

## Pressure ulcer management

## how to guide

Pressure ulcers remain a common problem and affect the quality of life of many patients. The majority of pressure ulcers are avoidable and successful prevention will depend on removing or modifying the cause. This 'how to' guide looks at how to identify and manage pressure ulcers correctly in any healthcare setting and the importance of education to improve outcomes. The ultimate goal of pressure ulcer management is prevention.

### WHO IS AT RISK OF A PRESSURE ULCER?

Pressure ulcers can affect patients in every healthcare setting and are seen in all age groups (Wilson, 2007).

**Intrinsic factors** include extreme age, limited mobility, vascular disease, sensory impairment, malnutrition, dehydration and a previous history of pressure damage.

Even fit, healthy people who are limited to bed rest or restricted patterns of chair sitting can develop pressure ulcers. This is because damage can occur at any point where the tissues are subjected to pressure, shearing or frictional forces (**extrinsic factors**, see Box 1). This may be high pressure over a short period of time or low pressure applied continually over a long period of time (Int Review, 2010).

#### Other factors

The temperature and moisture levels of the environment at or near the skin surface — **the microclimate** — may also affect the risk of pressure ulcer development (Clark and Black, 2011).

In addition, medications that induce sedation and/or anaesthesia and medical/surgical interventions that prevent or reduce the ability of the patient to move increase the risk of tissue damage.

### When are pressure ulcers unavoidable?

Pressure ulcers are often seen in end-of-life patients and may be unavoidable due to skin changes and the inability to maintain nutrition and hydration (Wilson, 2012). Care often focuses on comfort measures.

#### BOX 1: PRESSURE, FRICTION AND SHEAR

**Pressure** is the amount of force applied at right angles to the tissues between the bone or a hard object such as a catheter and the supporting surface. Patients at highest risk from pressure damage are those who are not able to move in a bed or chair unaided.

**Friction** is a force that is created whenever two surfaces move or try to move across one another. This may be when a person moves or is moved across the bed or cushion, causing the outer layers of the skin to be subject to abrasion.

**Shear** is an internal force caused when two adjacent surfaces slide across each other, which results in twisting and tearing of the underlying blood vessels and leads to a restricted blood supply to the tissues.

Other situations include where patients have capacity but refuse care, do not have mental capacity and are unable to co-operate, where patients cannot be turned for medical reasons or where an acute/critical event occurs affecting the person's ability to reposition (eg following a fall due to an unexpected collapse).

### WHERE DO PRESSURE ULCERS OCCUR?

Most pressure ulcers appear over the major weight-bearing parts of the body. The **sacrum** and the **heels** are the two most common sites of ulcer development (Wilson, 2007). This is because the thin layer of subcutaneous tissue between the skin and the bone provides minimal protection from the applied forces of **pressure**, **shear** and **friction**. Also there is often a reduced blood supply to the extremity due to comorbidities that compromise the vascular system (eg diabetes). Pressure ulcers may also occur where devices such as tubes, masks and catheters press into the body.

### PRINCIPLES OF MANAGEMENT

When a pressure ulcer occurs, it is important to accurately assess the individual and the wound. Initial assessment should take place within six hours of the first episode of care and include assessment and documentation of:

- **Category**
- **Location**
- **Size and shape**
- **Wound bed condition**
- **Exudate level and consistency**
- **Pain and malodour**
- **Periwound skin condition**
- **Signs of infection.**

When assessing the pressure ulcer it is important to use a pressure ulcer grading tool to measure the severity of the injury objectively. The European Pressure Ulcer Advisory Panel (EPUAP) and the National Pressure Ulcer Advisory Panel (NPUAP) recommend the use of a basic classification system comprising four categories or stages based on the severity of tissue damage (EPUAP/NPUAP, 2009).

Pressure ulcers can have a negative impact on wellbeing and quality of life. It is essential to involve the patient and his/her family in ensuring that individual problems and concerns are addressed (Int Consensus, 2012).

The treatment of pressure ulcers involves ensuring that all the contributory causes have been addressed. The main aims of pressure ulcer management are to:

- Reduce pressure, shear and friction using a suitable support surface
- Manage the skin microclimate
- Minimise the risk of infection
- Create an optimal wound healing environment
- Improve patient comfort.

When managing a pressure ulcer it is important to address the following areas:

**Skin:**

- Keep the skin clean, dry and well hydrated
- Regularly inspect for early signs of damage.

**Surface:**

- Select pressure redistribution mattress and/or cushion based on patient's needs and comfort
- Reassess daily
- Ensure the equipment is functioning correctly.

**Movement:**

- Reposition the patient at regular intervals — use a repositioning chart. Consider 30° tilt to position the patient using pillows below the neck, shoulders, back and legs
- Encourage early mobility and regular movement to relieve pressure over bony prominences and improve circulation — time spent on the damaged area should be kept to a minimum.

**Incontinence/moisture:**

- Use urinary or faecal management systems as appropriate
- Use continence products when required
- Manage skin temperature and humidity to reduce sweat
- Keep clean and dry.

**Nutrition/hydration:**

- Assess nutrition status
- Implement prescribed diet/nutritional supplement
- Keep well hydrated.

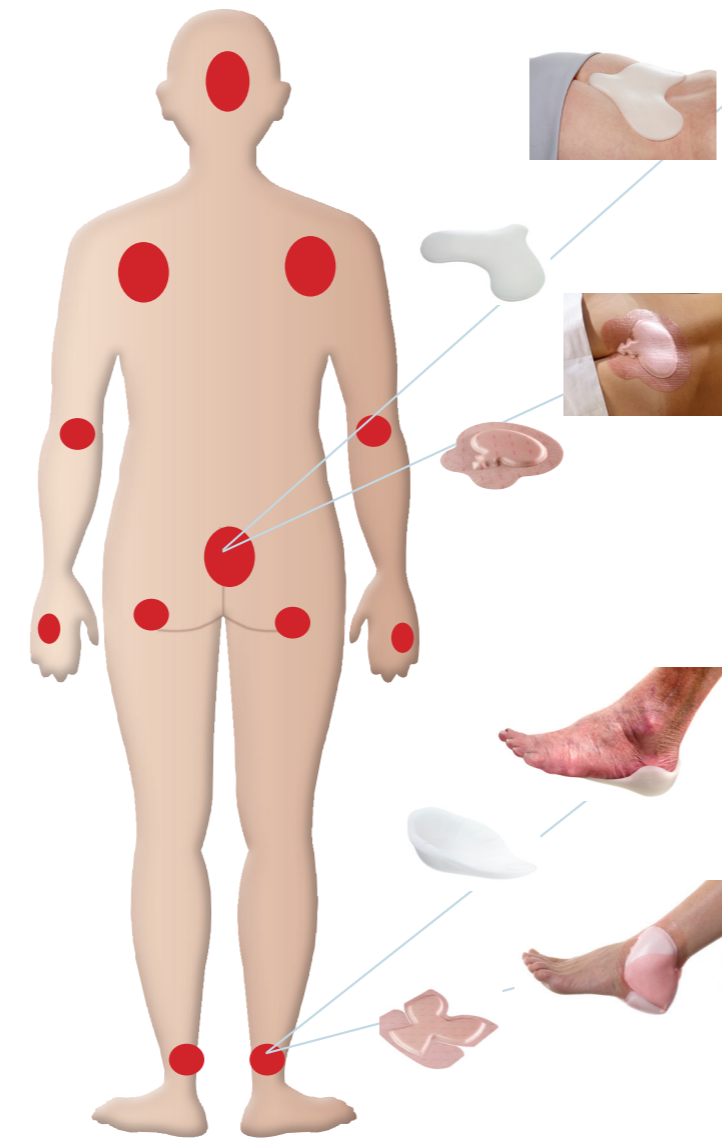
**Other considerations:**

- Pressure ulcers are often painful and distressing for the patient — ensure adequate pain relief, especially during dressing changes.

**Documentation**

It is important to assess the patient regularly and to record any observations in the patient's records. Document all pressure ulcers and report pressure ulcers graded as Category 2 or above following local reporting procedures. Do not reverse grade a pressure ulcer. If the wound fails to heal or there is sudden deterioration it is important to reassess both the patient and the pressure ulcer to identify possible causes. **Know when to refer for specialist advice and update the care plan as appropriate.**

Areas at risk of pressure damage: the most common sites are the sacrum and the heels



**LOCATION?**

Inspect skin for pressure ulcer damage:

**SACRUM**

To protect unbroken, intact skin consider:

- A dermal pad (eg ADERMA<sup>®</sup> sacrum/ankle wrap). The pad can be held in place using the patient's own underwear or continence pant. Remove regularly to inspect the skin
- Appropriate pH balanced cleansers and barrier cream to prevent skin breakdown due to incontinence
- Urinary or faecal management systems to reduce risk of contact from these substances

To manage partial to full-thickness pressure damage consider:

- An anatomically shaped sacral wound dressing (eg ALLEVYN<sup>®</sup> Sacrum) or consider a soft silicone border dressing for fragile skin (ALLEVYN<sup>®</sup> Gentle Border Sacrum)
- A barrier film to protect against periwound skin maceration, together with urinary and faecal management systems

**HEELS**

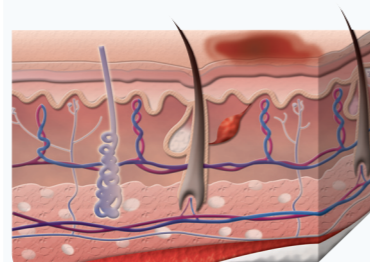
To protect unbroken, intact skin consider:

- A dermal pad (eg ADERMA<sup>®</sup> Heels). Hold in place using a stockinette, tubular bandage or sock. This should not impede movement and be removed regularly to inspect the skin

To manage pressure ulcers with partial to full-thickness pressure damage consider:

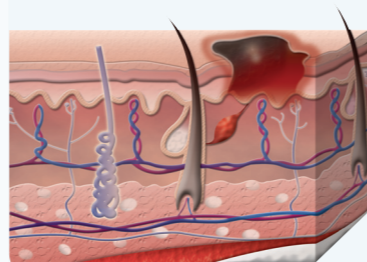
- An anatomically shaped heel dressing (eg ALLEVYN<sup>®</sup> Heel)
- A soft silicone border dressing (eg ALLEVYN<sup>®</sup> Gentle Border Heel) for fragile skin
- Check wound regularly to ensure there is no further pressure damage. Continue to offload the heels using specialist equipment
- Where necrotic tissue is present, it is often recommended to leave this *in-situ* and allow autolysis to occur. Offloading is a priority

**INTACT skin**



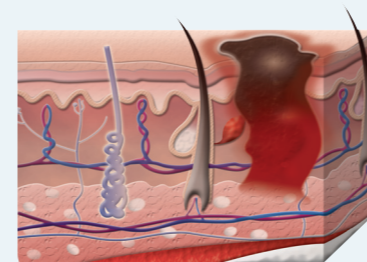
**Category 1.** Non-blanchable redness of intact skin usually over a bony prominence. Discoloration of the skin, warmth, oedema, hardness or pain compared to adjacent tissue may also be present. Darkly pigmented skin may not have visible blanching. May include pain/itching.

**SUPERFICIAL**

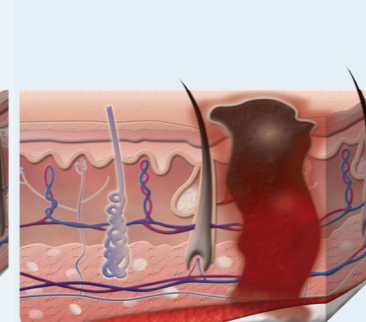


**Category 2.** Partial thickness skin loss or blister. Presents as a shiny or dry shallow ulcer without slough or bruising (bruising would indicate deep tissue injury). Check for moisture lesion.

**DEEP**



**Category 3.** Full-thickness tissue loss. Subcutaneous fat may be visible but bone, tendon or muscle are not exposed. Slough may be present but does not obscure the depth of tissue loss. May include undermining and tunnelling.



**Category 4.** Full-thickness tissue loss with bone, tendon or muscle visible. Slough or eschar may be present. Often includes undermining and tunnelling.

**Note:** The depth of a Category 3 or 4 pressure ulcer varies by anatomical location. The bridge of the nose, ear, head and ankle do not have subcutaneous (adipose) tissue and pressure ulcers can be shallow. In contrast, areas of significant adiposity can develop extremely deep pressure ulcers (EPUAP/NPUAP, 2009).

**LOCAL WOUND MANAGEMENT CONSIDERATIONS**

Treatment decisions should be made on the assessment of the pressure ulcer, skin inspection, level of risk, treatment objective and patient preference. **Remember care of the local wound environment is not always the primary objective.**

**Removal of dead tissue**

Dead or necrotic tissue can increase the risk of bacterial infection and delay wound healing. The method of debridement selected should be the most effective for the patient, based on the amount of tissue to be removed and how quickly this should be done (Vowden and Vowden, 2011). Where there is stable eschar on the heels this does not always need to be removed as it provides a natural cover. Where the patient is close to end of life, removal of necrosis may also not be the best option especially if it is dry and not causing them pain.

**Wound cleansing**

The pressure ulcer and surrounding skin may be cleansed at each dressing change to remove surface debris, bacteria and contaminants. A wound irrigation solution containing a surfactant may be suitable in pressure ulcers that present with the classical signs of infection or if a biofilm is suspected.

**Cavity wounds**

All cavity wounds should be explored to ensure there are no pockets or sinuses tracking from the cavity.

**Surrounding skin**

Wet skin is more vulnerable to skin damage. This may be due to excessive sweating, exudate or urinary and/or faecal incontinence which can alter the pH of the skin around the peri-anal area. For skin at risk of breakdown or for Category 1 pressure ulcers, a barrier cream or film may be used to reduce shear forces and minimise the risk of contamination by micro-organisms. For patients with fragile or sensitive skin consider using a non-adherent dressing and secure when retention is a priority.

**Do's and Don'ts:**

- ✓ Keep skin clean and dry
- ✗ Rub or massage vulnerable skin
- ✗ Use excessive amounts of skin cream
- ✓ Inspect at-risk skin regularly. This means removing clothing particularly anti-embolic stockings
- ✓ Involve the patient and his/her family in their care.

It is important to differentiate between a **moisture lesion** (related to the effects of incontinence on the skin surrounding the peri-anal area and not normally associated with a bony prominence) and a **pressure ulcer**. Confusion can lead to suboptimal care and inappropriate use of resources.

Pressure ulcers may take a long time to heal. Factors that may delay healing include poor nutrition, poor vascular supply, age and other comorbidities such as diabetes. **Risk assessment is ongoing and patients should be reviewed at least weekly (NICE, 2005). As part of the assessment, it is important to check the patient's ability to reposition without help.**

## DRESSING SELECTION

Wound dressings can help to protect a wound, manage exudate and improve patient comfort. Dressings should not be used to reduce pressure over vulnerable areas.

It is important that dressings are used appropriately as too frequent dressing changes can cause skin stripping, particularly in patients with fragile skin. Appropriate dressings include hydrocolloids, hydrogels, foams, films, alginates and soft silicones. The choice of dressing is based upon assessment of the ulcer and patient. **In the presence of clinical signs of local or systemic infection, consider antimicrobial or antibiotic therapy.**

### Products for the sacrum

There are a number of dressings available that are shaped to fit the sacral area and around the cleft. These are often designed to have tapered edges to prevent rucking or rolling of the dressing on movement and can stay in place for up to five days.

### Products for the heel

Anatomically shaped dressings are designed to fit gently around the back of the foot, providing protection and improved comfort. Dressings should be used in conjunction with suitable offloading devices such as suspension boots, foot protectors and braces.

When selecting a dressing it is important to consider:

- Clinical effectiveness
- Ease of use/removal
- Patient comfort/ability to fit with everyday activities
- Impact on mobility
- Cost and availability.

**Dermal gel pads may be used on unbroken skin to reduce risk of pressure damage over vulnerable areas.**

## REDUCING PRESSURE ULCER INCIDENCE

Both CREST (1998) and NICE (2005) have issued guidelines on pressure ulcer prevention and treatment in the UK and Ireland. The EPUAP/NPUAP guidelines have been updated and are now more widely used in practice (2009).

To change the perception that pressure ulcers are inevitable, there needs to be increased awareness across the healthcare and community settings. Preventing pressure ulcers is an opportunity to reduce harm to patients and health care costs. Many areas are now setting targets of eliminating all avoidable Category 3 and 4 pressure ulcers with some regions having ambitions to prevent all Category 2, 3 and 4 pressure ulcers. (NHS Midlands and East, 2012).

**For some patients, pressure ulcers may be inevitable even with prevention measures and it is important ensure that everything is done to prevent minor damage from becoming a major ulcer.**

**All staff involved in patient care should have the appropriate knowledge, skills and resources to reduce the incidence of pressure ulcers in patients admitted to care.**

### Role of education in managing pressure ulcers

Education of clinical staff is important in ensuring that all members of the interdisciplinary team understand how to prevent and manage pressure ulcers effectively:

- Educate staff to ensure correct use of pressure-relieving equipment
- Understand importance of risk assessment tools to identify vulnerable patients
- Educate patients, carers and family members on the effective management of pressure ulcers
- Develop patient information leaflets and educational materials.

### References

- Beldon P (2006) Pressure ulcers: prevention and management. *Wound Essentials* 1: 68-81.
- The Bedfordshire and Hertfordshire Tissue Viability Nurses Forum (2010) Regional round up, definition of unavoidable. *Wounds UK* 6(4): 198
- Clark M, Black J (2011) Skin IQ™ Microclimate Made Easy. *Wounds International* 2(2). Available from [www.woundsinternational.com](http://www.woundsinternational.com)
- CREST (1998) Guidelines for the Prevention and Management of Pressure Sores. Recommendations for Practice. Clinical Resource Efficiency Support Team (CREST), Belfast, Northern Ireland ([www.gain-ni.org/Publications/Guidelines/wound-management-pressure-sores.pdf](http://www.gain-ni.org/Publications/Guidelines/wound-management-pressure-sores.pdf))
- EPUAP / NPUAP (2009) Treatment of pressure ulcers: Quick Reference Guide. [http://www.epuap.org/guidelines/Final\\_Quick\\_Treatment.pdf](http://www.epuap.org/guidelines/Final_Quick_Treatment.pdf)
- International Review (2010) *Pressure ulcer prevention, pressure, shear, friction and microclimate in context: A consensus document*. London: Wounds International. Available from: [www.woundsinternational.com](http://www.woundsinternational.com)
- International Consensus (2012) *Optimising wellbeing in people living with a wound*. London: Wounds International. Available from [www.woundsinternational.com](http://www.woundsinternational.com)
- National Institute for Health and Clinical Excellence (2005) The prevention and treatment of pressure ulcers. Clinical Guideline 29. Available from <http://www.nice.org.uk/nicemedia/live/10972/29883/29883.pdf>
- NHS Midlands and East (2012) Pressure ulcers. [www.stopthepressure.com](http://www.stopthepressure.com)
- Vowden K, Vowden P (2011) Debridement made easy. *Wounds UK* 7(4).
- Wilson M (2010) A brief guide to pressure ulcer assessment. *Wound Essentials* 5: 12-20.
- Wilson M (2012) Managing patients vulnerable to pressure ulceration. *Wounds Essentials* 7(1):45-8.

### Further reading

- International Guidelines (2009) *Pressure ulcer prevention: prevalence and incidence in context*. London: MEP Ltd, 2009. Available from [www.woundsinternational.com](http://www.woundsinternational.com)
- RCN clinical practice guidelines: recommendations (2001). *Pressure ulcer risk assessment*. Available from: [http://www.rcn.org.uk/\\_\\_data/assets/pdf\\_file/0003/78501/001252.pdf](http://www.rcn.org.uk/__data/assets/pdf_file/0003/78501/001252.pdf)

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### KEY LEARNING POINTS

1. The majority of pressure ulcers are preventable
2. Preventative care must be initiated at the earliest opportunity
3. There are a range of products available to both prevent and manage pressure ulcers
4. There are a number of quality initiatives aimed at reducing pressure ulcer incidence

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