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ACADEMY

MOISTURE ASSOCIATED SKIN DAMAGE SIMPLIFIED

This Simplified Guide is intended to give you guidance on the prevention and management of moisture associated skin damage to aid your clinical practice.

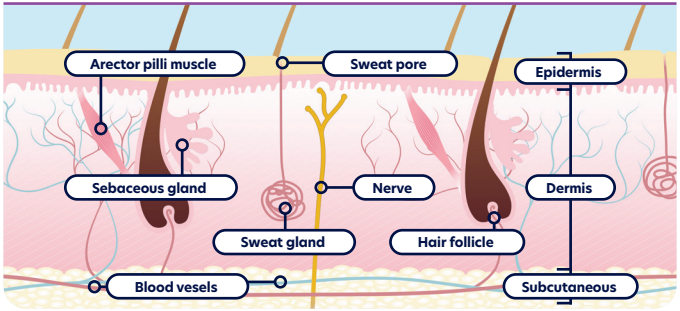
MOISTURE ASSOCIATED SKIN DAMAGE SIMPLIFIED

Moisture associated skin damage (MASD) is an umbrella term used to describe the spectrum of skin damage that can occur over time and under various circumstances *(Wound Source, 2018; Young, 2017).*

LEARNING OUTCOMES

- **Be able to differentiate between four types of MASD**
- **Understand how to prevent MASD**
- **Understand the treatment of MASD**
- **Recognise the difference between moisture and pressure**

LAYERS OF THE SKIN



Epidermis - the top layer of skin. It provides a protective barrier. The epidermis consists of four or five layers of epithelial cell, depending on its position on the body. It is a thin layer with the exception of the soles of the feet and palms of the hands.

Dermis - this lower layer sits beneath the epidermis. It contains collagen and elastic fibres that give strength to the skin. The dermis contains hair follicles, sweat glands, nerves, blood and lymph vessels.

Subcutaneous - this is the deeper layer and is made of fat that provides insulation and cushioning and connective tissue, which connects the skin to the underlying fascia of the bones and muscles.

SKIN INTEGRITY

Skin integrity refers to the overall health and condition of the skin, which includes its ability to protect the body from external elements, regulate body temperature, and prevent fluid loss. Impaired skin integrity as a diagnosis can be defined as an alteration in the epidermis and/or dermis. The skin integrity is subject to injury from a variety of external and internal factors *(Medical Dictionary, 2019).* When the skin integrity becomes impaired, it is no longer able to withstand mechanical stress, balance homeostasis, or maintain its immunological function *(Moncrieff et al., 2015).* The pH of healthy skin is between 4 and 6, providing an acidic environment that supports the normal commensal bacteria on the skin's surface. In the presence of excess moisture, the pH of the skin can increase, resulting in an alkaline environment (pH >7), which can encourage bacterial proliferation and infection.

DEFINITION OF A MOISTURE ASSOCIATED SKIN DAMAGE (MASD)

The term moisture associated skin damage (MASD) can be defined as inflammation and erosion of the skin caused by prolonged exposure to various sources of moisture, including urine or stool, perspiration, wound exudate, mucus or saliva *(Grey et al., 2011).* MASD is a term incorporating four different types: incontinence-associated dermatitis (IAD), intertriginous dermatitis (ITD), periwound skin damage, and peristomal MASD *(Woo et al., 2017).* In order for a MASD skin condition to happen, there must be moisture that comes in contact with the skin and remains in constant contact with the body for prolonged periods *(Young, 2017).*

MASD	Type of Moisture
Incontinence-associated dermatitis (IAD)	Urine and faeces
Intertriginous dermatitis (ITD)	Perspiration/sweat
Periwound skin	Exudate
Peristomal	Effluent from the stoma

(Adapted from Young, 2017)

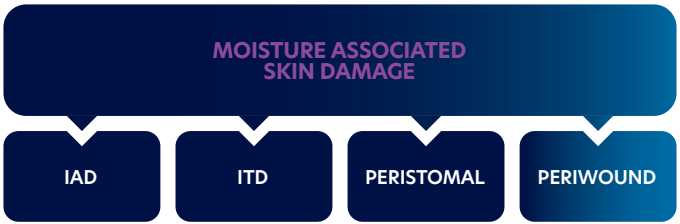
Prolonged exposure to moisture causes the skin to become increasingly permeable, making it weaker and less elastic and more susceptible to physical damage from friction and shearing forces *(Beeckman et al., 2015; Woo et al., 2017).* MASD can occur at any age, but within the older age group, the skin is more fragile and may be damaged more easily.

RISK FACTORS

Intrinsic	Extrinsic
Excessive perspiration	Chemical/biological irritants
Increased dermal metabolism (elevated local temperature)	Mechanical stress on the skin (shear, friction, pressure)
Abnormal skin pH	Fungal/candidiasis proliferation
History of atopy (genetically susceptible to contaminants/ irritants)	Seasonal or environmental factors (humidity)
Deep body folds	Incontinence (urine and/or faecal)
Dermal atrophy	Hygienic practices
Inadequate sebum production	

(Adapted from Woo et al., 2017)

TYPES OF MASD



INCONTINENCE ASSOCIATED DERMATITIS (IAD)

- Presents as erythema (redness) and inflammation of the skin, sometimes with erosion or denudation (loss of the epidermis) *(Dowsett, 2013)*.
- The acid mantle is a very fine, slightly acidic film on the surface of human skin, acting as a barrier to bacteria, viruses and other potential contaminants. Ammonia from urine and enzymes from stool disrupts this.
- A systematic approach to the assessment of IAD helps with early recognition of whether a patient is at increased risk of complications *(Bianchi, 2012)*.

INTERTRIGINOUS DERMATITIS (ITD)

- An inflammatory skin condition that affects opposing skin surfaces commonly found in the axillary and inguinal skin folds as well as under breasts in females.
- Presents as erythema (redness) and inflammation of the skin inside and adjacent to skin folds, sometimes accompanied by erosions or denudation (loss of the epidermis) *(Dowsett, 2013)*.
- Inflammation resulting from bodily fluids trapped in skin folds with minimal air circulation that is subjected to friction. This causes the area to be at a higher risk of developing an infection.

PERISTOMAL MOISTURE ASSOCIATED DERMATITIS

- Presents as erythema (redness) and inflammation of the skin around the stoma, accompanied by denudation (loss of epidermis) *(Dowsett, 2013)*.
- Clear interaction between the skin and the stoma effluent. Beginning at the stoma/ skin junction, which can then spread outwards to affect the surrounding skin. *(Colwell et al., 2011)*.

PERIWOUND MOISTURE ASSOCIATED DERMATITIS

- Presents as erythema (redness) and inflammation of the skin within approximately 4cm of the wound edge are sometimes accompanied by erosions or denudation (loss of the epidermis) *(Dowsett, 2013)*.
- Excessive amounts of exudate can cause maceration and breakdown of periwound skin.
- Exudate from chronic wounds has been found to contain a higher concentration of proteolytic enzymes, (that can cause a wound to stay in the inflammatory phase), when compared to exudate in acute wounds *(Romanelli et al., 2010)*.
- Accurate wound and patient assessment, including exudate levels, type, colour and consistency must take place so that appropriate treatment can be planned.

TREATMENT AND PREVENTION

A systematic approach to the assessment of MASD helps with early recognition of whether a patient is at increased risk. It also helps health care professionals identify when prevention strategies should be put into place *(Ousey et al., 2012)*. An assessment of the patient's skin and hygiene should be a fundamental part of their care. By monitoring the skin, signs of skin damage can be noted, and the relevant steps taken. Loss of skin integrity can have a significant impact on the patient, including risk of skin infection, pain and discomfort, anxiety and distress, alongside a loss of dignity. A skin assessment should be part of a comprehensive holistic assessment *(AWTVNF, 2014)*.

For all types of MASD, a complete and comprehensive holistic assessment is required. Including a full skin evaluation and risk factors in order to implement a management plan:

- Remove any irritants from the skin and protect it from further exposure.
- Use devices/products that control or divert the sources of excessive moisture or that wick moisture away from affected or at-risk skin.
- Cleanse perineal skin after each episode of incontinence with a pH 5.5 cleanser/wipe.
- If possible, use disposable wash basins for cleansing to reduce cross-infection risk.
- Examine closely in skin folds for residual causes of moisture.
- Address any secondary infections, use of antiseptics/ antimicrobials (refer to local policy/specialists).
- Moisturise and protect using emollients and/or skin barrier products.
- Implement a prevention strategy.
- Educate the patient and/or carers on the preferred method of skin care regimen.

(Adapted from Dowsett, 2013; BCPNSWC, 2019)

Where appropriate, include patients in decisions about their treatment andinvolve/educate patients and/or carers on the use of products and devices. *(Refer to local policy and/or specialist)*

INCONTINENCE ASSOCIATED DERMATITIS (IAD)

- Determine the cause of IAD e.g. urine and or faeces.
- Clean the skin promptly after each incontinence episode with a pH-neutral skin cleanser. Avoid the use of soap as this can alter the skin's pH and acid mantle with the potential to dehydrate and irritate the skin *(AWTVNF, 2014)*.
- Keep skin clean and dry, apply barrier products such as creams and sprays.
- Treat any areas of cutaneous candidiasis (thrush) with appropriate antifungal.
- Consider the use of appropriate products or devices to divert urine or stool.
- Address and treat the cause of incontinence, including the risk of infection.
- Reduce exposure to irritants.

(Adapted from Dowsett, 2013; Zulkowski, 2017; BCPNSWC, 2019)

INTERTRIGINOUS DERMATITIS (ITD)

- A full assessment, including skin and risk factors, should be undertaken to provide and implement a management plan.
- Examine the entire area of skin folds, including the base. Use assistance where appropriate to gently lift the fold without exacerbating any damage in the area.
- Note the tissue type and the treatment aim when considering treatment options.
- Clean vulnerable skin with a gentle cleanser with minimal rubbing. Avoid soaps with an alkaline pH *(Woo et al., 2017)*.
- Ensure careful drying of the skin fold.
- Protect the affected area from further breakdown or maceration.
- Avoid the use of occlusive barriers such as petrolatum.
- Avoid products containing chlorhexidine gluconate, alcohol or perfumes, as these can be absorbed by damaged skin *(Dowsett, 2013)*.
- Use moisture-wicking fabric in affected skin folds to reduce moisture and prevent skin-on-skin friction.
- Encourage patients to wear light, loose clothing made from natural fibres and quick-drying material.

(Adapted from Dowsett, 2013; Zulkowski, 2017; Woo et al., 2017)

TREATMENT AND PREVENTION

PERISTOMAL MOISTURE ASSOCIATED SKIN DAMAGE

- Use water rather than cleansers to cleanse peristomal skin.
- Avoid products (unless recommended by a specialist) or other irritants on the peristomal skin.
- Ensure that the most suitable appliance/bag/system has been selected and that size and fit are correct.
- Protect peristomal and surrounding skin area from further maceration and consider using barrier products (please refer to local policy) to prevent further breakdown.
- Include patients in decisions.

(Adapted from Dowsett, 2013)

PERIWOUND MOISTURE ASSOCIATED SKIN DAMAGE

- Assess wound exudate with regard to the amount produced (low, medium, high), consistency, colour, and presence of odour.
- Consider the levels of exudate when selecting a dressing and choose an appropriate dressing for the exudate level that will help reduce further maceration and damage.
- Be aware of the potential for wound infection.
- If the wound is not healing/ progressing, reassess to establish comorbidities.
- Protect periwound area from further breakdown/maceration using a barrier product.
- Address the cause/source of the exudate.
- Consider increasing the frequency of dressing changes.
- Perform regular wound assessments to monitor the progress.

(Adapted from Dowsett, 2013; BCPNSWC, 2019)

NUTRITION

Good nutrition is regarded as a major strategy for maintaining the skin barrier, skin integrity and health and to ensure optimal healing *(Kottner et al., 2013)*. It is important to note that malnutrition can occur in obese and underweight individuals. It increases the risk of susceptibility to ill health, with one of the consequences being impaired wound healing *(AWTVNF, 2014)*. The use of a nutritional assessment tool is recommended, e.g. Malnutrition Universal Screening Tool (MUST) to evaluate the patient's nutritional status and ensure the patient has adequate nutrition and hydration to maintain skin integrity or promote healing. Protein is essential to skin health; if there is a protein deficiency, this can raise the risk of skin breaking down *(Wounds UK, 2018)*. By improving a patient's nutritional status, it can, in turn, improve the appearance and strength of the skin as well as reducing the risk of additional deterioration *(AWTVNF, 2014)*.

PRESSURE INJURY VS. MASD

There is often confusion between a pressure ulcer/injury and a moisture associated lesion due to the presence of moisture at the site of a pressure ulcer/injury, which may be as a result of incontinence of urine and/or faeces *(EPAUP, 2014)*.

- Moisture lesions are often reported as Category 2 pressure damage.
- It is important to identify the cause of any skin damage, as the treatment and management of pressure damage and moisture associated skin damage may differ *(Yates, 2012)*.

CONCLUSION

Protection of the skin against moisture damage is an important component of comprehensive skin and wound care *(Woo et al., 2017)*. **Adopting a holistic assessment approach is essential in conjunction with understanding the differing types and causes of MASD. A comprehensive skin assessment and maintaining skin integrity is fundamental to treatment and prevention. A key component of this is the implementation of a structured skin care routine that involves cleansing, protecting and restoring damaged skin** *(Young, 2017)*.

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NOTES

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Simplifying the Complexities of Wound Care

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