

# A BRIEF GUIDE TO: PRESSURE ULCER ASSESSMENT

Pressure ulcers can affect patients in every healthcare setting and are seen in all age groups. Not only are they costly in terms of patients' quality of life, but they also place a huge drain on health service resources. This article looks at how nurses can identify the presence of a pressure ulcer and then decide on an appropriate management regimen.

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Almost 150 years ago Florence Nightingale stated that a vast deal of suffering in hospitals resulted from avoidable causes (Bailey, 1997). Unfortunately, one of the reasons that this statement may still be considered relevant in 21st century health care is the development of pressure ulceration.

Anthony et al (2000) suggest that pressure ulcers are preventable and therefore an avoidable cause of increased problems to patients as well as the NHS. Hibbs (1998) also demonstrates that 95% of pressure ulcers are preventable, with the remaining 5% resulting from factors occurring before the patient's admission.

It should be remembered, however that the continued prevalence of pressure ulcers may be linked to an increasing elderly population, with some ulcers developing due to extreme age and multiple comorbidities. In this case, they should not be described as avoidable.

Pressure ulcers are reported across all healthcare settings and affect all age groups. They

are costly in terms of quality of life and health service resources (European Pressure Ulcer Advisory Panel [EPUAP], 2009). Bennett et al (2004) estimate the total cost of treating pressure ulcers in the UK to be between £1.4–32.1 million per year. The cost to the individual patient, however may be considered as immeasurable when factoring in the reduced quality of life, changing roles, altered lifestyles, and personal financial burden. Prevention of pressure ulceration must, therefore be high on every healthcare practitioner's agenda.

## What are pressure ulcers?

Pressure ulcers are localised damage to the skin and/or underlying tissues. They are usually caused by sustained pressure at the bone and soft tissue interface. Pressure ulceration can range in severity from non-blanching erythema (tissue redness that does not turn white when pressed with a finger) of intact skin, to deep tissue loss with muscle, tendon and/or bone involvement (EPUAP, 2009).

## What causes pressure ulcers?

The precise factors that predispose an individual to risk of pressure ulceration are not always clear and it is an area that needs more research

(Moore, 2005). It is generally agreed, however that pressure ulcers are caused by both extrinsic and intrinsic factors. The intrinsic factors include (Bonomini, 2003; National Institute for Health and Clinical Excellence (NICE), 2005):

- » Immobility
- » Sensory impairment
- » Age
- » Chronic illness.

Extrinsic factors include (EPUAP, 2009):

- » Shear forces
- » Friction
- » Pressure.

## Pressure ulcer prevention

Without holistic assessment individuals can be placed at increased risk. An inappropriate assessment means that the wrong interventions may be implemented and valuable resources may be wasted or used incorrectly (Moore, 2005). Equally, an inadequate or poorly performed assessment can result in an under-estimation of the risks facing the patient, which in turn may lead to pressure ulcer development.

To prevent unnecessary or inappropriate interventions being used, which could encourage the development of pressure ulcers, the use of assessment tools are

advocated within NHS trusts, including Waterlow, Norton and Braden risk assessment scales. These tools are supported by the Department of Health, the RCN, and NICE (NICE, 2005).

Such tools act as a prompt, allowing nurses to recognise the risk of pressure ulcer development by identifying a range of factors (such as nutritional status, age, continence, tissue type etc), which are known to influence the development of pressure ulceration.

It is important that when completing any formal risk assessment tool the nurse also uses her clinical judgement — this will ensure the tool is undertaken adequately (Norton et al, 1975). For example, the risk assessment tool may be completed with a low score, however the nurse may feel that the patient has a greater risk of pressure ulceration due to confusion and/or underlying non-recorded pathologies.

It is generally considered that completing risk assessment tools is the sole responsibility of registered nurses. It could be argued, however that with adequate training these tools can be completed by any member of the multidisciplinary team (Rycroft et al, 2000).

All patients should undergo a pressure ulcer risk assessment within six hours of admission into an acute area of care. This should be regularly reviewed throughout their stay (NICE, 2005). This will help to identify those individuals who are more susceptible to pressure ulceration at the earliest stage.

## Risk assessment tools

### Pain

Assessing the patient's pain is considered to be the most important element of a pressure ulcer risk assessment. This does not just mean the pain from an ulcer site itself, but also any underlying pain that may have an impact on wound healing.

Any pain experienced previously may also affect how the individual's ulcer site may be approached and it is important that the nurse enquires about this. For example, if the patient seems tense and is recoiling even before the dressing is touched, a previous negative experience may be the cause of this. Pre-dressing change analgesia may be required. In some circumstances simply providing an explanation and taking the time to help the person relax will suffice.

To aid assessment, a pain scale is often chosen to gain some understanding of the individual's level of pain. Pain assessment tools are usually based on a sliding scale of 1–10, with 1 representing the least pain and 10 representing the worst. Many are tailored for specific patient groups, i.e. smiley/sad faces for children.

It is always important to talk to the patient and observe his or her reactions during wound care, as in some cases it is possible to judge an individual's pain level by their reaction to the intervention/dressing change. Some individuals decline analgesia yet will be visibly in pain, others may expect pain due to their previous experience, yet with reassurance be able to undergo dressing change without analgesia.

It is also vital to remember that every individual will have a different level of tolerance to pain — what one patient may consider to be minor irritation may be agony for another.

### Skin

An inspection of a patient's skin should be undertaken to assess its general condition and to assess if there is any existing damage. Dry, moist, undernourished, and fragile/aged skin is generally more at risk of pressure damage than nourished, hydrated skin.

The first indication of tissue/pressure damage is often non-blanching erythema, usually over a bony region. The use of light finger pressure at these sites is therefore vital to ensure underlying pressure damage is recognised. Other signs to look for are localised heat, induration (hardness), and oedema (swelling).

When assessing people with a darker skin pigmentation, the recognition of erythema can be difficult. NICE (2001) suggests observing the skin for any discolouration or colour changes, combined with the signs mentioned above.

### Skin care

It is important to consider the care of the skin and that healthcare professionals can inadvertently cause damage. Rubbing the skin too vigorously may not only result in pain for the patient, but also damage to the tissue, especially over a bony region. When assisting the individual with any aspect of their care such as washing, always pat the skin dry and use an emollient

to rehydrate any dry skin. Always question whether the patient requires a full wash.

### Position/mobility

How an individual is sitting/lying will effect how much pressure is exerted over their pressure areas. This is obviously dependent on their ability to reposition themselves and their recognition of the need to do so. Patients who have a sensory impairment may not have the capacity to understand that they need to regularly reposition themselves and following surgery patients are restricted in the amount of movement they can undertake.

The repositioning of any patient should take into consideration their individual tissue tolerance, any medical history and/or current medical condition, their level of activity/mobility and overall treatment outcomes.

If, for example the patient is undergoing palliative care and is extremely uncomfortable in a certain position or being turned, it may be necessary to minimise the amount of repositioning for their comfort. Always remember to document such decisions.

The individual's general comfort must be considered as well as their right to decline any intervention.

### Repositioning techniques

All patients should be encouraged to reposition independently when they are able to do so — they should also be reminded to do so regularly. For those who require assistance, the repositioning should take into their account

comfort, dignity and functional ability. Any repositioning will be pointless if the pressure is relieved/redistributed but the patient is unable to function, e.g. placed in a position where they are unable to take on food and fluids.

When repositioning a patient, manual-handling aids must be used to avoid dragging the individual across the surface of the bed/seat as this can cause tissue damage through shear and friction. If the individual is to remain in bed, their position should be changed regularly (at least every two hours). Patients should be placed at a 30-degree tilt unless they have specific neurological problems, i.e. in the case of a cerebrovascular accident (CVA) or stroke, to avoid prolonged pressure at bony prominences. Otherwise the body is positioned with the aid of pillows in such a way that the bony areas are raised off the flat surface.

If a static mattress is being used it should have pressure-reducing properties. Any dynamic mattress (these are air-filled, motor driven mattresses) should only be used after appropriate assessment. The use of a profiling bed can be useful but nurses must remember the need for individual assessment with these electric, multi-positioning beds.

The seating of patients must also be considered as patients are at greater risk when seated compared to resting in bed due to the individual placing a larger weight on a smaller surface area.

### Moisture

Factors such as high

temperature, excessive perspiration, oedema, wound exudate, and incontinence may all cause excess moisture. Prolonged exposure to moisture can waterlog and macerate the skin, softening the connective tissue and potentially leading to pressure ulcer development.

### Nutrition

Good nutrition is essential for pressure ulcer prevention and healing. Individual patients should be screened and their nutritional status assessed. Under-nutrition is a reversible element of pressure ulcer development and, as such early identification and management of poor nutrition is of crucial importance (EPUAP, 2009).

Tools such as the Malnutrition Universal Screening Tool and food and fluid input and output charts are all essential in the monitoring of nutritional intake. Local nutritional/dietetic policy/guidelines should also be followed. If there is any doubt relating to the assessment of a patient's nutritional status, a referral should be made to the dietetic department.

### Assessment of a pressure ulcer

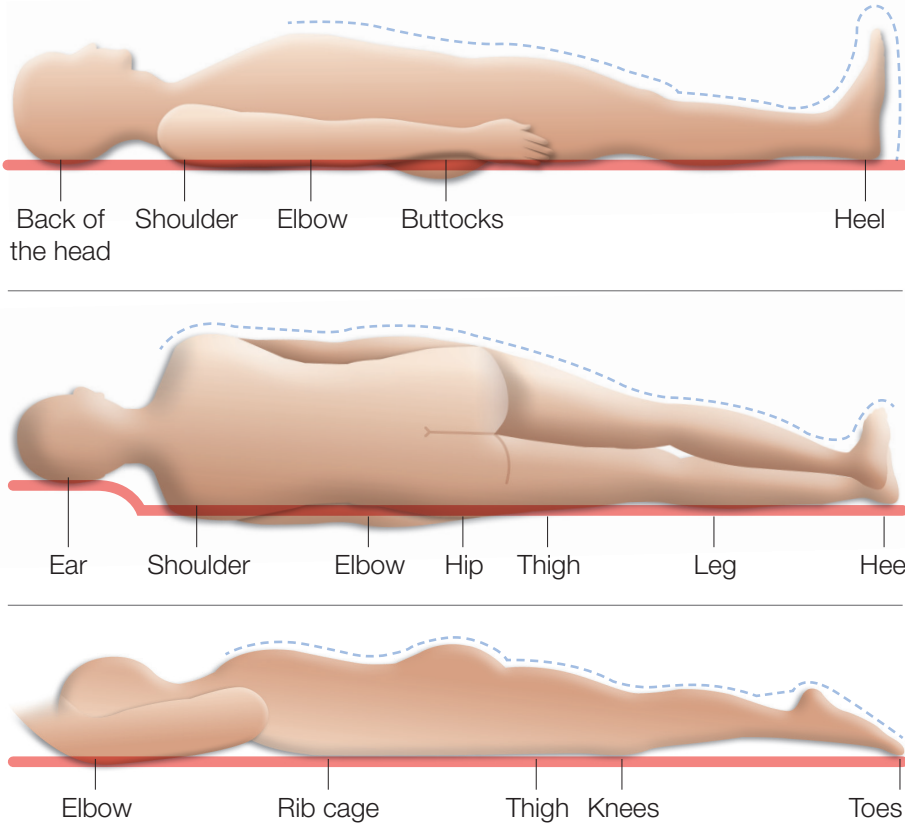
#### Anatomic location

It is important to establish the exact position of the ulcer site. The most common sites of pressure ulceration are shown in *Figure 1*.

#### Dimensions

Measurements should be taken of the ulcer's length, width and depth in centimetres. Any undermining or tunnelling (areas of the pressure ulcer that may not be visible without palpation [use of the hands] which

**Common sites for pressure ulcers**



**Main ways that pressure ulcers arise**

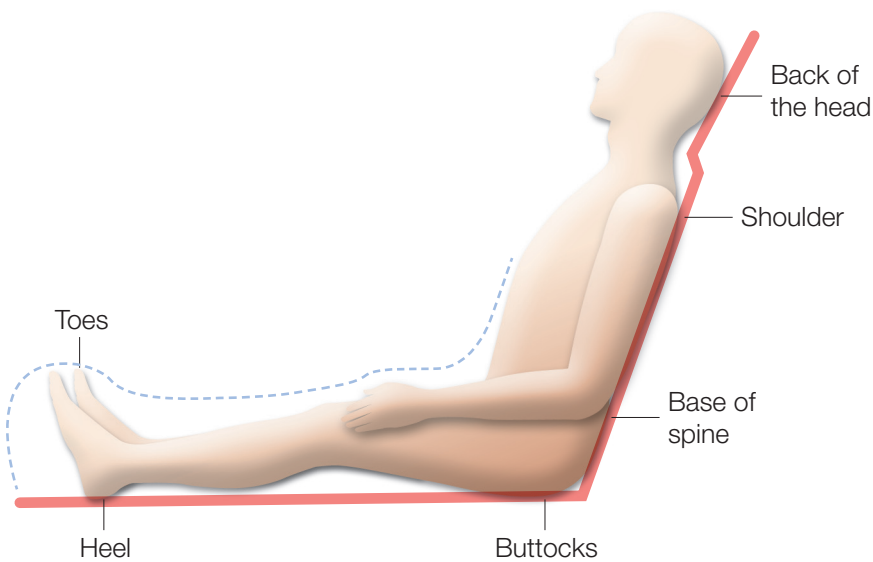


Figure 1. The main areas of pressure ulcer development.

extend under the surrounding tissue) should be explored. To measure the pressure ulcer, a tape measure, a tracing grid and/or photography may be used. If photography is to be used to keep a record of the

ulcer, consent must always be sought first.

To assess the depth of an ulcer, a cotton-tipped probe/swab can be gently inserted into the wound bed. These swabs are



Figure 2. A heel ulcer demonstrating necrotic tissue (black).

now available with measurements already on them, but a plain swab can be used and marked with a pen then measured with tape measure/ruler later. One other innovative way to measure the depth of the cavity is to count how many dressings it takes to lightly fill the wound.

**Tissue type**

The type/s of tissue visible in the wound bed can be directly linked to the ulcer's management. It is therefore of vital importance that the nurse is able to identify them correctly. The main tissue types are necrotic, granulation, epithelial and sloughy.

**Necrotic tissue**

Necrotic tissue is dead and mainly black in colour, but may also present as a greyish/yellow that is visibly separated from the surrounding tissue (Figure 2). As this tissue type often masks underlying pressure



Figure 3. Granulation tissue appears as rolling, red bumps in the wound bed.



damage, areas of necrosis must be removed to allow a full assessment of the wound site. If necrotic tissue is left *in situ*, the wound is also less likely to heal and the individual may be placed at risk of infection.

#### Granulation tissue

Granulation tissue represents new tissue formation and appears as rolling, red bumps in the wound bed (Figure 3).

#### Epithelial tissue

This is the regeneration of the epidermis that presents as pale/dark pinkish skin often looking like the surface of the tongue.

#### Sloughy tissue

Sloughy tissue is the accumulation

of dead cellular debris on the wound bed surface. It presents as yellow in colour with a fibrous/sticky appearance combined with high levels of exudate (Figure 4).

#### Surrounding skin

The surrounding tissue and the wound margins all require observation. Maceration takes place when it is consistently wet. The skin softens, turns white, and can easily become infected with bacteria. Visible maceration may indicate a heavily exuding (draining) ulcer site that if left unaddressed may erode the surrounding tissue. Any dressing choice in these cases must take into consideration the level and type



Figure 4. Slough is yellow in colour and has a fibrous/sticky appearance.

of exudate. A wound should be moist to allow chemicals and cells to migrate (roam freely) and aid healing, yet an overly exuding pressure ulcer will take longer to heal. Equally, in a dry wound bed cells necessary to healing are unable to migrate and healing is delayed.

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## Exudate

There are various types of wound exudate. Exudate is part of the normal wound healing process, presenting as serous fluid in the wound bed. However, the nature of exudate changes in chronic and non-healing wounds and can become problematic (Table 1).

When attempting to clarify the type of exudate that is present within a pressure ulcer, it is important to assess any accompanying odour. The majority of non-infected pressure ulcers have little or no odour. If an odour develops over a period of time it may indicate an underlying infection. It is important to remember that some dressings used in the treatment of pressure ulcers, such as hydrocolloids, may give off odour.

## Grades

The grade of the pressure ulcer is another vitally important factor, which affects the way in which it is managed. For example, a grade 1 ulcer will require observation, repositioning and possibly a film dressing, whereas a grade 4 ulcer will require immediate specialist intervention. The most commonly used tool to aid pressure ulcer grading is The European Pressure Ulcer Prevention Scale (EPUAP, 2009), which classifies ulcers as follows (EPUAP, 2004):

- ▶▶ Grade 1: Non-blanching erythema
- ▶▶ Grade 2: Superficial/partial dermal thickness wound, e.g. blister, abrasion
- ▶▶ Grade 3: Full thickness tissue damage that extends down to the underlying fascia
- ▶▶ Grade 4: Full thickness tissue damage that involves bone, muscle and underlying structures.

## Conclusion

There are many other factors that are pertinent to the individual patient and that these must be taken into consideration when undertaking pressure ulcer risk assessment. It is hoped that this article may be used as a quick reference guide. **WE**

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**Table 1.**

Various types of wound exudate (adapted from Lipcott et al, 2003)

Description	Colour and consistency
Serous	Clear or light yellow; thin and watery
Sanguinous	Red; thin
Serosanguinous	Pink to light red; thin
Purulent	Creamy yellow, green and white; thick