

## What is moisture-associated skin damage (MASD)?

Moisture-associated skin damage (MASD) is an umbrella term that describes damage caused to the epidermis by prolonged exposure to moisture (Gray et al, 2011; Young, 2017).

### Sources of moisture that can result in MASD include:

- Urine
- Faeces
- Perspiration
- Wound exudate
- Ostomy effluent (Gray et al, 2011).

### MASD entities

MASD can be divided into four clinical entities:

1

Incontinence-associated dermatitis

2

Intertriginous dermatitis

3

Peri-wound skin damage

4

Peri-stomal wound damage

### REMEMBER:

For MASD to be diagnosed, there must be a source of moisture that correlates with the area of damaged skin.

## Incontinence-associated dermatitis (IAD):

**Incontinence-associated dermatitis (IAD) is a form of contact dermatitis that results from a chemical irritation of the skin caused by prolonged exposure to urine and/or stool (Young, 2017).**

**Although urinary incontinence is a cause of IAD, IAD most commonly occurs in patients with faecal or mixed faecal and urinary incontinence (Voegeli, 2012).**

**Urine is alkaline and on prolonged contact can disrupt the skin's acidic pH to alkaline (pH>7).**

**This change in pH makes the skin more hospitable to virulent micro-organisms, while skin breakdown provides an entry point for infection.**

**An increase in alkalinity can also promote activity of faecal enzymes (if faecal incontinence is also present), which further erodes the skin surface.**

### Risk factors:

- Type of incontinence:
  - Faecal incontinence (diarrhoea/formed stool)
  - Double incontinence (faecal and urinary)
  - Urinary incontinence
- Frequent episodes of incontinence (especially faecal).
- Use of occlusive containment products.
- Poor skin condition (e.g. due to ageing/steroid use/diabetes).
- Compromised mobility.
- Diminished cognitive awareness.
- Inability to perform personal hygiene.
- Pain
- Raised body temperature (pyrexia).
- Medications (antibiotics, immunosuppressants).
- Poor nutritional status.
- Critical illness (Beeckman et al, 2015).

**Although increased age is associated with a higher prevalence of incontinence, age does not appear to be an individual risk factor for IAD.**

### **Preventing and managing IAD**

Global skin care experts identified two key aspects to preventing and managing IAD:

- Manage incontinence.
- Implement a structured skin care regimen (Beeckman, 2015).

### **REMEMBER:**

**Prevention of IAD should be aimed at all people with incontinence with the aim of promoting positive outcomes and avoidance of patient injury and harm.**



## Intertriginous dermatitis:

**Intertriginous dermatitis (ITD), also known as intertrigo, results when moisture, usually perspiration, becomes trapped between the skin folds (Sibbald et al, 2013).**

**Skin folds are commonly located on the legs, buttocks, breasts, arms, toes, and neck folds.**

**This damage presents as a mirror-image on either side of the skin fold, and can lead to inflammation and skin breakdown if not managed appropriately.**

**Once skin integrity is compromised, this increases the risk of infection, with fungal infections such as candidiasis commonly occurring (Sibbald et al, 2013; Zulkowski, 2017).**

### Management:

Goals of intertrigo management are to control moisture, minimise friction and treat infection if present.

- Examine skin folds, including the base, for additional or worsening erythema, and keep clean and dry. Irritated skin should be patted dry rather than rubbed or wiped (Sibbald et al, 2013).
- Cleanse the area with a pH-balanced cleanser to maintain the skin's acid pH and prevent further irritation. Avoid using talcum powder, gauze or towels between the folds, as they can trap moisture and increase friction to the skin (Voegeli, 2013).
- If possible, improve air flow to the affected area. Protect the affected area from further breakdown/maceration with a barrier film that can protect the skin not only from moisture, but also friction.
- Products are available to place between the skin folds that absorb moisture and reduce friction (Zulkowski, 2017). Avoid those containing alcohol, perfume or chlorhexidine gluconate, as they can further irritate damaged skin.

### REMEMBER:

**All risk factors for intertrigo are exacerbated by hot and humid conditions.**

## Peri-wound skin damage:

**Peri-wound skin damage occurs when wound fluid or exudate comes into prolonged contact with the skin surrounding the wound. The production of exudate is a normal stage of wound healing, bringing nutrients and cells essential for tissue repair to the wound bed.**

**However, if exudate comes into prolonged contact with the skin, e.g. via a saturated dressing, it can result in MASD, which leads to macerated or excoriated tissue (Woo et al, 2017; Young, 2017; Zulkowski, 2017).**

**Maceration compromises the skin's barrier function and puts the epidermis at risk of damage from friction. It can also prevent migration of skin cells across the wound surface, resulting in delayed healing.**

**Excoriation results in red skin that is painful and can be damaged further by the use of adhesive products.**

## Management:

Management of peri-wound skin damage should aim to direct excess moisture away from the wound bed and surrounding skin, while addressing the underlying cause of excess exudate production, e.g. biofilm or infection (Dowsett and Allen, 2013; Sibbald et al, 2013).

- Select a dressing according to local wound conditions, including exudate volume and wound position. Ensure that the dressing covers the damaged skin and does not adhere to it, and that it is changed as soon as it becomes saturated. Leakage increases the likelihood of MASD occurring.
- Protect the peri-wound area from further damage using a no-sting barrier film. An acrylate terpolymer barrier film has been shown in numerous clinical studies to improve peri-wound management. In particular, for venous leg ulcer management where the use of the barrier film can lead to significantly greater wound size reduction and facilitate the healing of larger wounds without increasing costs (Guest et al, 2012).
- Follow wound bed preparation to optimise healing. Reassess the wound bed and surrounding skin at each dressing change, using findings to guide treatment (Dowsett and Allen, 2013; Young, 2017).
- Exudate production should diminish as healing progresses and as the underlying cause(s) are addressed.



## Peri-stomal skin damage:

**Peri-stomal MASD is caused by poor appliance fit or an awkward stoma site, which allows stool or urine to collect under the seal, a common problem for ostomy patients (Tam et al, 2014). Inflammation and erosion of the skin can extend outward in a 10cm radius from the stoma site (Woo et al, 2017; Zulkowski, 2017).**

**Once peri-stomal skin is damaged, it can become more difficult to gain good appliance adherence to damaged skin, resulting in further leakage and causing a vicious cycle of skin damage.**

**MASD can also occur around other ostomy sites, for example, percutaneous gastrostomy tubes can leak digestive enzymes, while tracheostomies can have skin damage associated with sweat or saliva. Peri-stomal MASD can also occur from perspiration or drainage from surrounding wounds (Gray et al, 2013).**

## Management:

The ostomy skin tool helps to assess peri-stomal skin in two ways; by obtaining a score based on skin assessment and a guided patient interview to determine the cause of the MASD (Page, 2009).

Aims of management of peri-stomal skin damage are to:

- Protect the peri-wound area from further breakdown/maceration, by using an appropriate barrier product such as a no-sting barrier film to prevent skin damage from bodily fluids, as well as medical adhesive-related skin injury (MARSII).
- Check the fit of any products/appliances used and consult the stoma nurse specialist if the appliance fits badly.
- When applying a pouch, a solid skin barrier should be used to protect the skin beneath. It should absorb moisture to keep skin dry and protected. If too absorbent, it may absorb effluent, and if too drying, it will be ineffective (Dowsett and Allen, 2013).

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## Where to learn more about MASD:

**Global Focus on MASD**  
**Resource centre:** [www.woundcare-today.com/global](http://www.woundcare-today.com/global)

## Here you will find:

- The latest articles and news on MASD.
- A free e-learning module with practice points, reflection and certificate, available in 6 languages.
- Global educational events focusing on MASD.

