

# Case study series: Medi Derma-S Total Barrier Cream for the management and prevention of mild incontinence-associated dermatitis

## KEY WORDS

- ▶ Barrier creams
- ▶ Incontinence-associated dermatitis
- ▶ Moisture-associated skin damage

Incontinence-associated dermatitis (IAD) is a common and debilitating condition caused by urinary or faecal incontinence, and can lead to increased burden of care, loss of independence, disruption in activities and/or sleep, and reduced quality of life. Therefore, it is imperative to alleviate symptoms and manage IAD to improve patient experience. This article presents case studies where Medi Derma-S Total Barrier Cream was used for the prevention or management of mild IAD as part of a structured management plan.

The skin's integrity can become compromised with increasing age, ongoing medical conditions and environmental factors, such as irritants, mechanical injury, inflammation and moisture (Wickett and Visscher, 2006). As such, skin barrier products have been developed to protect the skin from bodily moisture (Coutts et al, 2001). In this article, the factors and strategies to protect skin integrity in incontinence-associated dermatitis (IAD) will be discussed. A case series evaluation using Medi Derma-S Total Barrier Cream for the prevention and management of mild IAD will be presented.

## IAD

IAD is a type of irritant contact dermatitis found in patients with faecal and/or urinary incontinence (Black et al, 2011). Also known as perineal dermatitis and diaper rash, IAD can affect the perineum, buttocks, groin folds, labia majora in women and scrotum in men (Beeckman et al, 2015). Ammonia from urine and enzymes from stool can disrupt the acid mantle of the skin and cause the skin to break down (Rees and Pagnamenta, 2009), which makes the skin more susceptible to maceration, friction damage (White and Cutting, 2003) and secondary infections (Beeckman et al, 2015). IAD can be a very painful and debilitating condition, and can result in an increased burden of care, loss of independence, disruption in activities and/or sleep, and reduced quality of life, which worsen with frequency and quantity of soiling (Bartlett et al, 2009; Minassian et al 2013).

It is difficult to estimate the prevalence and

frequency of IAD, so current estimates are broad (Beeckman et al, 2015; *Box 1*). IAD is more common in individuals with faecal incontinence or mixed urinary and faecal incontinence (Voegeli, 2012) than with urinary incontinence; IAD develops in one-third of those who are faecally incontinent (Nix, 2002), and can develop between 6 and 42 days (median, 13 days) after the onset of faecal incontinence (Bliss et al, 2006).

IAD can be difficult, time-consuming and expensive to treat (Doughty et al, 2012). However, following a structured skin care regimen may maintain or improve patients' skin condition and significantly reduce the time and resources used in delivering nursing care (Bale et al, 2004), highlighting the importance of rapid and standardised care practices for IAD.

## IAD treatment strategies

Early identification of IAD is essential to avoid further skin deterioration and poor patient outcomes. A standard structured regimen for IAD would include regular skin inspection, especially of areas susceptible to IAD (Bianchi, 2013); use of appropriate skin cleansers with

### Box 1: IAD prevalence and incidence (Beeckman et al, 2015).

- Prevalence (i.e. proportion of patients with IAD at a defined point in time) of 5.6%–50%
- Incidence (i.e. proportion of patients who develop IAD over time) of 3.4%–25%

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## Application

- "Pea to palm". Use a pea sized amount of cream to cover an area approximately the size of your palm.
- Using a gloved finger tip, apply evenly to the treatment area using a circular motion.

**Figure 1. 'Pea to Palm' application technique of Medi Derma-S Total Barrier Cream**

an acidic pH (Cooper et al, 2008); air drying of the skin rather than rubbing and friction during drying (Farage et al, 2007); use of barrier creams and films that form a layer that protect the skin during episodes of incontinence (Beldon, 2008); and use of incontinence pads or catheters that draw moisture away from the skin (Farage et al, 2007). Faecal management systems may also be considered (Bianchi, 2013).

## Skin protectants: Barrier creams

A key part of the IAD management strategy is to select an appropriate skin protectant that can form a barrier between the skin and any moisture or irritant. Barrier products (creams or films) repel moisture and subsequently protect the skin from excess moisture. A barrier product should be durable, easy to apply, non-sting and gentle to the skin. It should not interfere with the absorption or function of incontinence management products, and should have a rapid absorption and drying time so that it does not impact on the time required to administer the skin care regimen and additional treatments. An appropriate barrier cream should also minimise the number of products, resources and time required to complete a comprehensive skin care regimen so that it is cost-effective (Beeckman et al, 2015).

## MEDI DERMA-S TOTAL BARRIER CREAM

Medi Derma-S Total Barrier Cream (Medicareplus International) is a hypoallergenic silicone-containing cream, suitable for adults and children, which helps to protect skin against moisture-associated skin damage (MASD). Medi Derma-S Total Barrier Cream can be applied to intact or damaged skin, forming a protective, transparent, waterproof barrier on application which enables continued visualisation of skin condition and does not interfere with the subsequent adhesion of dressings, ostomy pouches or other adhesive devices. Only a small amount needs to be applied to the affected area of skin ('pea to palm' technique; Figure 1), forming a durable barrier that lasts for up to 3 washes (Dykes and Bradbury, 2017). The quick-drying formulation has been demonstrated to not block the absorbency of incontinence pads (Dykes and Bradbury, 2016) and does not need to be removed between applications, reducing risk of

friction damage and further skin breakdown. Medi Derma-S Total Barrier Cream is available as 2g sachets and 28g and 90g tubes.

## CASE STUDY SERIES

The key objective of this case series was to evaluate the clinical performance and outcomes of Medi Derma-S Total Barrier Cream for the prevention or management of mild IAD, and to evaluate the acceptability of the product by clinical staff and patients. All clinicians taking part in the evaluation were given guidance on the recommendations for use, in accordance with the instructions for use for prevention or management of mild IAD. The current recommendation is for the Medi Derma-S Total Barrier Cream to be applied after every third episode of incontinence or twice a day. However, clinicians were encouraged to use their own judgement depending on individual patient condition. The cream was used for up to 2 weeks and changes to skin condition and patient comfort were monitored. Clinicians also commented on the cream's features, such as absorption, application and durability.

During the course of these evaluations, clinicians also came across some interesting cases of moisture damage not due to incontinence where it was felt the use of Medi Derma-S Total Barrier Cream would be beneficial. These cases are also included to illustrate extended use of Medi Derma-S Total Barrier Cream beyond IAD.

## Case 1. Female patient with ongoing faecal incontinence (Luxmi Mohamud)

This is a 68-year-old female with a history of type 2 diabetes, obesity and diverticular disease, leading to faecal incontinence and IAD affecting both buttocks. She has received an above-the-knee amputation of the left leg and is cared for at home and requires hoisting. The buttocks' skin was painful (4 out of 10 on a VAS scale) and excoriated with erythema present and occasional bleeding (*Figure 2a*); the skin was also very itchy (8 out of 10).

Previous products used for skin barrier protection included an antiseptic healing cream and a non-rinse, fragrance-free barrier cream, which was initially effective at protecting the skin, but then caused the patient's skin to become itchy and irritable.



**Figure 2. Case 1 (a) Initial assessment. (b) Six days of Medi Derma-S Total Barrier Cream. (c,d) Two months after initial use of Medi Derma-S Total Barrier Cream.**

Carers visited the patient four times a day for toileting and activities of daily living (ADLs) and were advised at each visit and episode of incontinence to wash the skin with warm water and a gentle emollient, and to apply the Medi Derma-S Total Barrier Cream to both buttocks to repair the skin damage and protect the surrounding skin. Over the next few days, the condition of the skin improved with no itchiness or irritation, and there was a reduction in pain (*Figure 2b*). After 2 weeks of this new regimen, the skin was soft and fully intact.

Medi Derma-S Total Barrier Cream had been easy to use by all clinical staff and the patient's skin was not dry or itchy. The patient was highly satisfied with the treatment results as the mild IAD was resolved and she no longer had sleepless, uncomfortable nights, leading to a better quality of life. The decision was taken to continue use of Medi Derma-S Total Barrier Cream for the prevention of IAD for the next two months (*Figures 2c, 2d*); the patient was discharged from the nurse's caseload and continued to be cared for by carers.

#### **Case 2. Female patient with painful mild IAD in the sacral area (Rosie Callaghan)**

This is a 78-year-old female with chronic mild IAD of the sacral, buttock and upper thigh area, which she finds very distressing and painful (8 out of 10 on a VAS scale). The incontinence is managed with a catheter and regular toileting, and she has poor mobility and a very high pressure ulcer risk score (Waterlow: 38).

The sacral skin was inflamed, hot to touch and clammy. Medi Derma-S Total Barrier Cream was chosen to protect the affected area from further

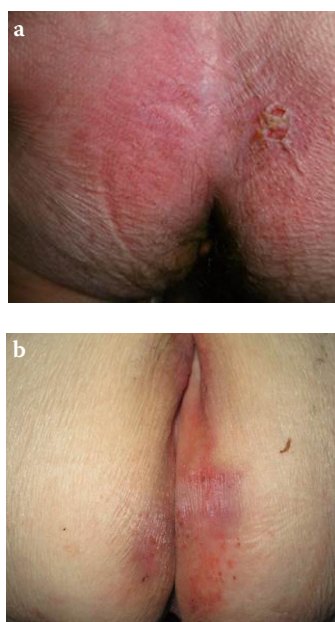
damage, as previous products containing zinc oxide and designed for the treatment of nappy rash had proved ineffective. The patient was advised to wash with a sodium lauryl sulfate (SLS) -free 2-in-1 emollient and cleanser – not soap – and pat herself dry rather than rub, and then to apply Medi Derma-S Total Barrier Cream as needed after every third episode of incontinence or twice a day, as per manufacturer's guidelines. The clinician noted that only a small amount of the cream was needed to cover the affected area.

The next day, after one application and three washes, the condition of the skin had already improved and the patient's pain had decreased (3 out of 10 on a VAS scale). Over the next 3 days, pain continued to reduce while Medi Derma-S Total Barrier Cream was used on the affected area. After 2 weeks of using Medi Derma-S Total Barrier Cream, the affected skin was now smoother and no longer inflamed. The patient's underlying condition had not changed, but there was an improvement in skin health, the pressure ulcer risk had reduced slightly and she was more comfortable.

#### **Case 3. Mild IAD and skin loss to the natal cleft and buttocks (Rosie Callaghan)**

This is a 94-year-old female nursing home resident with a history of congestive cardiac failure, Stage 3 kidney failure, and urinary incontinence, which has led to mild IAD of the natal cleft and buttocks.

Medi Derma-S Total Barrier Cream was chosen for the prevention of further skin damage and to improve skin condition (*Figure 3a*). The affected area had low levels of moisture and the

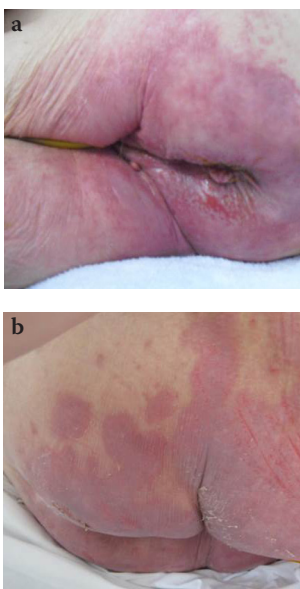


**Figure 3. Case 3 (a) Initial assessment. (b) End of week 2.**





**Figure 4.** Case 4 (a) Review 1. (b) Final review.



**Figure 5.** Case 5 (a) Initial assessment. (b) Final review.

patient measured pain at 2 out of 10 on a VAS scale and itchiness at 6 out of 10.

An application guide and chart was provided to the patient in order to make sure cream was applied appropriately. The patient was encouraged to use a pH-friendly soap cleanser and to wash after every episode of incontinence.

There was an immediate reduction in pain and itchiness of the affected skin after 24 hours and two applications of the cream. As a result, Medi Derma-S Total Barrier Cream was continued for the next 2 weeks as it was easy to apply, absorbed into the skin quickly, and left the skin feeling soft and smooth with no signs of stickiness (*Figure 3b*). During this time, the patient became more settled and happier.

## **Case 4: Mild IAD due to frequent urinary tract infections (Rosie Callaghan)**

This is a 74-year-old female nursing home resident, with a history of occasional faecal incontinence and frequent daily and nightly urinary incontinence. A urinary catheterisation was now in place. She had mild IAD of the sacral area, which extended down the inner buttocks as a result of frequent urinary tract infections (*Figure 4a*). The skin was excoriated, inflamed and tender causing the patient to find day to day tasks difficult and, although moisture levels were low, the skin was painful (5 out of 10 on VAS scale).

Medi Derma-S Total Barrier Cream was selected to avoid further skin damage. It was very easy to apply compared to previous products containing zinc oxide designed for nappy rash, as it was not thick on application. It was quickly absorbed into the skin and had a very good drying time. The patient was instructed to wash the sacral area using a simple SLS-free 2-in-1 emollient and cleanser and to pat dry only, applying Medi Derma-S Total Barrier Cream every 72 hours using the application charts for guidance.

After using Medi Derma-S Total Barrier Cream for 2 weeks, the skin was less inflamed or painful (*Figure 4b*). During an episode of faecal incontinence, the patient did not experience any burning sensation, which had not been the case when using previous products. The wash

durability of Medi Derma-S Total Barrier Cream was excellent, with the patient able to wash and still have soft skin with no residual stickiness. The small amount of Medi Derma-S Total Barrier Cream required to cover the affected area was far less than the previous product used.

## **Case 5: IAD for a nursing home resident with poor mobility (Rosie Callaghan)**

This 84-year-old female nursing home resident had diabetes and leg ulcers causing reduced mobility (only able to stand). She also had urinary and faecal incontinence with incontinence episodes occurring three times a day. As a result, she had developed IAD on the buttocks and natal cleft. The skin was very inflamed (*Figure 5a*), with a small area of excoriated skin present, but was not painful. Moisture levels were low and previous skin barrier protection products (including a nappy rash cream designed for babies) proved ineffective at improving the skin condition.

Medi Derma-S Total Barrier Cream was selected to treat the IAD and prevent further skin deterioration. The patient was instructed to wash using a simple unperfumed soap cleanser (due to patient preference), to pat the skin dry and to apply Medi Derma-S Total Barrier Cream daily using the guidance charts provided.

After 1 week using Medi Derma-S Total Barrier Cream, the skin condition had improved and by the second week the skin was less inflamed and no longer excoriated (*Figure 5b*). The clinician reported that the wash durability of the cream was excellent; three washes occurred before reapplication of the cream was required. The patient also commented that there was no tackiness or residue on her skin, and her clothes no longer stuck to her body.

The clinician noted that Medi Derma-S Total Barrier Cream had been successful in protecting the skin from breakdown during episodes of incontinence so should be used to protect healthy skin.

## **Case 6: Male patient with history of IAD (Beki Small)**

This is a 79-year-old male with dementia, and a history of gout and atrial fibrillation. The

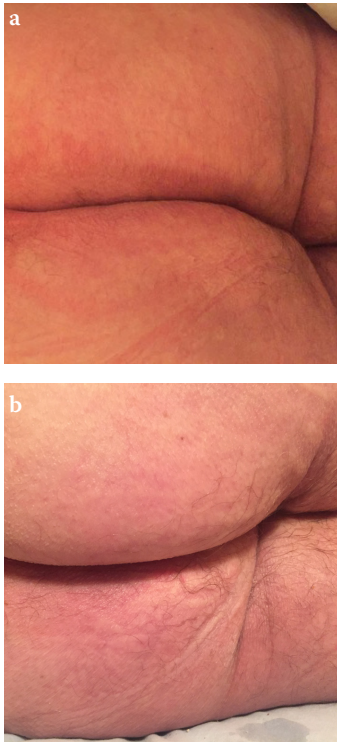


Figure 6. Case 6 (a) Initial assessment. (b) Final review.

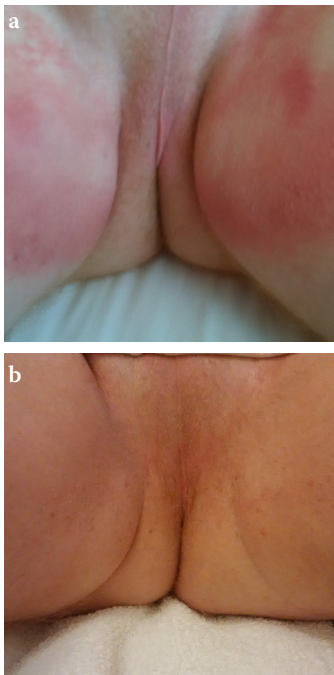


Figure 7. Case 7 (a) Initial assessment. (b) Final review.

patient was susceptible to reoccurring IAD due to frequent episodes of urinary incontinence 4–5 times a day, and faecal incontinence approximately twice a day. The patient's skin was highly sensitive to his own urine, which created inflammation in his groin, scrotum and sacrum. The patient wore incontinence pads 24 hours a day, which were checked at least every 2 hours. The condition of the sacral skin was slightly inflamed (*Figure 6a*) and itchy (3 out of 10), but the skin was not painful.

Application of Medi Derma-S Total Barrier Cream was prescribed twice a day to protect skin integrity and improve the skin condition.

After 1 week of using Medi Derma-S Total Barrier Cream, the skin had no signs of IAD (*Figure 6b*), and the skin was less itchy (2 out of 10). Medi Derma-S Total Barrier Cream was easy to apply, comfortable for the patient to use, and had a faster drying time than the previous barrier cream used, which had required twice daily applications and caused irritation to the patient's skin.

#### Case 7: Use of Medi Derma-S Total Barrier Cream on mild IAD (Sharon Hunt)

A 58-year-old male with type 2 diabetes presented to the community GP practice with bilateral mild moisture lesions to the inner thigh, groin and scrotum (*Figure 7a*). He had a urinary tract infection which had led to urinary incontinence/leakage three times a day. He had a BMI of 38kg/m<sup>2</sup> and was a heavy smoker. The inflamed area was painful, measuring 9 out of 10 on a VAS scale. Medi Derma-S Total Barrier Cream was selected to provide a barrier between the skin and the leaking urine, and to provide skin protection from friction between the thighs. The patient was instructed to cleanse skin with a simple cleansing wash, and apply Medi Derma-S Total Barrier Cream twice a day.

After 2 weeks, the skin on the inner thighs had visibly improved and was now intact, healthy, soft and supple (*Figure 7b*). The patient reported that there was no pain or itchiness in the area, and that the Medi Derma-S Total Barrier Cream was easy and painless to apply, and long-lasting on his skin. The clinician was impressed with the quick drying time of Medi Derma-S Total Barrier

Cream, and would use it again.

#### Case 8: Use of Medi Derma-S Total Barrier Cream to manage moisture damage caused by excessive sweating and fever (Sharon Hunt)

A 51-year-old female patient had moisture damage on the left upper inner thigh from excessive perspiration from a fever. The patient also had an inguinal hernia of the groin and labia majora. The skin was very inflamed and painful (10 out of 10 on a VAS scale) and the patient reported difficulty and discomfort when moving as there was a tight "pulling" pain.

As no products had been used so far on the skin apart from shower gel to cleanse, Medi Derma-S Total Barrier Cream was selected to protect the skin from moisture to the upper thigh. The cream was applied twice daily after cleansing the skin with a non-rinse moisturising cleanser.

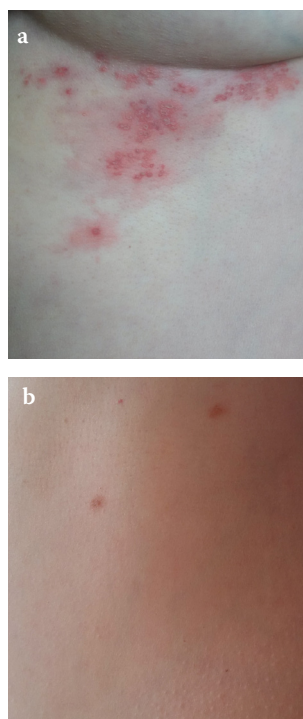
After 2 weeks following this structured management regimen, the skin was fully intact and pain free. The new regimen led to a rapid improvement in the skin condition and quality of life for the patient as she was no longer in discomfort.

#### Case 9: Use of Medi Derma-S Total Barrier Cream for moisture lesions (Sharon Hunt)

A 62-year-old female presented with moisture lesions related to excessive perspiration to the left upper torso and breast related to a 3-week period of bed rest post-chemotherapy (*Figure 8a*). The lesions created a painful and tight sensation, with the skin condition was described as dry and flaky, with a rash-like appearance. The affected tissue was fragile with minor epidermal damage, and extremely painful and itchy.

The skin had been treated with a different barrier cream for 3 weeks with minor improvement in skin condition and symptoms. Medi Derma-S Total Barrier Cream was selected to protect and improve the skin following cleansing with a non-rinse moisturising cleanser. The cream was applied daily and the patient was also instructed to wear loose cotton clothing.

After 2 weeks, the skin had healed completely (*Figure 8b*). Medi Derma-S Total Barrier Cream had been simple to use, providing pain-free application and protection for the skin. Medi



**Figure 8. Case 9 (a) Initial review. (b) Final review**

Derma-S Total Barrier Cream, compared to previous products, was faster in the speed of absorption and drying time, and also seemed to promote quicker restoration of healthy skin. The patient chose to continue using the cream during the rest of the chemotherapy to prevent recurrence of the moisture-associated skin damage.

## SUMMARY OF CASE SERIES EVALUATION

In this case series, the clinicians, patients and carers were pleased with the results of using Medi Derma-S Total Barrier Cream. Despite the patients' skin being at high-risk of damage and in many cases in the presence of IAD, high-risk status, there were encouraging improvements in skin condition, in all the cases observed. The patients involved in the evaluation reported a reduction in pain and discomfort of the affected area. Clinicians commented that Medi Derma-S Total Barrier Cream was easy to use and apply, and had a quick absorption and drying time with no stickiness or residue.

## CONCLUSION

Many patients are vulnerable to skin damage and loss of skin integrity, and with the growing ageing population, the issue is likely to increase. Early intervention of structured prevention strategies is essential to protect intact skin at-risk of moisture-associated damage, as well as skin with mild IAD. Barrier creams, such as Medi Derma-S Total Barrier Cream, are an important element of the clinicians' toolkit for the protection of skin from moisture.

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## REFERENCES

- Bale S, Tebble N, Jones V, Price P (2004) The benefits of implementing a new skin care protocol in nursing homes. *J Tissue Viability* 14(2): 44-50
- Bartlett L, Nowak M, Ho YH (2009) Impact of fecal incontinence on quality of life. *World J Gastroenterol* 15(26):3276-82
- Beeckman D et al (2015) Proceedings of the Global IAD Expert Panel. Incontinence-associated dermatitis: moving prevention forward. Wounds International. Available to download from [www.woundsinternational.com](http://www.woundsinternational.com)
- Beldon P (2008) Moisture lesions: the effect of urine and faeces on the skin. *Wound Essentials* 3:82-7
- Bianchi J, Beldon P, Callaghan R, Stephen-Haynes J (2013) Barrier products: Effective use of a barrier cream and film. *Wounds UK* 9(1): 82-8
- Black JM, Gray M, Bliss DZ et al (2011) MASD Part 2: Incontinence-

- associated dermatitis and intertriginous dermatitis. *J WOCN* 38(4): 359-70
- Bliss DZ, Zehrer C, Savik K, Thayer D, Smith G (2006) Incontinence associated skin damage in nursing home residents: a secondary analysis of a prospective multicenter study. *Ostomy Wound Manage* 52(12):46-55
- 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
- Coutts P, Queen D, Sibbald RG (2001) Peri-wound Skin Protection: A comparison of a new skin barrier vs. traditional therapies in wound management. Poster presentation. CAWC, London
- Doughty D, Junkin J, Kurz P et al (2012) Incontinence-associated dermatitis. Consensus statements, evidence-based guidelines for prevention and treatment, current challenges. *J WOCN* 39(3): 303-15
- Dykes P, Bradbury S (2016) Incontinence pad absorption and skin barrier creams: a non-patient study. *BJN* 25(22): 1244-8
- Dykes P, Bradbury S (2017) Comparing the effectiveness and wash-off resistance of skin barrier creams: a healthy volunteer study. *J Wound Care* 26(9): 552-7
- Farage MA, Miller KW, Berardesca E, Maibach HI (2007) Incontinence in the aged: contact dermatitis and other cutaneous consequences. *Contact Dermatitis* 57:211-17
- Minassian V, Devore E, Hagan K et al (2013) Severity of urinary incontinence and effect on quality of life in women, by incontinence type. *Obstet Gynecol* 121(5): 1083-90
- Nix DH (2002) Validity and reliability of the Perineal Assessment Tool. *Ostomy Wound Manage* 48(2):43-9
- Rees J, Pagnamenta F (2009) Best practice guidelines for the prevention and management of incontinence-associated dermatitis. *Nursing Times* 105(36):24-6
- Voegeli D (2012) Moisture-associated skin damage: aetiology, prevention and treatment. *Br J Nurs* 21(9):517-21
- White RJ, Cutting KD (2003) Interventions to avoid maceration of the skin and wound bed. *Br J Nurs* 12(20): 1186-203
- Wickett RR, Visscher MO (2006) Structure and function of the epidermal barrier. *Am J Infect Control* 34(10 suppl):S98-S110

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