

**3M** Science.  
Applied to Life.™



**Transforming  
skin integrity  
through science.**





# Why skin integrity matters.

Skin damage represents negative clinical outcomes resulting in potential complications such as infection, pain and suffering, increased risk of pressure ulcers and a poor patient/resident experience. In addition, skin damage increases the work and cost of care.

As the largest organ in the human body, skin is vulnerable to a multitude of threats, especially in healthcare settings. Protecting patients/residents from skin damage is a critical part of providing care, but as conditions become more complex, it's ever more challenging to keep skin safe.

That's why you need a partner like 3M.  
A partner who thinks differently about skin  
and is dedicated to elevating the role  
skin plays in patient/resident  
health and healing.







Exposure over time to factors such as irritants, moisture, friction, shear and adhesives can lead to skin breakdown and conditions including:

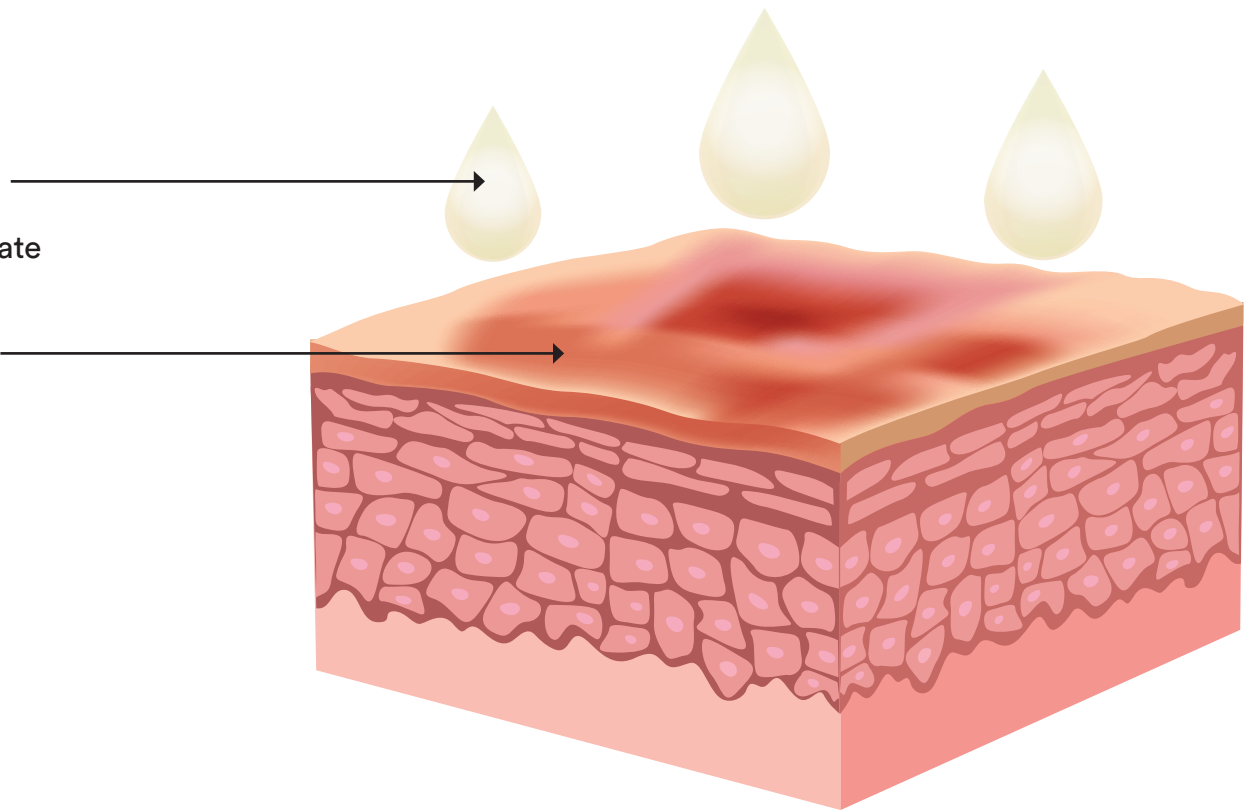
- ▶ **Moisture-Associated Skin Damage (MASD)**
- ▶ **Pressure Ulcer (PU)**
- ▶ **Medical Adhesive-Related Skin Injury (MARS)**

Not only can these conditions affect patient/resident health and healing, they can also influence care costs and facility resources. And because they have shared risk factors, it's not uncommon for multiple conditions to present simultaneously, further amplifying their impact.

# What is Moisture Associated Skin Damage (MASD)?

- ▶ Urine
- ▶ Stool
- ▶ Body fluids
- ▶ Wound exudate

Damaged skin



Moisture-associated skin damage (MASD) is a term that describes the damage that occurs when the skin is exposed to excessive moisture and/or irritants. With over-hydration, the stratum corneum (outer most layer of the epidermis) becomes more permeable, skin pH becomes more alkaline and inflammation occurs.

In addition, friction forces are increased when skin is moist or wet, so skin is more susceptible to damage.

Moisture can come from sweating, wound drainage, urine or stool, saliva, or other body fluids. But some fluids such as liquid stool, gastric or pancreatic fluid are problematic, caustic irritants that can directly damage skin.

**+ 35%**

**of all IAD cases in the acute care setting are severe.<sup>1</sup>**



# The types of MASD



## Incontinence associated dermatitis (IAD)

Incontinence-associated dermatitis (IAD) describes the skin damage associated with exposure to urine or stool. Patients with faecal incontinence +/- urinary incontinence are at higher risk of developing IAD than those with urinary incontinence alone.<sup>22</sup> Liquid stool is a powerful irritant that can easily disrupt the skin's normal barrier structure as it is rich in enzymes and has an alkaline pH. Severe inflammation follows and where epidermis is destroyed, the result is a painful injury that causes needless suffering and can interfere with recovery or quality of life.



# 66%

**of nursing home residents may have urinary and faecal incontinence.<sup>2</sup>**



## Periwound skin damage

This type of skin damage is often associated with wounds that produce large quantities of drainage, such as venous ulcers or infected wounds. Adverse skin changes can also be noted when dressings are unable to manage the volume of drainage, or not changed often enough. Once established, maceration is difficult to resolve, especially if exposure has been prolonged and skin changes are severe.



## Peristomal skin damage

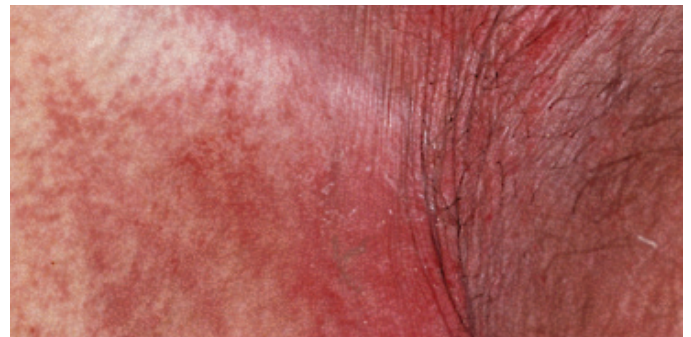
Pouch security is critical to the comfort and well-being of the patient/resident with a stoma, and maintaining intact skin is critical to pouch adherence. Problem stomas, poor stoma location and high-volume output, especially that of liquid stool, can contribute to skin injury that can rapidly progress to erosion.



# 77%

**of patients with ostomies**

**develop skin complications, with irritant dermatitis being the most common problem.<sup>3</sup>**



## Intertriginous dermatitis (ITD)

When skin is exposed to friction (from rubbing against a surface or itself), heat is generated and epidermal cells are rubbed away, triggering inflammation. If moisture is also present, frictional forces are increased. This combination of factors can result in superficial skin damage.

# What is a pressure ulcer?



A pressure ulcer is localised damage to the skin and/or underlying tissue, usually over a bony prominence (or related to a medical or other device), resulting from sustained pressure (including pressure associated with shear). The damage can be present as intact skin or an open ulcer and may be painful.<sup>4</sup>

Pressure ulcers and moisture associated skin damage (such as IAD) are clinically and pathologically different conditions, but recent evidence suggests an association between IAD and pressure ulcers.<sup>5</sup>



# 50%

**of all pressure ulcers**

occur at anatomical sites that overlay a bony prominence, such as the heel and sacrum.<sup>6,7</sup>



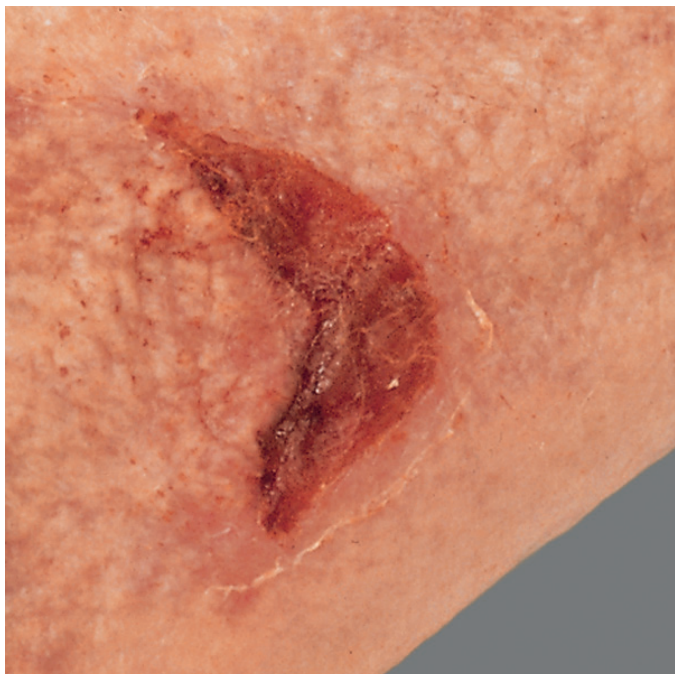
# 3x

**Patients with IAD are at an increased risk**

of superficial sacral pressure ulcers/ injuries with an odds ratio of 2.99.<sup>8</sup>



# What is Medical Adhesive Related Skin Injury (MARSI)?



Medical adhesives are a critical part of healthcare, but can cause Medical Adhesive Related Skin Injury (MARSI), a prevalent but under-recognised complication that can be serious enough to require additional treatment.

MARSI can cause pain, increase the risk of infection and delay healing, all of which can reduce a patient's/resident's quality of life.<sup>9</sup> Skin tears, skin stripping and tension blisters are common but often avoidable examples of MARSI.



 **30%**  
**of oncology patients**

developed MARSI at their PICC insertion site over the course of two weeks.<sup>10</sup>

 **55**

**treatments for MARSI**

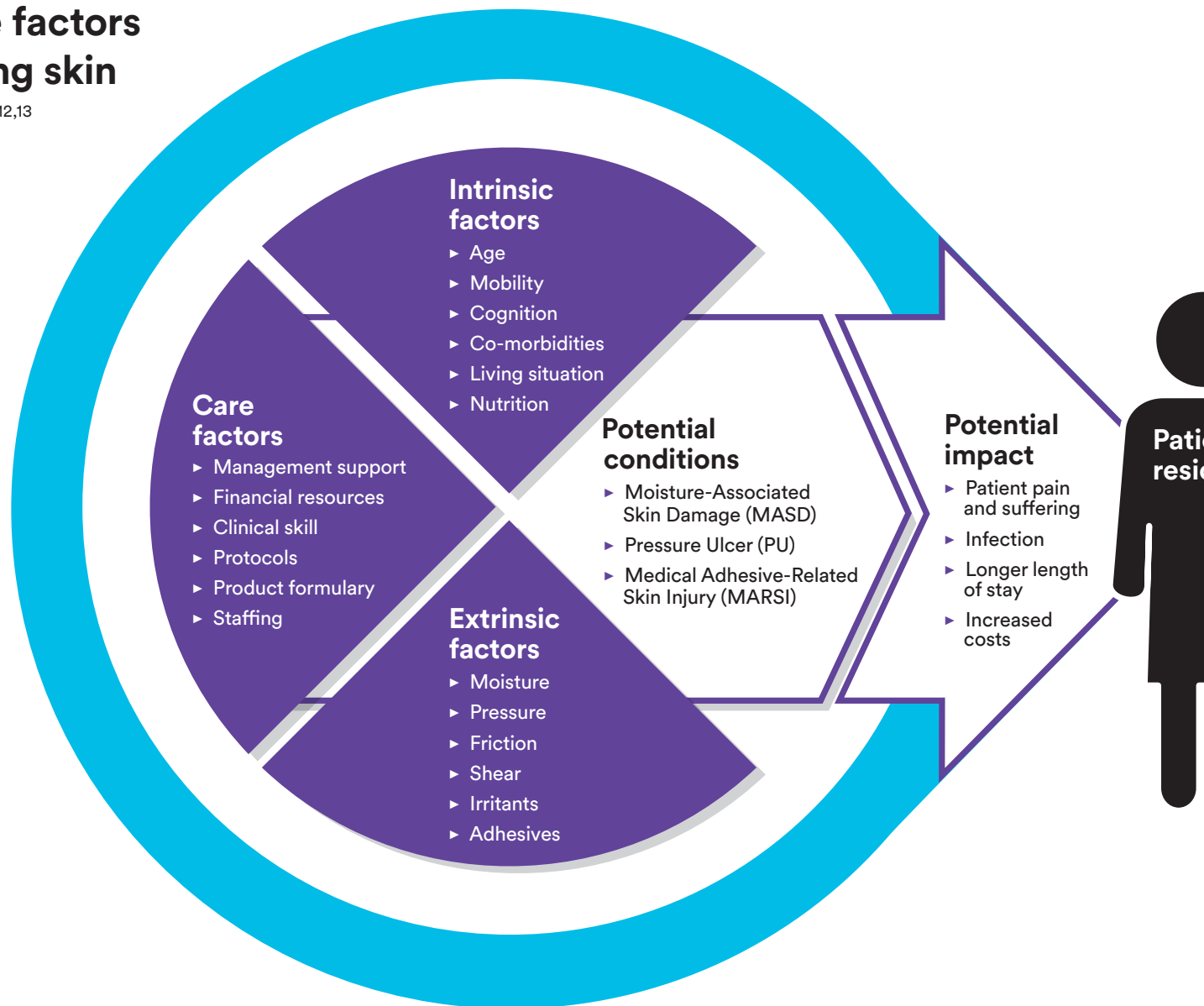
will be needed for every 100 patients who receive a medical tape application.<sup>11</sup>

# A holistic framework for skin damage.

Comprised of a set of interventions intentionally and primarily designed to prevent healthcare-acquired skin damage, skin safety principles can also be applied to management of skin injury.

The Skin Integrity Model\* proposes that multiple types of healthcare-acquired skin damage share numerous contributing and causative factors. With this in mind, it makes sense for clinicians to think beyond conditions when thinking about prevention.

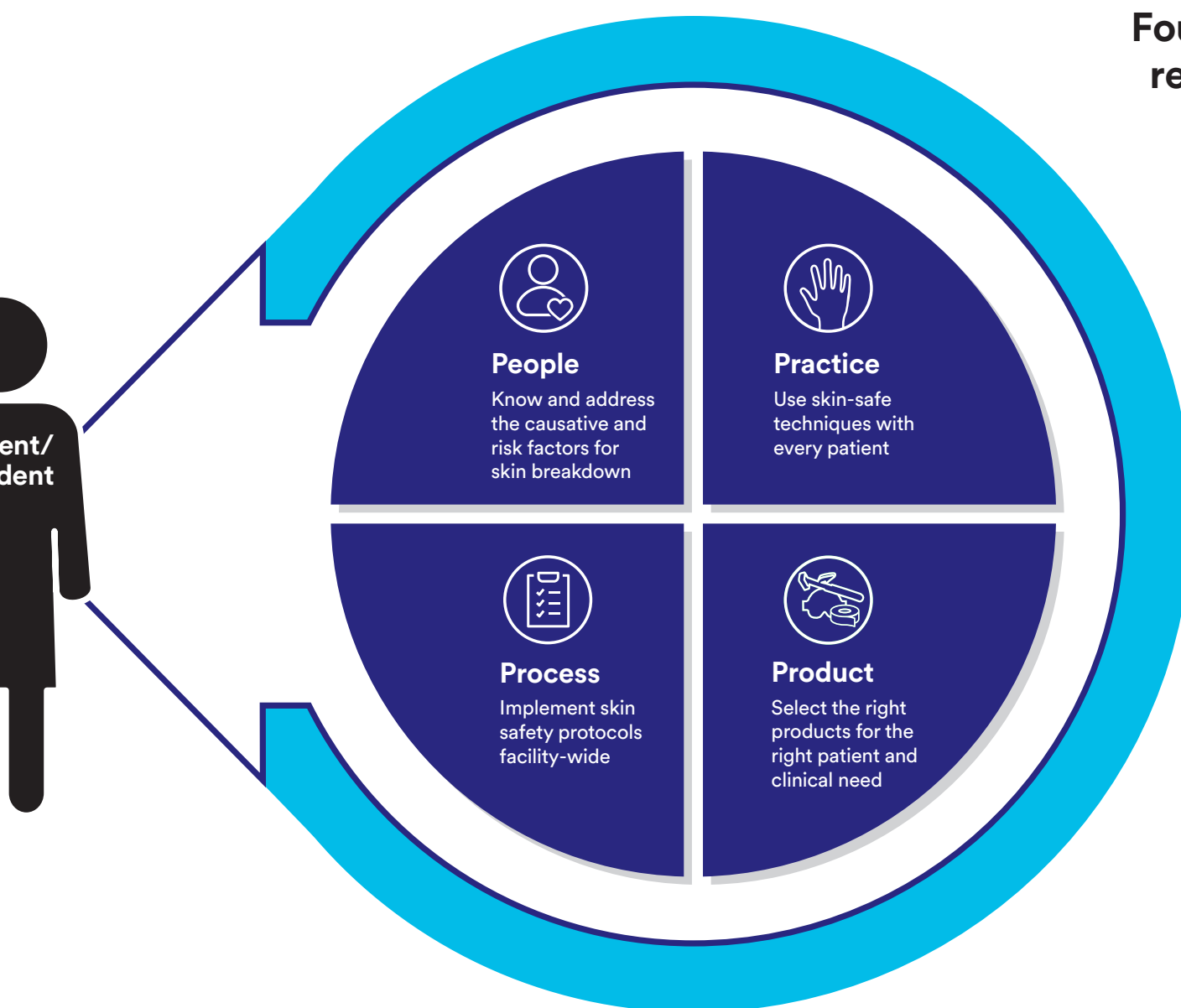
## Multiple factors impacting skin damage<sup>12,13</sup>





Preventing skin damage is the ultimate goal but it cannot be done by focusing on one aspect of care. Exploring a more holistic approach to prevention starts with protecting against the vulnerabilities in your facility, in your practice, and most importantly, in your patients/residents.

## Four keys to reduce risk



# Simplifying your skin integrity needs.



## 3M™ Cavilon™ Advanced Skin Protectant

3M™ Cavilon™ Advanced Skin Protectant is a highly durable, ultra-thin, transparent barrier which protects against the harmful effects of bodily fluids. This barrier creates a protective environment that supports healing and reduces pain associated with skin breakdown due to urine and/or faeces.<sup>14</sup>

- ▶ Application only needed twice per week<sup>14</sup>
- ▶ Attaches to wet, weepy, damaged skin<sup>14</sup>
- ▶ Single-use applicator reduces the potential for cross-contamination
- ▶ Reduces the pain of managing IAD<sup>14</sup>
- ▶ Breathable, allowing for moisture-vapour transmission that helps keep skin comfortable
- ▶ Creates an environment that supports healing<sup>15</sup>



## 3M™ Cavilon™ No Sting Barrier Film

Cavilon No Sting Barrier Film is a durable terpolymer-based alcohol-free barrier film, which forms a breathable, transparent protective coating on the skin to protect from friction, adhesive trauma and bodily fluids (such as urine and/or faeces and wound exudate).

- ▶ Does not sting, even on broken or irritated skin<sup>16</sup>
- ▶ Does not clog the linings of protective incontinence pads<sup>17</sup>
- ▶ Cost effective – provides up to 72 hours protection<sup>18</sup>
- ▶ Transparent – for easy monitoring of skin
- ▶ Compatible with skin prep solutions (i.e. chlorhexidine gluconate and povidone iodone)<sup>19</sup>
- ▶ Allows adhesion of tapes, dressings and devices<sup>19</sup>
- ▶ Allows moisture vapor transmission from the skin
- ▶ No need to remove between applications





## 3M™ Cavilon™ Durable Barrier Cream

3M™ Cavilon™ Durable Barrier Cream is a concentrated, fragrance-free moisturising barrier cream that creates an invisible, breathable barrier over the skin to moisturise and protect the skin from the irritating effects of bodily fluids, such as urine and/or faeces. Clinically proven to prevent and treat incontinence associated dermatitis (IAD).<sup>20</sup>

- ▶ Safe to use on intact and injured skin<sup>19</sup>
- ▶ Resists wash-off – eliminating the need for frequent reapplication<sup>19</sup>
- ▶ Concentrated – helps reduce product use<sup>19</sup>
- ▶ Easily absorbed – allowing visualisation of the skin<sup>19</sup>
- ▶ No need to remove between applications
- ▶ Will not block incontinence pads or transfer to bedding/clothing<sup>21</sup>
- ▶ Allows tapes and dressings to adhere<sup>19</sup>



## 3M™ Cavilon™ Continence Care Wipes

## 3M™ Cavilon™ Bathing & Cleansing Wipes

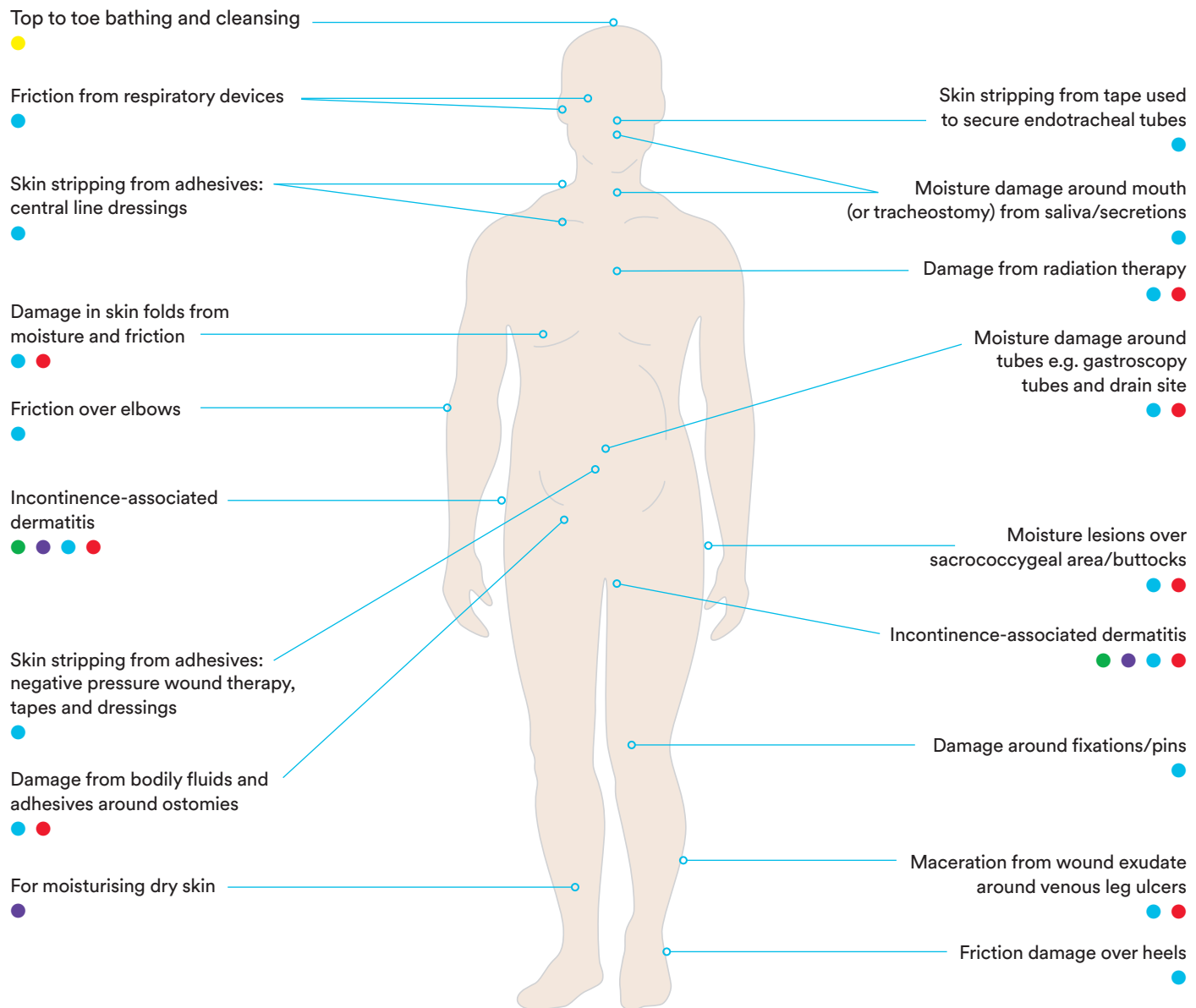
Cavilon Wipes provide your patients with an optimal way to feel both comfortable, clean and protected. You can gently wash and condition each part of the body and give protection where necessary with a low friction medical wipe. At the same time you will reduce the risk of cross contamination.

- ▶ pH skin-neutral
- ▶ Free from perfumes, soaps, alcohol and colouring agents
- ▶ Preservative system does not contain parabens
- ▶ Wash each part of the body with a separate clean wipe
- ▶ Condition your patients' skin with moisturisers
- ▶ Produced in a clean room environment

### Cavilon Continence Care Wipes only:

- ▶ Contain 3% dimethicone providing an effective barrier from moisture and body fluids
- ▶ Transparent barrier makes regular skin assessments easy

# Versatile solutions to manage and prevent skin breakdown.
























## Key

- Blue** 3M™ Caviol™ No Sting Barrier Film To prevent and treat skin damage from **Friction**, **Adhesive trauma** and **Bodily fluids**
- Purple** 3M™ Caviol™ Durable Barrier Cream For incontinence skin care and moisturising dry skin
- Red** 3M™ Caviol™ Advanced Skin Protectant For treatment of moderate to severe skin damage and protection of skin at high risk of breakdown
- Yellow** 3M™ Caviol™ Bathing & Cleansing Wipes For top to toe bathing and cleansing
- Green** 3M™ Caviol™ Continence Care Wipes To cleanse, protect and restore skin for incontinent skin care



# The optimal solution for skin protection.

## Incontinence Associated Dermatitis (IAD) skin care pathway

	Clinical presentation**	Clean the skin	Protect the skin	When to use	How much to use
Step down	<b>Prevention</b> No redness and skin intact (at risk) 	Cleanse skin with a pH balanced no-rinse liquid skin cleanser or <sup>1</sup> 	3M™ Cavilon™ Durable Barrier Cream <sup>3</sup>  3M™ Cavilon™ Continence Care Wipe <sup>1</sup> 	 Day and night	 Pea-size increments
	<b>Management</b> Red* but skin intact (mild) 	Cleanse skin with a pH balanced no-rinse liquid skin cleanser or <sup>1</sup> 	3M™ Cavilon™ Durable Barrier Cream 	 Day and night	 Pea-size increments
Step up	<b>Management</b> Red* with skin breakdown (moderate to severe) 	Cleanse the skin with a pH balanced no-rinse liquid skin cleanser or plain water <sup>2</sup>	 3M™ Cavilon™ Advanced Skin Protectant	 2 x per week	 Apply an even coat  Allow to dry for at least 30 seconds or touch dry
	<b>High risk</b> High risk of incontinence associated dermatitis (IAD) development e.g. liquid stool or infective diarrhoea 	Cleanse the skin with a pH balanced no-rinse liquid skin cleanser or plain water <sup>2</sup>	 3M™ Cavilon™ Advanced Skin Protectant	 2 x per week	 Apply an even coat  Allow to dry for at least 30 seconds or touch dry

<sup>1</sup> Where skin cleansers are not available, cleansing with a gentle pH balanced soap and water is an option. If a gentle soap is not available, cleansing with plain water is preferred. (Ref Bockman D *et al.* Proceedings of the Global IAD Expert Panel. Incontinence associated dermatitis: moving prevention forward. *Wounds International* 2015.




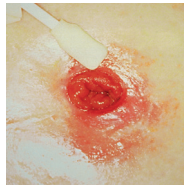


<sup>2</sup> Do not use Cavilon Advanced Skin Protectant in combination with any products containing a barrier (e.g. dimethicone).

<sup>3</sup> If using the Cavilon Continence Care Wipes, use additional skin protectant (Cavilon Barrier Cream) if there is worsening erythema or increased risk of skin breakdown.

\*Or paler, darker, purple, dark red or yellow in patients with darker skin tones.

\*\*IAD Severity Categorisation Tool taken from Bockman D *et al.* Proceedings of the Global IAD Expert Panel. Incontinence-associated dermatitis: moving prevention forward. *Wounds International* 2015.

## Skin protection and treatment pathway

Clinical presentation**	What to use	When to use	How much to use
 Peri-wound protection	 3M™ Cavilon™ No Sting Barrier Film	At each dressing, tape or appliance change  *** ITD: Apply every 24 hours. Frequency can be reduced to 48–72 hours in line with skin improvement	 Apply an even coat
 Peri-stomal/peri-tub protection			
 MARSI prevention			
 Intertriginous dermatitis (ITD)***			

MARSI = Medical Adhesive-Related Skin Injury

Consider the use of 3M™ Cavilon™ Advanced Skin Protectant for moderate to severe skin damage or skin at high risk of breakdown.

# Proven solutions with the power to make a positive difference.



## Ordering information

### Hospital

3M code	Name	Description	Size	Box/ Pack qty	Boxes/ Case	NPC code
5050G	3M™ CAVILON™ Advanced Skin Protectant	Foam applicator (sterile)	2.7ml	20	1	ELY801
3343E	3M™ CAVILON™ No Sting Barrier Film	Foam applicator (sterile)	1ml	25	4	ELY038
3344E	3M™ CAVILON™ No Sting Barrier Film	Wipe (sterile)	1ml	30	6	ELY190
3345E	3M™ CAVILON™ No Sting Barrier Film	Foam applicator (sterile)	3ml	25	4	ELY039
3346E	3M™ CAVILON™ No Sting Barrier Film	Spray bottle (pump action)	28ml	12	1	ELY040
3392GS	3M™ CAVILON™ Durable Barrier Cream	Sachet	2g	20	12	ELY569
3391G	3M™ CAVILON™ Durable Barrier Cream	Tube	28g	1	12	ELY571
3392G	3M™ CAVILON™ Durable Barrier Cream	Tube	92g	1	12	ELY568
9274	3M™ CAVILON™ Continence Care Wipes	Wipe	20x30cm	8	12	ELY566
9272	3M™ CAVILON™ Bathing & Cleansing Wipes	Wipe	20x30cm	8	12	

### Community

3M code	Name	Description	Size	Box/ Pack qty	Boxes/ Case	PIP code
3343P	3M™ CAVILON™ No Sting Barrier Film	Foam applicator (sterile)	1ml	5	20	252-8941
3344E	3M™ CAVILON™ No Sting Barrier Film	Wipe (sterile)	1ml	30	6	317-5692
3345P	3M™ CAVILON™ No Sting Barrier Film	Foam applicator (sterile)	3ml	5	20	252-8958
3346P	3M™ CAVILON™ No Sting Barrier Film	Spray bottle (pump action)	28ml	1	12	252-8966
3392GS	3M™ CAVILON™ Durable Barrier Cream	Sachet	2g	20	12	288-2272
3391G	3M™ CAVILON™ Durable Barrier Cream	Tube	28g	1	12	301-7480
3392G	3M™ CAVILON™ Durable Barrier Cream	Tube	92g	1	12	277-1079



#### References

- 1 Gray M, Bartos S. Incontinence Associated Dermatitis in the Acute Care Setting: A Prospective Multi-site Epidemiologic Study. Presented at the 23rd Annual Meeting of the Wound Healing Society. 2013.
- 2 Excellence in Continence Care: Practical guidance for commissioners and leaders in health and social care, NHS England, June 2018.
- 3 Colwell JC, McNichol L, Boarini J. North America Wound, Ostomy, and Continence and Enterostomal Therapy Nurses Current Ostomy Care Practice Related to Peristomal Skin Issues *J Wound Ostomy Continence Nurs.* 2017; 44(3): 257–261.
- 4 Pressure ulcers: revised definition and measurement. Summary and recommendations, NHSI, June 2018.
- 5 Beeckman D. *et al.* A systematic review and meta-analysis of incontinence-associated dermatitis. Incontinence and moisture as risk factors for pressure ulcer development. *Research in Nursing & Health.* 2014.
- 6 National Pressure Ulcer Advisory Panel, European Pressure Ulcer Advisory Panel and Pan Pacific Pressure Injury Alliance. Prevention and Treatment of Pressure Ulcers: Clinical Practice Guideline. Emily Haesler (Ed.). Cambridge Media: Osborne Park, Western Australia; 2014.
- 7 VanGuilder, C., MacFarlane, G. D., & Meyer, S. (2008). Results of Nine International Pressure Ulcer Prevalence Surveys: 1989 to 2005. *Ostomy Wound Management*, 54(2).
- 8 Demarre L *et al.* Factors predicting the development of pressure ulcers in an at-risk population who receive standardized preventive care: secondary analyses of a multicentre randomised controlled trial. *J Adv Nurs.* 2015;71(2):391–403.
- 9 Cutting KF. Impact of adhesive surgical tape and wound dressing on the skin with reference to skin stripping. *J Wound Care* 2008;157-158,160–162.
- 10 Zhao H, *et al.* Prevalence of medical adhesive-related skin injury at peripherally inserted central catheter insertion site in oncology patients. *J Vasc Access.* 2017 Nov 8;0. doi: 10.5301/jva.5000805.
- 11 Maene, B. Hidden costs of medical tape-induced skin injuries. *Wounds UK.* 2013; 9(1), 46–50.
- 12 Campbell J, Coyer F, Osborne S. The Skin Safety Model: Reconceptualizing Skin Vulnerability in Older Patients. *J. of Nurs Scholarship.* 2016; 48(1):14–22.
- 13 McNichol L, Lund C, Rosen T, Gray M: Medical adhesives and patient safety: state of the science: consensus statements for the assessment, prevention, and treatment of adhesive-related skin injuries. *Orthop Nurs.* 2013 Sep-Oct;32(5):267–81.
- 14 Brennan, Mary R.; Milne, Catherine T.; Agrell-Kann, Marie; Ekholm, Bruce P. Clinical Evaluation of a Skin Protectant for the Management of Incontinence Associated Dermatitis: An Open-Label, Nonrandomized, Prospective Study. *J of Wound, Ostomy & Continence Nursing.* 2017. 44(2):172–180.
- 15 3M data on file. EM-05-01 3924.
- 16 Arrowsmith, M, Schuren J, (2005) Laboratory Studies and general characteristics of Cavilon skin care products, 3M data on file.
- 17 Zehrer C, Newman D, Grove G. (2005) Assessment of Diaper - Clogging Potential of Petrolatum Moisture Barriers. *Ostomy Wound Management* 51 (12) 54–58.
- 18 Issberner K, Schuren J, A Comparative study of the Skin Protectant performance of five Barrier Films: 3M Germany Laboratory, Neuss, Germany, 2004.
- 19 3M Data on file.
- 20 Bale S, Tebble N, Jones V, Price P. (2004) The benefits of implementing a new skin care protocol in nursing homes. *Journal of Tissue Viability* 2004; 14(2)44–50.
- 21 Hart J. (2002) Assessment of the incontinence pad blocking potential of Cavilon DBC compared with Sudocrem and Zinc and Castor oil. *Nursing Scotland* 2002, Issue July/August.
- 22 Beeckman D *et al.* Proceedings of the Global IAD Expert Panel. Incontinence associated dermatitis: moving prevention forward. *Wounds International* 2015.

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