creams are applied as per the manufacturer's instructions there is no evidence of this being a problem (Bolton, 2004).

Other basic barrier creams may consist primarily of white petroleum, which has been found to protect against maceration and afford some skin hydration. Other products contain dimethicone, which combines protection against irritants with skin hydration (Hogarth et al, 2005). Dimethicone is a common active ingredient in moisturisers because it is hypoallergenic, noncomedogenic and nonacneogenic (Nair, 2003). Dimethicone is a silicone and, therefore, water repellent, which makes it ideal for inclusion in a barrier cream. As an emollient it acts as a filler between the desquamating corneocytes on the epidermis, thus providing a confluent barrier against moisture. Dimethicone is the active

ingredient in many modern barrier creams, such as Cavilon® Durable Barrier Cream (3M) and LBF® Barrier Cream (CliniMed).

Barrier films, such as Cavilon® No-Sting Barrier Film (3M), are also available, but it should be noted that these should not be applied to broken skin.

It is important to consider that some ingredients in a barrier product may have the potential to cause an allergic reaction, therefore, the clinician should always read and take note of the constituents. In addition to the use of any skin protection product, good practice demands that the practitioner should:

- ▶▶ Assess the individual's skin daily
- ▶▶ Minimise skin exposure to moisture
- ▶▶ Cleanse the skin using a pH-balanced cleanser, avoiding use of soap and hot water, and excessive friction
- ▶▶ Consider the use of emollients to maintain skin hydration and integrity
- ▶▶ Use a skin barrier product, when indicated, to protect vulnerable skin (adapted from Wound Ostomy Continence Nurses Society, 2003).

## CONCLUSION

Skin protection involves the clinician employing good practice in more than one area — the practise of skin cleansing; use of appropriate containment devices; and, where necessary, the use of an effective barrier cream, all of which can be employed to defend the skin from the harmful effects of incontinence. **WUK**



Figure 3: Patient with faecal management system in situ, in this case inserted too late to prevent IAD.

**‘Barrier creams do not necessarily provide any emollient benefit to the skin — their role is to act as a barrier’**

## References

- NMPDU (2005) *The Treatment/management of Pressure Ulcers: Best Practice Statement*. NMPDU, Edinburgh
- Palmieri B, Benuzzi G, Bellini N. (2005) The anal bag; a modern approach to faecal incontinence management. *Ostomy Wound Manage* 51(12): 44–52
- Pomfret I (2008) The use of sheaths in male urinary incontinence. *Continence Essentials* 1: 70–75
- Wilde MH, Getliffe KG (2008) Urinary catheter care for older adults. *Ann Long-term Care* 14(8): 38–42
- Wound Ostomy and Continence Nurses Society (2003) *Guidelines for Prevention and Management of Pressure Ulcers 14*. WOCN Clinical Practice Guideline Series. WOCN Society, Glenview, IL



FlexiSeal®

**BETTER  
CARE**

**BETTER  
PROTECTION**

**BETTER  
VALUE\***

**SIMPLY BETTER SENSE™**

**Flexi-Seal® FMS is the most widely used faecal management system.<sup>1</sup>**

**It is designed to effectively contain faecal waste and helps protect the patient's skin from breakdown that can lead to the development of incontinence associated dermatitis or moisture lesions.**

**As Flexi-Seal® FMS helps contain potentially harmful bacteria it also helps reduce the spread of nosocomial infections.**

FlexiSeal®

With Flexi-Seal® FMS nurses can enhance patient comfort and dignity while spending less time managing episodes of diarrhoea and more time on patient care. By reducing complications associated with skin breakdown and cross-contamination, hospitals may save on treatment costs\*, decrease hospitalisation times and free up blocked beds.<sup>2,3</sup>

This can mean better care for patients, improved patient outcomes and considerable savings on the bottom line\*. In other words **SIMPLY BETTER SENSE™**

**To learn more about Flexi-Seal® FMS, call:**

0800 289 738 (UK)

1800 946 938 (ROI)

[www.convatec.com](http://www.convatec.com)

\*Compared to traditional faecal incontinence management

References: 1. HPIS. Q2 2011 data. Moving Annual Total (MAT) Faecal Control Category. Data on file, ConvaTec 2. Kyne L, Hamel MB, Polavaram R, Kelly CP. Health care costs and mortality associated with nosocomial diarrhea due to Clostridium difficile. CID. 2002;34:346-53. 3. Zhan C, Miller MR. Excess length of stay, charges and mortality attributable to medical injuries during hospitalization. JAMA. 2003;290(14):1868-1874.



®/™ indicates trademarks of ConvaTec Inc.  
© 2012 ConvaTec Inc. AP-011843-US