

Moisture-associated Skin Damage

This BPR Brief is an abridged version of the **Best Practice Recommendations for the Prevention and Management of Moisture-associated Skin Damage**. In alignment with a global health-care perspective, Wounds Canada is committed to provide support to patients to help them adapt to and self-manage their condition in the face of social, physical and emotional challenges. This document uses the **Wound Prevention and Management Cycle** (WPMC) (Figure 1) as the basis for clinical decision making. For clinicians, this document is meant as a cue for treatment; it provides non-inclusive examples listed below each recommendation. For policy makers, it highlights (in ***bold italics***) actions and policies that support best practice.

Wounds Canada follows a population health strategy for wound care that enables us to address the entire range of individual and collective factors that determine health, including:

- Better health: health of the general population improved; behavioral, social, economic and environmental determinants addressed; preventative care rewarded
- Better health care: patient-centred, reliable, safe, evidence-based treatment; care managers co-ordinate total health-care delivery; evidence-based treatment with outcome tracking
- Better value: costs and cost improvements monitored; readmissions to hospital reduced; early interventions to reduce per patient cost implemented; unnecessary or duplicate procedures eliminated; information management technologies utilized

For more information on content, levels of evidence or tools related to a particular recommendation, click on the links provided.

We strongly recommend that before using this BPR Brief the user read the full best practice recommendation (BPR) document. To obtain a copy of the full document, go to: www.woundscanada.ca/docman/public/health-care-professional/bpr-workshop/1814-wc-bpr-prevention-and-management-of-moisture-associated-skin-damage-1949e-final/file.

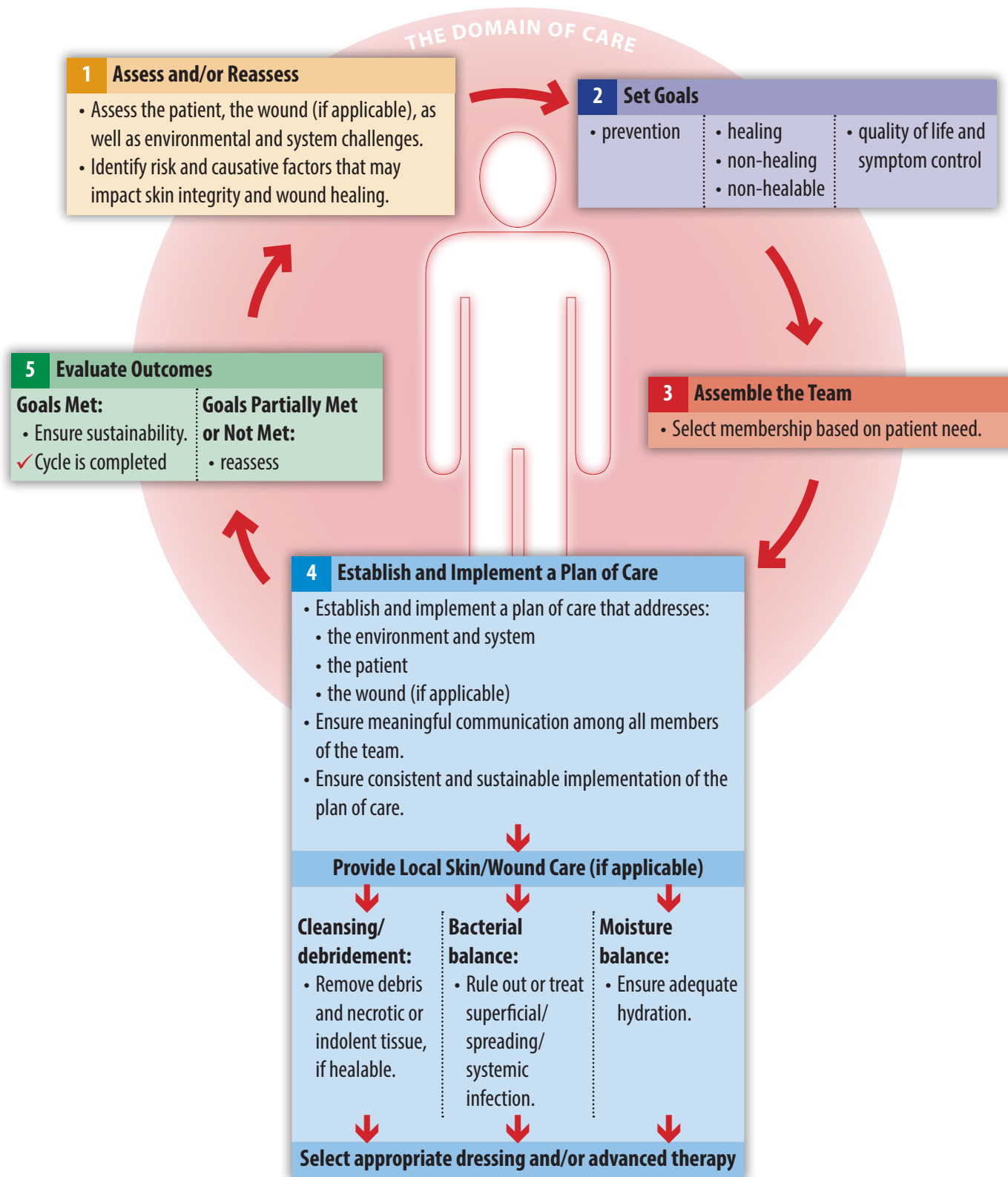
Introduction

Moisture-associated skin damage (MASD) occurs when skin is exposed to moisture—such as water, perspiration, urine and/or feces, wound exudate, saliva and mucous—for prolonged periods of time. This can result in over-hydrated or eroded skin that causes a separation of the skin layers, also known as maceration. The key factors in the development of MASD include the length of time moisture is in contact with the skin, previous skin injury, and mechanical and/or chemical factors such as friction, shear and the composition of fluid.

There are five specific types of MASD, and it is imperative that clinicians are able to identify the type to provide proper prevention activities, diagnosis and management interventions. The five different types of MASD are:

- Incontinence-associated dermatitis (IAD): a type of irritant contact dermatitis (inflammation of the skin) found in patients with fecal and/or urinary incontinence.
- Intertriginous dermatitis (intertrigo or ITD): the result of friction in the presence of moisture. Susceptible areas are those where the skin is warm, where moisture can accumulate, and where the skin is prone to friction. May include the axilla, inframammary, abdominal and inguinal folds.

Disclaimer: This document provides a clinical enabler for the recommendations outlined in the Best Practice Recommendations (BPRs) for the Prevention and Management of Peripheral Arterial Ulcers. For more information on a particular recommendation or a copy of the full document go to: <https://www.woundscanada.ca/docman/public/health-care-professional/bpr-workshop/1690-wc-bpr-prevention-and-management-of-peripheral-arterial-ulcers-1921e-final/file>.

Figure 1: Wound Prevention and Management Cycle (WPMC)

- Periwound (including peri-tube/drain and peri-fistula) MASD: multifactorial and often associated with irritant or allergenic contact dermatitis of the surrounding wound skin secondary to moisture, usually related to wound exudate
- Peristomal MASD: damage around a stoma resulting from enzyme-containing effluent or other contributory factors such as mechanical trauma or medical-adhesive-related skin injury from appliances, bacteria, underlying skin disorders such as psoriasis or eczema, and the possibility of allergies to chemicals or fabrics
- Immersion Foot (IF): a syndrome secondary to prolonged foot exposure to moisture; may be further subdivided into a) that occurring only with prolonged exposure to water (IF) or b) in conjunction with severe cold injury, in which case the term freezing injury (FI) is used

1 Assess and/or Reassess

- Assess the patient, the wound (if applicable), as well as environmental and system challenges.
- Identify risk and causative factors that may impact skin integrity and wound healing.

Assessment must occur to determine the causes and factors that may impact skin integrity and wound healing. Patient assessment includes history and current health status; skin status (and wound status, if applicable); environmental factors and system factors. If, after the WPMC has been completed, the goals of care have not been fully met, reassessment must take place, followed by the rest of the recommendations in the WPMC steps. **Assessment tools need to be available and in use in all care settings, supported by staff education and policy.**

1.1 Select and use validated patient assessment tools.

Recent validated assessment tools pertaining to MASD have been identified in the literature.

Table 1: Categorization and Assessment Tools for the Different Types of MASD

| | Categorization Tools | Assessment Tools |
|------------------------|--|--|
| IAD | Ghent Global IAD Tool Perineal Assessment Tool | Ghent Global IAD Monitoring Tool |
| ITD | None available | None available |
| Periwound MASD | None available | None available |
| Peristomal MASD | The SACS™ Instrument AIM (Ostomy Skin Tool) | The SACS™ Instrument DET (Ostomy Skin Tool) |
| IF | None available for IF (if FI occurs Frostbite Extremes of Injury Classification System by Cauchy et al.) | None available for IF (if FI occurs Frostbite Extremes of Injury Classification System by Cauchy et al.) |

1.2 Identify risk and causative factors that may impact skin integrity and wound healing.

Obtaining a detailed history in all areas of the biopsychosocial spectrum, in combination with a comprehensive physical examination, is essential in discovering all causative intrinsic and extrinsic factors of MASD.

1.2.1. Patient: Physical, emotional and lifestyle

Physical Assessment

A physical assessment should include a focused skin assessment that takes into consideration the level of hydration, redness, areas of denudement, number of lesions, symmetry, location of changes, odour, peri-wound skin and skin colour changes and the patient's ability to perform head-to-toe skin care. It is important to assess and identify the source of moisture to determine the correct type of MASD, as the plan of care to prevent and treat MASD depends on the origin of moisture. For those experiencing peristomal or peri-wound MASD, removal of any dressings or appliances and thorough cleansing of the area will be required prior to inspection of the skin.

Table 2: Modifiable, Non-modifiable and Causative Factors for MASD

| Type of MASD | Modifiable Risk/Causative Factors |
|------------------------|---|
| IAD | <ul style="list-style-type: none"> ▪ Primary sources of moisture: urine and feces ▪ Urinary and/or fecal incontinence combined with friction between the skin and an absorbent product ▪ Urinary incontinence ▪ Fecal incontinence—leads to greater risk of exposure of skin to digestive enzymes which accelerates skin breakdown ▪ Aged skin, altered skin oxygenation, fever, air flow restriction, decreased mobility ▪ Prolonged use of steroids, antibiotics, or promotility agents ▪ Impaired functional, emotional or cognitive status and/or mobility |
| ITD | <ul style="list-style-type: none"> ▪ Primary source of moisture: perspiration ▪ Often the result of moisture combined with areas of high friction ▪ High body mass index, lymphedema, multiple skin folds, pendulous breasts ▪ Malnourishment, poor mobility, poor hygiene habits, diabetes mellitus ▪ Hyperhidrosis, or profuse perspiration ▪ Hot and humid climates |
| Periwound MASD | <ul style="list-style-type: none"> ▪ Primary sources of moisture: wound exudate ▪ Chronic wounds contain higher amounts of proteolytic enzymes ▪ Occlusive wound dressings or products, which increase the level of moisture to an excessive amount ▪ Higher risk for the elderly, the immunocompromised or those with previous environmental skin damage (radiation, sun exposure), skin disorders (eczema, psoriasis), underlying pathology and congenital disorders (epidermolysis bullosa) |
| Peristomal MASD | <ul style="list-style-type: none"> ▪ Primary source of moisture: stomal effluent; urine, feces or mucous ▪ Pulmonary secretions in those with tracheostomies ▪ Ill-fitting or leaking appliances ▪ Stoma placement embedded within skin folds, flat or retracted stomas ▪ Fluctuation in weight, change in abdominal circumference ▪ Inexperience: untrained clinicians and new ostomates applying appliances ▪ Gastric leakage from gastrostomies ▪ Peri-drain/tube drainage |

cont'd...

IF

- Wearing wet footwear/socks for prolonged periods of time
- Obesity
- Inability or lack of assistance to perform foot hygiene
- Excessive foot perspiration
- Homelessness
- Plaster casts
- Long wear time of combat, construction or rubber boots

Emotional and Lifestyle Assessment

MASD can have an effect on psychological and social functioning of the patient, which can result in social isolation and loss of independence, leading to depression. Psychological assessment should be performed to assess the level of impact of MASD on quality of life (QoL) of the patient, the family, and the care partner(s). MASD can result in severe limitations on activities of daily living as well as various other social activities such as dining out, travelling or engaging in intimate and/or sexual activity. Including the patient in identifying risk factors can help them move towards better overall health.

1.2.2. Environmental: Socio-economic, care setting, potential for self-management

In Canada, populations at higher risk for MASD are those who have decreased access to their health-care system (e.g., accessing home care in remote and rural regions), those new to Canada, undocumented immigrants, those of low socio-economic status, uninsured or underinsured persons, and individuals with low literacy. It is critical to provide a culturally sensitive environment for care.






1.2.3. Systems: Health-care support and communication.

Support from all levels of health care is imperative for effective prevention and management strategies related to all forms of MASD. Currently, provincial legislation mandates organizations report on the incidence and prevalence of PIs, but not for other nosocomial-acquired injuries such as skin tears or MASD. Although guidelines exist in some provinces, it is not mandated that organizations report metrics. Standardized language is a critical component of effective communication between clinicians. Clinicians require education and tools to be able to differentiate not only among pressure injuries, skin tears and MASD, but also among the types of MASD.

1.3 Complete a skin/wound assessment, if applicable.

It is important to complete a comprehensive and focused skin assessment to determine the specific sub-type of MASD and etiology. This should include, but may not be limited to, maceration, erythema and level of erosion. Thorough cleansing of the area prior to a focused wound assessment will improve accuracy in identifying the level of tissue involvement and drainage type. A skin biopsy can be an important tool in the diagnosis of a wide array of inflammatory skin conditions and irritant dermatitis such as IAD and ITD; however, it cannot reliably discriminate between the two. Diagnosis should be based on clinical features with judicious use of percutaneous skin testing for contact dermatitis related to irritants and allergies.

Table 3: Comparison of MASD Clinical Subtypes

| MASD Type | Appearance | Clinical Features |
|---|---|--|
| IAD |  | <ul style="list-style-type: none"> Location: perineum, labial folds in women, scrotum in men, buttocks, gluteal fold, medial and posterior aspects of upper thigh, lower back Erythema and inflammation with or without skin breakdown Discomfort, pain, itching, burning Prone to secondary infections Extreme cases: swelling and blister formation |
| ITD |  | <ul style="list-style-type: none"> Location: axilla, inframammary, abdominal and inguinal folds, pubic panniculus, gluteal cleft, areas that harbour moisture Less common locations: interdigital, eyelids, antecubital, retroauricular Starts as mild erythema and can progress to severe swelling with maceration, denudation, weeping, and crusting with potential secondary infection Centralized erythema with satellite lesions often associated with <i>Candida albicans</i> Itchy, burning, pain and odour Chronic subtle onset of pruritis, burning, tingling, and pain in the skin folds |
| Periwound MASD |  | <ul style="list-style-type: none"> Location: Erythema and inflammation of the skin surrounding the wound up to 4 cm from the wound edge Maceration appears as reversible pallor secondary to excessive moisture and wrinkled skin Edge migration may be diminished Hypergranulation tissue may present within the wound Hyper- or hypopigmentation of the surrounding intact skin |
| Peristomal MASD |  | <ul style="list-style-type: none"> Location: begins at the stoma-skin junction and may extend outwardly by up to 10 cm around the stoma Includes urinary and fecal diversions, tracheostomies, and other stomas Erythema and inflammation of the peristomal skin with or without skin breakdown |
| IF <i>Photo compliments of LM Parsons</i> |  | <ul style="list-style-type: none"> Location: feet: begins as tingling, itching and/or a numbing feeling Erythema or cyanosis with appearance Feet may appear doubled in size due to edema Burning, pain or numbness Mild blistering, petechiae |

2 Set Goals

- | | | |
|--------------|--|---------------------------------------|
| • prevention | • healing • non-healing • non-healable | • quality of life and symptom control |
|--------------|--|---------------------------------------|

Goals of care need to revolve around the patient. Achieving goals will depend on the interplay of the patients' health status and lifestyle, the availability of resources and the knowledge and ability of care partners to provide optimal interventions. If these factors are not taken into consideration the goals of care may be unrealistic and unrealizable. The team should aim to set goals according to the **SMART principle**: **S**pecific, **M**easureable, **A**ttainable, **R**elevant and **T**imely.

2.1 Set goals for prevention, healing, non-healing, and non-healable wounds

Although patients experiencing any subtype of MASD may face intrinsic and extrinsic barriers to healing, clinicians should always recognize the opportunity to promote healing despite these factors, with adequate barrier protection and further skin barrier maintenance. Goals should always include prevention and support regular application of a distinct skin care routine in conjunction with methods of reducing friction and moisture within the affected areas.

Table 4: Examples of SMART Goals

| Type of MASD | Goals Might Include |
|------------------------|---|
| IAD | <ul style="list-style-type: none"> Implement interventions to prevent skin breakdown related to IAD within 1 day Manage incontinence within 1 week Restore skin integrity within 2 weeks |
| ITD | <ul style="list-style-type: none"> Implement interventions to prevent skin breakdown related to ITD within 1 day Keep skin folds dry within 1 day Reduce the amount of friction in intertriginous areas within 1 day Resolve secondary infection (if appropriate) within 5 days |
| Periwound MASD | <ul style="list-style-type: none"> Implement periwound skin maceration prevention interventions within 1 day Manage periwound skin maceration within 1 week Resolve secondary infection within 5 days |
| Peristomal MASD | <ul style="list-style-type: none"> Implement peristomal skin maceration prevention interventions within 1 day Restore a healthy peristomal skin within 1 week Resolve secondary infection (if appropriate) within 5 days |
| IF | <ul style="list-style-type: none"> Implement interventions to prevent further damage related to IF within 1 day Restore skin barrier function within 1 week Access appropriate footwear within 2 days |

2.1.1 Identify goals based on prevention or healability of wounds.

All types of MASD should be considered healable, as the underlying factor is moisture secondary to a variety of mainly controllable factors, and the primary goal should be the prevention of future episodes of skin breakdown through methods of moisture control. ***In settings where licensed health-care professionals are present, all new cases of MASD should be given independent consideration and be considered nosocomial injury to the patient.*** Prevention of all categories of incontinence-associated dermatitis begins with a continence assessment, including a functional assessment of the patient's ability to toilet and regain or maintain their ability to toilet.

2.1.2 Identify quality-of-life and symptom-control goals.

Clinicians must acknowledge patient values and develop an individualized plan of care that always considers the patient's quality of life, values and wishes for treatment. ***Organizations investing in evidence-based skin care protocols are more likely to improve patient experience, increase the number of positive clinical outcomes and drastically increase the quality of life for those suffering from MASD.***

3 Assemble the Team

- Select membership based on patient need.

An integrated team is necessary to implement, adjust and sustain a plan to meet the patient-specific goals.

The team should include the relevant health-care professionals and other service providers as required as well as the patient, family and their support system.

3.1 Identify appropriate health-care professionals and service providers.

Respectful and trusting partnerships between patients and health-care professionals are crucial in obtaining patient buy-in and agreement to engage in self-care strategies. ***It is essential for clinicians to know their community and the resources available within their catchment area to better facilitate seamless transition across sectors (e.g., from hospital to home or home to respite).*** Potential team members include a nurse specialized in ostomy and continence care (NSWOC), clinician with advanced wound education, physician or nurse practitioner, registered dietitian, personal support worker, physical therapist, occupational therapist, pharmacist, social worker, psychologist.

3.2 Enlist the patient and their family and caregivers as part of the team.

For those with MASD, precipitating factors are largely the ability to self-manage personal hygiene. All patients, care partners and health professionals should be equipped with information regarding the prevention and management of MASD. For the patient to be a contributing member, it is imperative that they fully understand their health-related condition and all components of the plan of care to optimize outcomes. A well-functioning team with the patient at the centre increases the likelihood of successful engagement.

3.3 Ensure organizational and system support.

Wounds Canada's resources and education align with a population health management model. This model encourages the proactive management of a total population at risk for adverse outcomes through a variety of individual, organizational and cultural interventions to improve patient, clinical and financial outcomes. The interventions are based on a risk-stratified needs assessment of the population, supported by a comprehensive governance infrastructure.

Organizational acknowledgement of risk factors and implementation of prevention strategies for the various types of MASD are crucial to prevent occurrence. Access to and implementation of products and evidence-based protocols are necessary to control the sources of moisture for any type of MASD and reduce negative outcomes in any health organization—public or private. System support also requires organizations to provide adequate staffing to ensure such vital prevention strategies are not missed. To support this model and secure successful outcomes, decision makers must:

- *Use globally recognized risk classifications to identify risk, support prevention and develop management strategies by allocating appropriate resources for products such as appropriate dressings, incontinence supplies and footwear, patient education and clinical visits.*
- *Develop policies (federal, provincial/territorial, regional and institutional) based on current evidence that acknowledge and designate human, material and financial resources to support the team in the development of an MASD prevention program.*
- *Establish a pathway for referral of people with skin problems to a multidisciplinary service.*
- *Work with community and other partners to develop a process to facilitate patient referral and access to local health professionals with specialized knowledge in skin and wound management.*
- *Work with community and other partners to advocate for strategies and funding for all aspects of preventative skin care.*
- *Ensure services and programs exist for the assessment and continuing surveillance of those defined as being at increased risk in order to prevent skin breakdown, and to support management in their health-care or community setting.*
- *Establish, train and support an integrated team composed of interested, skilled and knowledgeable persons to address and monitor quality improvements in the prevention and management of skin complications.*
- *Establish and sustain a communication network between the person with or at risk for skin complications and the necessary health-care and community systems.*
- *Audit all aspects of the service to ensure that local practice meets accepted national and international standards of care.*

In order to achieve these steps and improve patient outcomes, establish or adopt a system-wide care pathway.

4 Establish and Implement a Plan of Care

- Establish and implement a plan of care that addresses:
 - the environment and system
 - the patient
 - the wound (if applicable)
- Ensure meaningful communication among all members of the team.
- Ensure consistent and sustainable implementation of the plan of care.

Provide Local Skin/Wound Care (if applicable)

Cleansing/ debridement:

- Remove debris and necrotic or indolent tissue, if healable.

Bacterial balance:

- Rule out or treat superficial/spreading/systemic infection.

Moisture balance:

- Ensure adequate hydration.

Select appropriate dressing and/or advanced therapy

Ensure that care addresses the goals and considers patient needs, factors relating to the skin and wound (if applicable), as well as the environment and the system in which the team is situated.

4.1 Identify and implement an evidence-based plan to correct the causes or cofactors that affect the skin integrity, including patient needs (physical, emotional and social), the wounds (if applicable) and environmental/system challenges.

Correcting the cause for all types of MASD includes removing the moisture source or, at a minimum, reducing the length of exposure time of the epidermis to the moisture source. Repairing the epidermal barrier with emollients and humectants and using appropriate products such as skin barriers and dressings to manage the moisture source are essential evidence-based strategies included in each plan of care (Table 5).

Table 5: Prevention and Treatment Strategies

| Type of MASD | Prevention and Treatment Strategies |
|------------------------|---|
| IAD | <ul style="list-style-type: none"> Assess and treat reversible causes of incontinence. Establish a skin care regimen and ensure all team members are diligent. Optimize nutrition and fluid management. Provide appropriate containment products. Check containment products on a regular basis. Change products as soon as soiled. Introduce toileting techniques as able. |
| ITD | <ul style="list-style-type: none"> Apply moisture-wicking product impregnated with silver or PHMB impregnated gauze between the folds to wick away or absorb moisture. Ensure clothing is breathable and loose fitting. Make sure antifungal cream or oral antifungal treatment is continued for 7 days after the disappearance of clinical signs to prevent recurrence. Administer pain and antihistamine medication as required. Reduce or eliminate skin-on-skin contact. Encourage, where able, weight reduction in cases of obesity. Instruct patient and care partners on the importance of bathing, showering (especially after exercise) and carefully drying skin folds. |
| Periwound MASD | <ul style="list-style-type: none"> Use appropriate dressing to manage moisture balance. Apply a skin protectant (no-sting film barrier, petrolatum-based or zinc-based skin protectant) to the periwound skin to reduce the risk of periwound skin maceration. |
| Peristomal MASD | <ul style="list-style-type: none"> Use appropriate technique and ostomy devices to provide a good seal. Use a hydrophilic barrier to ensure a good seal. Tracheostomy: <ul style="list-style-type: none"> Keep peristomal skin dry and apply absorbent products to keep humidity away from the skin and absorb any leakage. Apply a moisture-wicking product impregnated with silver or PHMB impregnated gauze. Consider referral to a respiratory therapist and consider non-product-based treatment such as increasing frequency of upper airway suction. Gastrostomy: <ul style="list-style-type: none"> Identify and correct the cause of leakage. Keep peristomal skin dry and apply absorbent products that will keep the humidity away from the skin and to absorb any leakage. Consider referral to NSWOCC, stoma or gastroenterology nurse. |
| IF | <ul style="list-style-type: none"> For acute events address physical and mental status and consider social assessment. Warm and dry the affected area. Dispose of wet footwear and provide warm, dry clothing. Once the initial treatment phase has passed an assessment of quantitative peripheral sensory testing, such as Semmes-Weinstein should be considered in severely affected or symptomatic individuals or those at risk for re-injury. For FI: <ul style="list-style-type: none"> Re-warm actively and rapidly in a water bath (40–42°C). Passive rewarming is only acceptable when the first option is unavailable. Have patient avoid nicotine or other vasoconstrictors during the period of rewarming. Provide thrombolytic therapy to identified candidate patients but only in an appropriate medical setting. Debride necrotic tissue, if necessary, at a later stage and only after completion of the rewarming cycle and assessment of arterial status. Provide supportive care of post-injury nerve and skin damage. Educate patients to prevent repeat injury. |

For the complete version of Best Practice Recommendations for the Prevention and Management of Moisture-associated Skin Damage, visit [here](#).

In cases of recalcitrant MASD, percutaneous testing to look for potential allergic contact dermatitis may be necessary. Sources of contact allergens include topical antibiotics, preservatives, antioxidants and fragrances in skin cleansers, emollients and barrier creams. Components of the dressings themselves may act as allergens. Testing for contact allergy may require a referral to a specialized centre.

4.2 Optimize the local wound environment: Cleansing, debriding, managing bacterial balance and managing moisture balance.

Table 6: Local Wound Environment

| | IAD | ITD | Periwound MASD | Peristomal MASD | IF |
|---|--|--|--|---|---|
| 4.2.1 Cleansing | <ul style="list-style-type: none"> Wash and cleanse area and surrounding intact skin with a gentle cleanser* or with a no-rinse skin cleanser Pat dry; do not rub. Single-use washcloths are preferred. | <ul style="list-style-type: none"> Use a noncytotoxic agent* or potable water to cleanse the area and surrounding intact skin well. Pat dry; do not rub. | <ul style="list-style-type: none"> Use a noncytotoxic agent* or potable water to cleanse the periwound area and surrounding intact skin well. Pat dry; do not rub. | <ul style="list-style-type: none"> Wash with potable water. Use a soft or disposable cloth. Gently but thoroughly pat dry. Avoid soaps and other alkaline products. | <ul style="list-style-type: none"> Use a noncytotoxic agent* or potable water to cleanse the foot. Pat dry; do not rub. |
| 4.2.2 Debriding | <ul style="list-style-type: none"> No | <ul style="list-style-type: none"> No | <ul style="list-style-type: none"> No | <ul style="list-style-type: none"> No | <ul style="list-style-type: none"> Yes, indicated by necrotic tissue and adequate blood flow |
| 4.2.3 Managing bacterial balance | <ul style="list-style-type: none"> If fungal infection is evident, apply a miconazole containing paste 1 to 2 times daily. Where signs of increased bioburden are evident apply a povidone iodine lotion. | <ul style="list-style-type: none"> Place a silver impregnated fabric between the folds to wick away moisture. Use PHMB impregnated gauze. | <ul style="list-style-type: none"> Ensure peri-wound hygiene and protection. | <ul style="list-style-type: none"> If fungal infection is evident, apply anti-fungal cream or powder. If applying cream, ensure the cream is well penetrated before applying the ostomy pouching system. | <ul style="list-style-type: none"> Prophylactic antibiotics have no benefit; however, if infection is suspected target <i>streptococcal</i>, <i>staphylococcal</i>, and <i>Pseudomonas aeruginosa</i>. |

cont'd...

| | | | | | |
|--|---|--|--|--|--|
| 4.2.4 Managing moisture balance | <ul style="list-style-type: none"> ▪ Use polymer-based incontinence products or underpads. ▪ If extensive diarrhea, it's preferable to apply pads instead of diapers. ▪ When applied, diapers should not be closed tightly. ▪ Use containment devices when appropriate. | <ul style="list-style-type: none"> ▪ Use silver-impregnated fabric placed between the folds to wick away moisture. ▪ PHMB impregnated gauze. ▪ Antiperspirant, loose clothing, good airflow | <ul style="list-style-type: none"> ▪ Protect the skin with no-sting barrier film or ointment-based skin protectant. ▪ Explore various products to ensure maximal absorption and skin protection. | <ul style="list-style-type: none"> ▪ Ensure the ostomy skin barrier is protecting the peristomal skin. Assess pouching device to ensure proper fit and prevention of leakage. | |
|--|---|--|--|--|--|

*See Wounds Canada's *Product Pickers*, below, for more information.

4.3 Select the appropriate dressings and/or advanced therapy

The first steps in treating any form of MASD are to control the moisture on the affected skin and prevent the moisture from accumulation.

Table 7: Dressing/Therapy Selection

| IAD | ITD | Peri wound MASD | Peristomal MASD | IF |
|--|---|--|---|--|
| <ul style="list-style-type: none"> ▪ Hydrophillic paste dressings ▪ Petrolatum, zinc, or dimethicone based barrier ointments or creams ▪ No-sting film barrier or ointment ▪ If infected, avoid the use of film barriers till infection resolved. ▪ Implement a toiletting schedule. ▪ If containment products are used, ensure barrier products are compatible with device. | <ul style="list-style-type: none"> ▪ Moisture-reduction products. ▪ Use of anti-inflammatory topical steroids when needed (reassess use frequently). ▪ Consider referral to a dermatologist for recalcitrant dermatitis. | <ul style="list-style-type: none"> ▪ Control moisture with appropriate absorptive dressings, ideally providing vertical absorption. ▪ If moisture is a result of leg edema ensure edema management has occurred. | <ul style="list-style-type: none"> ▪ Refer to an NSWOC or a stoma care nurse. ▪ Consider referral to a dermatologist for recalcitrant dermatitis. | <ul style="list-style-type: none"> ▪ Provide adequate oral analgesia. ▪ Elevate affected extremity. ▪ Hypothermic cooling. ▪ Slow re-warming ▪ Pain relief ▪ Persons living without adequate shelter or housing need support to obtain and maintain adequate foot hygiene practices and properly fitting shoes for the various weather conditions. |

**See Wounds Canada's *Product Pickers*, below, for more information.

Note: Products NOT recommended for MASD are those that donate moisture to the area such as hydrogels or dressings promoting an occlusive environment, thereby restricting the ability for moisture to evaporate.

Wounds Canada's Product Pickers

Skin and Wound Clean-up: helps users choose appropriate skin and wound cleansers as well as irrigating solutions

Wound Dressing Formulary: describes common wound dressings in generic categories and lists usage considerations

Wound Dressing Selection Guide: helps users choose appropriate primary and secondary dressings based on common clinical situations and wound care goals

4.4 Engage the team to ensure consistent implementation of the plan of care.

It is essential to engage all members of the team in care planning to optimize the outcome. ***Clinical staff education and awareness campaigns that report the outcomes of prevention strategies for MASD can help to change practice.*** Patients and care partners need to be kept engaged, as they will ultimately be the ones to control some of the underlying factors that caused the MASD.

5 Evaluate Outcomes

Goals Met:

- Ensure sustainability.
- ✓ Cycle is completed

Goals Partially Met or Not Met:

- reassess

Evaluation of the plan of care should be routine and ongoing to identify whether the plan is effective in meeting the goal(s). If, after the cycle has been completed, goals of care have not been fully met, reassessment (Step 1) must take place, followed by the rest of the Wound Prevention and Management Cycle steps. ***The plan of care needs to be revisited at discharge to ensure that self-management strategies are in place to support the patient to sustain the outcomes achieved after discharge.***

5.1 Determine if the outcomes have met the goals of care.

Reassessment of MASD helps clinicians determine if prevention and treatment plans have resulted in achieving established goals. If a routine skin care regimen is implemented an improvement should be noted in a two-week period. If subtypes of MASD are not resolving and skin integrity is not maintained, reassessment of causative factors and barriers to healing, and revision of the care plan, are necessary.

5.2 Reassess patient, wound, environment and system if goals partially met or unmet.

When goals of care are partially met or unmet, go back to Step 1 of the Wound Prevention and Management Cycle. Reassessment needs to consider gaps in care or the patient's ability to adapt to their condition and engage in self-management. Inclusion of the team members is important in reassessment and exploration of modifiable factors and patient involvement and ability to support the care plan. Timely referral and continued use of categorization and assessment tools can provide a foundation for further development of validated assessment tools able to reliably detect change.

5.3 Ensure sustainability to support prevention and reduce risk of recurrence.

Identifying and managing the appropriate cause of MASD, type of MASD and patient barriers to healing are vital in reducing risk of recurrence. Incorporating prevention strategies into the plan of care can promote preventive behaviour throughout the management process.

- Frequent skin assessments are required, and a bundled approach to care should be implemented, including reassessing mobility, nutrition, continence and possible allergies.
- Implementation of a consistent and structured skin care regimen is essential, including education to patients, families and care partners for sustainability and reduction of recurrence rates.
- Ongoing evaluation and education of patients, care partners and families is important so psychosocial concerns can be appropriately averted or managed.
- Assessment of the patient's environment is crucial to determine whether there is appropriate equipment, capacity to participate in self-care and if the home is conducive to good hygiene practices. Knowledge of community resources that support the patient remaining at home is critical.
- If risk factors for MASD are not well managed, individuals, care partners and health-care systems will experience increased costs. Often, the focus is on the hard cost of products versus the larger picture of cost-effective care. For nosocomial-related MASD, organizations should not hold the patient accountable for funding their own products to manage situations caused by inadequate health-care resources.

Additional Wounds Canada resources, including a variety of Product Pickers and brochures, are available online at: www.woundscanada.ca/health-care-professional/resources-health-care-pros/boutique.

Care at Home Series:

- [Caring for Easily Injured Skin: Preventing and Managing Moisture-associated Skin Damage](#)
- [Caring for Your Wound at Home: Changing a Dressing](#)



BPR BRIEFS

Moisture-associated Skin Damage

Production:

Executive Editor: Sue Rosenthal
Project Editor: Heather L. Orsted
Assistant Editor: Katie Bassett
Art Direction and Layout: Robert Ketchen

Authors:

Maryse Beaumier
Barbie Ann Murray
Marc Antoine Despatis
Jérôme Patry
Christine Murphy
Susie Jin
Deirdre O'Sullivan-Drombolis

Wounds Canada
P.O. Box 35569, York Mills Plaza
North York, ON M2L 2Y4
416-485-2292
www.woundscanada.ca

© 2021 Canadian Association of Wound Care
Printed in Canada · Last updated 2021 06 07 · 1966r1E

Disclaimer: This document provides a clinical enabler for the recommendations outlined in the Best Practice Recommendations (BPRs) for the Prevention and Management of Peripheral Arterial Ulcers. For more information on a particular recommendation or a copy of the full document go to: <https://www.woundscanada.ca/docman/public/health-care-professional/bpr-workshop/1690-wc-bpr-prevention-and-management-of-peripheral-arterial-ulcers-1921e-final/file>.