Appropriate selection and use of barrier creams and films

Maintaining skin integrity is vital in cases of incontinence or highly exuding wounds. For patients whose skin is regularly exposed to irritant fluids such as wound exudate, urine or faeces, protection is required and a barrier product may be used. This article outlines the main considerations when using barrier creams and films.

"The main function of a barrier cream is as a barrier against irritation from body fluids."

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Maintaining healthy skin can be seen as a key objective of care in many healthcare settings across all age ranges. Skin is at risk of damage from dehydration (either systemic or local dehydration), excess fluids (leakage from wounds, urine or faeces from incontinence, or sweat), and from physical forces, such as pressure, shear and friction.

As a person gets older, the skin is also challenged because aging affects the structure and function of the skin, making it more susceptible to physical forces, dryness, fungal infections and dermatitis (Lichterfeld et al, 2015). Older people's skin is also prone to pruritus, which can lead to physical trauma from scratching itchy areas.

Healthy skin is clean, dry and well hydrated. Keeping skin healthy involves a regimen of cleansing, drying and the application of skin care products, such as creams and lotions; these products may be moisturisers or barriers (Dowsett and Allen, 2013).

Assessment

As with all other aspects of patient care, assessment is the key element. It is important to determine the condition of the skin and, where possible, address systemic factors that may be impacting on the skin quality, such as fluid intake and medications that thin the skin (e.g. steroids).

It is important to correctly identify the damage to the skin in order to correctly manage the presenting symptoms.

Several tools exist for assessing damage caused by incontinence-associated dermatitis. Dowsett et al (2015) recently proposed a tool for the assessment of periwound skin – the triangle of assessment. This tool assesses six key forms of damage that may occur:

- Maceration
- Excoriation
- Dryness
- Hyperkeratosis
- Callus
- Eczema.

Moisturisers and barriers

Key components of management include the use of a range of creams and lotions to rehydrate and protect the skin.

Moisturisers assist in the hydration of the skin and are part of a group

of products generically known as emollients. Soap substitutes and bath oils are also included in this group. The use of emollients helps to rehydrate and plump the skin, dealing with dryness and increasing the ability to resist damage from external forces, such as friction and shear.

Moisturisers can also offer a protective effect against exposure to irritants by closing the gaps between cells and therefore preventing ingress (Williams et al, 2010). However, moisturisers do not form a barrier between the skin and irritants. Therefore, for some patients more protection will be required, particularly where the skin is regularly exposed to irritant fluids, such as wound exudate, urine or faeces. In these instances, a barrier cream may be used.

These products commonly contain zinc oxide, petrolatum, dimethicone or other skin sealants (Lichterfeld, et al, 2015). Dimethicone is a common active ingredient because it is hypoallergenic, non-comedogenic and non-acnegenic — relatively unlikely to cause an allergic reaction, blackheads by blocking the pores and an exacerbation of acne, respectively (Beldon, 2012).

The main function of a barrier cream is as a barrier against irritation from body fluids and, therefore, the four most common reasons they are used are to protect against:

- Incontinence-associated dermatitis
- Intertriginous (skin folds) moisture-associated dermatitis.
- Periwound moisture-associated dermatitis.
- Peristomal moisture-associated dermatitis (Dowsett and Allen, 2013).

Barrier products do not replace emollient therapy but are used in addition to it. Barrier products are available in two main presentations, creams or films.

Table 1. Traditional versus liquid film-based barrier products (Bianchi and Hardy, 2012).

Type of barrier product	Advantages	Disadvantages
Acrylate film dressing	Results in a transparent acrylate surface that resists removal Low incidence of reactions	Some skin sealants may evaporate and dry out
Ointments: petrolatum/ zinc oxide	Relatively cheap and easy to apply	Petrolatum liquefies with heat Zinc oxide ointment does not allow visualisation of underlying wound margin Ointment vehicle may interfere with the action of silver ionisation Can impede dressing or tape adhesion May interfere with absorption capability of continence products.

Barrier films

Barrier films are dispensed via sprays, wipes and foam applicators. They contain silicone polymers, such as dimethicone, and create a dry, water-repellent, transparent barrier. Film products can be applied to broken or irritated skin without stinging. They dry quickly to provide a waterproof protective barrier (All Wales Tissue Viability Nurses Forum and All Wales Continence Forum [AWTVNF], 2014).

Barrier creams and ointments

Barrier creams and ointments are available in a sachet or tube, depending on the quantity required. Barrier creams are water-based and contain dimethicone, lanolin or zinc oxide. They may be breathable or occlusive (sealing), and can moisturise, as well as repel fluid and keep air out (AWTVNF, 2014).

Barrier creams should be applied in a thin layer and need to be removed at each episode of skin care to avoid build-up, which can result in skin damage.

Ointments are thicker than creams and while they are more occlusive, they are harder to apply. Care should be taken when applying ointments to fragile skin so as to not drag the skin.

Choosing a product

Creams can be applied to dry, intact skin, while sprays, wipes or applicators can be used on broken, as well as intact, skin.

According to Woo et al (2009), each formulation has distinct advantages and disadvantages (*Table 1*).

Apply barrier products following the manufacturers' instructions.

Depending on the product, they can provide up to 72 hours of protection.

In more severe incontinence or excess leakage of exudate or stomal contents, the cream is likely to be washed off and should be reapplied more frequently

Whichever formulation is applied, it must be allowed to dry out before redressing the patient and covering the area to ensure the product does not stick the skin to the clothing or dressings.

Applying multiple layers of barrier products should be avoided. It will make the area uncomfortable for the patient and cracking of the product can occur, which will allow moisture to penetrate. Over-application alongside inadequate cleansing of the area may mask the condition of the skin, hampering proper assessment of changes in the skin condition.

When selecting a barrier product, it is essential to consider its impact on continence products, such as pads and underpants. Some barrier products can coat the pad's surface, inhibiting the transfer of fluid into the pad and reducing absorbency. This increases the risk of fluid sitting against the patient's skin, resulting in hyperhydration and skin breakdown (Beldon, 2012). Barrier products containing dimethicone do not cause absorption problems with continence pads (AWTVNF, 2014).

The clinician should also check the list of ingredients when selecting a product. Products containing chlorhexidine gluconate, alcohol or fragrance should be avoided, because these ingredients can be absorbed by damaged skin (Dowsett and Allen, 2013). The consquence of which is an increase in the risk of sensitisation/ patient reaction to the product.

Product selection can be challenging because many products are available and the labelling may make it difficult to determine performance (Lichterfeld et al, 2015). There is often little understanding of the role of the chemical components of the products among patients and occasionally over-reliance on a single ingredient. It is the cumulative effect that should be considered. While any single ingredient may cause a skin reaction, the combined effect of ingredients can be significantly greater and there can also be interactions between the ingredients.

On their own, barrier creams and sprays provide a barrier between the skin and irritants. They do not moisturise to any significant extent and do not protect against pressure damage.

Good guidance algorithms for skin care exist (for example, Lichterfeld et al 2015), but they need to be used consistently in practice and all elements of skin care — including assessment, cleansing and protection — must be addressed in a consistent way.

The key to selecting a good skin care product, particularly a barrier, is to be clear about what the product needs to achieve and then select the product with the fewest ingredients that meets those criteria. The more ingredients in a product, the more likely it is that there are ingredients that will be sensitisers and potentially create more problems than they prevent. WE

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