



QUICK GUIDE  
**PRESSURE  
ULCER**  
PREVENTION  
FOR HEALTHCARE  
PROFESSIONALS



**Think**  
Pressure Care

# This booklet has been produced by Invacare for healthcare professionals working with individuals at risk of developing pressure ulcers.

It details, what a pressure ulcer is (also known as a bed sore or pressure sore), what causes them and offers guidance on how to prevent them. It is not only the elderly who are at risk, pressure ulcers can affect anyone at any age.

This booklet is only a guide and is not intended to replace independent clinical judgement, professional educational programmes, national or local guidelines, procedures or protocols.

## **Definition:**

'A pressure ulcer is localized injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure, or pressure in combination with shear. A number of contributing or confounding factors are also associated with pressure ulcers; the significance of these factors is yet to be elucidated' (EPUAP, 2014).

## Did you know...?

- The number of avoidable pressure ulcers are estimated at between 80 and 95% (NPSA, 2010)
- The NHS Safety Thermometer reported that from April 2014 to the end of March 2015, just under 25,000 individuals were reported to have developed a new pressure ulcer, and on average 2,000 pressure ulcers are newly acquired each month within the NHS in England (DOH, 2015)
- Pressure ulcers affect an estimated 30% of patients in the community and 4-10% of patients admitted to hospital (NHS Institute for Innovation and Improvement, 2013)
- The impact on quality of life for the individual living with a pressure ulcer can be great, with changes in mobility, general functioning, control of pain and odour being important considerations. (Bradbury et al, 2008).
- They can have a significant impact on an individual's quality of life and the cost of wound care being around 3% of the NHS expenditure, an estimated £2.4 billion-£3.1 billion per year (Drew et al, 2007). One UK NHS Trust reported a cost estimated as much as £9.89 million (Vowden et al, 2009)
- The cost of treating a pressure ulcer can range from £1,214 to £14,108. Costs increase with severity as the time to heal is longer and the likelihood of complications are higher in severe cases. (Dealey et al, 2012).

## Aetiology of the skin

The skin is the largest organ in the body which, when laid flat, would measure around 2 square meters and accounts for up to 15% of total body weight. The skin protects against injury and infection and is also responsible for the conversion of UV light into vitamin D. It is made up of three layers:

## Epidermis

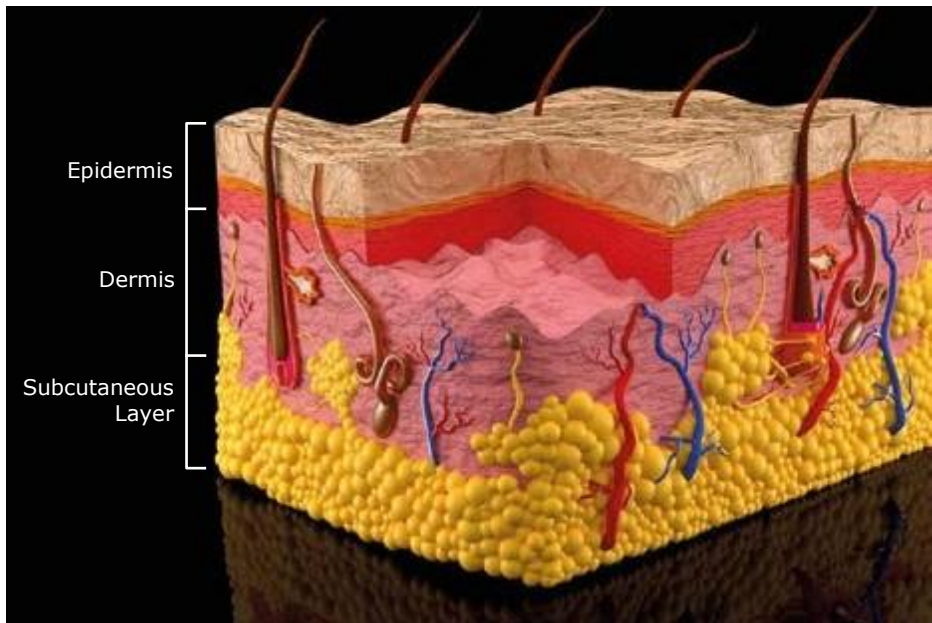
- Thin outer layer
- Only about 0.04mm thick
- Every 4 weeks the epidermis completely renews itself as the outer cells are worn away and replaced with new ones from underneath

## Dermis

- Provides structure and elasticity
- Sturdy mesh of collagen and elastin
- Contains: capillaries, lymph nodes, sebaceous and sweat glands and hair follicles

## Subcutaneous Layer

- Fat cells – shock absorber and insulator
- Provides a protective layer over the underlying organs and structures
- Acts as an energy source for the body
- There is no subcutaneous layer on heels and elbows



## How pressure ulcers develop

Pressure ulcers are caused when an area of skin and the tissues below are damaged as a result of being placed under pressure sufficient to impair its blood supply. The skin and underlying tissue are compressed for a period of time, blood cannot circulate, causing lack of oxygen and nutrients. The lymphatic system cannot drain waste products, the cells die and the area of resulting dead tissue presents as a pressure ulcer.

Shear forces applied to the skin distorts the underlying tissues and impedes the blood supply, which can also contribute to the development of a pressure ulcer.

Extrinsic Factors	Intrinsic Factors
<ul style="list-style-type: none"><li>• localised direct pressure</li><li>• shear</li><li>• temperature</li><li>• moisture</li><li>• friction</li><li>• poor posture</li><li>• time</li></ul>	<ul style="list-style-type: none"><li>• restricted movement</li><li>• heart problems</li><li>• vascular disease</li><li>• heavy smoker</li><li>• dehydration</li><li>• malnourishment</li><li>• history of pressure ulcers</li><li>• medication</li><li>• obese or under weight</li><li>• serious illness</li><li>• old age</li><li>• incontinence</li><li>• poor sensation</li><li>• diabetes</li><li>• neurological condition</li></ul>

Mobility and activity limitations can be considered a necessary condition for pressure ulcer development. In the absence of these conditions, other risk factors should not result in a pressure ulcer (EPUAP, 2014)

## Where would pressure ulcers usually develop?

Pressure ulcers are more common over the bony parts of the body like the sacrum, heel, elbow and shoulder. It is not uncommon for pressure ulcers to develop on the back of the ear or on other areas of the head. The three images below show where pressure ulcers are likely to occur when sitting or lying on the back or side.



Skin and tissue assessment is important in pressure ulcer prevention, classification, diagnosis, and treatment (EPUAP, 2014). If the skin is red and there is uncertainty if it is a pressure ulcer, press the finger lightly over the reddened area for 15 seconds then lift off. If the area goes white, it is most likely not a pressure ulcer. If it stays red, it is likely to be a pressure ulcer. (blanchable or non-blanchable) For darker skin, the early signs of skin damage may be harder to detect and will present as a purple/blue area.

## Other signs to look for

On lighter skin, look for persistent red patches forming which do not fade after the pressure is removed from that area. Look for bluish/ purple patches on darker skin.

Signs or changes to look for:

- Swellings
- Dry areas
- Blisters or areas of torn skin which may be broken blisters
- Hard or soft patches of skin that feel unusually tough or spongy to the touch
- Change in skin colour
- Hot or cool areas over bony areas of the body

## Pressure ulcer or moisture lesion?



There is often uncertainty with skin damage caused by moisture (moisture lesions) and those caused by shear forces or friction rather than pressure alone, which can create some confusion in classification.

In many cases, pressure, shear, friction and, with the presence of moisture increase the risk of pressure ulceration (EPUAP,2014), moisture may all have contributed to the development of the ulcer.

A moisture lesion can develop as a result of prolonged exposure of the skin to excessive fluid from urinary and/or faecal incontinence, perspiration or wound exudate. Moisture lesions can be misclassified as pressure ulcers, although the prevention and treatment of the skin damage is significantly different.

Support surfaces alone have little effect on the prevention and treatment of moisture lesions, with prevention of such skin damage being largely dependent on good skin care and management of the predisposing cause.

Here is a quick guide to assist with differentiating between a pressure ulcer and a moisture lesion:

Pressure Ulcers	Moisture Lesions
<p data-bbox="117 962 538 1018">Regular, defined, localised and usually over a bony prominence</p> 	<p data-bbox="605 962 971 1018">Irregular, scattered, diffused with moisture present.</p> 

## Pressure ulcer grading

### EPUAP recommends the following pressure ulcer classification system (EPUAP/NPUAP, 2014).

It is recognised that the terms 'stage', 'grade' or 'category' are used to define the level of skin-tissue injury and these terms can be used by the international community.



#### **Category/Stage I: Nonblanchable Erythema**

Intact skin with non-blanchable redness of a localized area usually over a bony prominence. Darkly pigmented skin may not have visible blanching; its colour may differ from the surrounding area. The area may be painful, firm, soft, warmer or cooler as compared to adjacent tissue. Category/Stage I may be difficult to detect in individuals with dark skin tones. May indicate "at risk" individuals (a heralding sign of risk).



#### **Category/Stage II: Partial Thickness Skin Loss**

Partial thickness loss of dermis presenting as a shallow open ulcer with a red pink wound bed, without slough. May also present as an intact or open/ruptured serum-filled blister. Presents as a shiny or dry shallow ulcer without slough or bruising. \*This Category/Stage should not be used to describe skin tears, tape burns, perineal dermatitis, maceration or excoriation.

\*Bruising indicates suspected deep tissue injury.



#### **Category/Stage III: Full Thickness Skin Loss**

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. The depth of a Category/Stage III pressure ulcer varies by anatomical location. The bridge of the nose, ear, occiput and malleolus do not have subcutaneous tissue and Category/Stage III ulcers can be shallow. In contrast, areas of significant adiposity can develop extremely deep Category/Stage III pressure ulcers. Bone/tendon is not visible or directly palpable.



#### **Category/Stage IV: Full Thickness Tissue Loss**

Full thickness tissue loss with exposed bone, tendon or muscle. Slough or eschar may be present on some parts of the wound bed. Often include undermining and tunnelling. The depth of a Category/Stage IV pressure ulcer varies by anatomical location. The bridge of the nose, ear, occiput and malleolus do not have subcutaneous tissue and these ulcers can be shallow. Category/Stage IV ulcers can extend into muscle and/or supporting structures (e.g., fascia, tendon or joint capsule) making osteomyelitis possible. Exposed bone/tendon is visible or directly palpable.



### **Unstageable: Depth Unknown**

Full thickness tissue loss in which the base of the ulcer is covered by slough (yellow, tan, grey, green or brown) and/or eschar (tan, brown or black) in the wound bed. Until enough slough and/or eschar is removed to expose the base of the wound, the true depth, and therefore Category/Stage, cannot be determined. Stable (dry, adherent, intact without erythema or fluctuance) eschar on the heels serves as 'the body's natural (biological) cover' and should not be removed.



### **Suspected Deep Tissue Injury: Depth Unknown**

Purple or maroon localized area of discoloured intact skin or blood-filled blister due to damage of underlying soft tissue from pressure and/or shear. The area may be preceded by tissue that is painful, firm, mushy, boggy, warmer or cooler as compared to adjacent tissue. Deep tissue injury may be difficult to detect in individuals with dark skin tones. Evolution may include a thin blister over a dark wound bed. The wound may further evolve and become covered by thin eschar. Evolution may be rapid exposing additional layers of tissue even with optimal treatment.

## **Risk Assessment**

Individuals who are confined to a bed or wheelchair, or who spend long periods of time sitting each day are particularly prone to developing pressure ulcers. However, some individuals are more at risk of developing pressure ulcers than others when taking into account the intrinsic and extrinsic risk factors mentioned previously. There are several risk assessment tools available to help identify who is most at risk of developing a pressure ulcer including Waterlow, Walsall, Braden, Braden Q and Purpose T.

Risk assessment should be used as an adjunct to clinical judgement and not as a tool in isolation from other clinical features (EPUAP, 2014).

Risk assessment scales are designed as an aide memoire. They are best used as part of an overall risk assessment which includes clinical judgment. This type of risk assessment works best as a communication tool and a method of establishing a base line for an individual against which change in condition can be assessed over time. The risk assessment score alone SHOULD NOT be used to decide upon a particular product or pressure care regime.

A risk assessment should be performed as soon as possible (but within a maximum of eight hours after admission) to identify individuals at risk of developing pressure ulcers. (EPUAP, 2014)

## The prevention and management of pressure ulcers

### How can the risk of pressure ulcer development be reduced?

1. **Check the skin** for signs of damage at least once a day if the individual is lying or sitting for long periods. The individual could inspect their own skin regularly for any changes if they are able to do so. If possible, ask the individual to stand and move around for five minutes every hour to encourage circulation.
2. **Movement:** Make sure the individual turns and changes position regularly to transfer the weight off bony areas of the body, and allow tissue reperfusion.
3. **Repositioning:** If possible, the individual should be encouraged to reposition themselves. In the past, repositioning the individual every 2 hours used to be recommended but there is no evidence to support this practice. EPUAP, 2014, suggest it is better to be guided by the following:
  - appearance of the skin
  - the pressure redistributing support surface
  - tissue tolerance
  - level of activity and mobility
  - general medical condition
  - overall treatment objectives
  - skin condition
  - comfort

Use the 30° tilted side-lying position (alternately, right side, back, left side) or the prone position if the **individual can tolerate this and her/his medical condition allows**. The body is positioned using pillows to redistribute pressure from the bony prominences.

4. **24 Hour care:** If the individual has to sit or lie for long periods of time, make sure they have a suitable cushion and mattress to help reduce the risk of damage (i.e. pressure redistributing surface).

### **Mattresses**

NICE, 2014, recommends the use of a high specification foam mattress for adults who are:

- admitted to secondary care
- assessed as being at high risk of developing a pressure ulcer in primary and community care settings








## Protection

The heels are at high risk of developing pressure ulcers due to having very little soft tissue protecting the bone. The risks are even greater if the individual suffers with oedema of the lower leg due to circulatory problems. Discuss with adults at high risk of developing a heel pressure ulcer and, where appropriate, their family or carers, a strategy to offload heel pressure, as part of their individualised care plan. (NICE, 2014)

Use heel suspension devices that elevate and offload the heel completely in such a way as to distribute the weight of the leg along the calf without placing pressure on the Achilles tendon. (EPUAP, 2014)

## Seating

Selecting the appropriate type of seating is very important as inappropriate seating provision may increase the risk of pressure ulcer development.

Seat too high or too low		Seat too wide or too narrow			
					
<b>Seat too low</b>	<b>Armrest too high</b>	<b>Seat too narrow</b>	<b>Seat too wide</b>	<b>Correct armrest height &amp; seat width</b>	
Difficult to get out	Uncomfortable - poor posture	Difficult to get in and out	No support - poor posture	Good posture and support	
Body weight is supported on a small area. This leads to high pressure under the buttocks.	High pressure under the elbows. May be difficult to eat and drink.	Allows no movement in the seat.	No stability may lead to fixed spinal deformities with time.	A correctly-sized seat provides effective pressure care, good sitting posture and allows the individual to move in the seat	
Remember, addressing the length of time individuals sit out is fundamental to pressure ulcer prevention					
<b>(RCN: Royal College of Nursing)</b>					

Limit the time an individual spends seated in a chair without pressure relief (EPUAP, 2014)

- 5. Nutrition:** Encourage the individuals to eat a well-balanced diet and drink plenty of fluids. Screen the nutritional status for each individual at risk of or with a pressure ulcer:
  - at admission to a health care setting;
  - with each significant change of clinical condition; and/or
  - when progress towards pressure ulcer closure is not observed. (EPUAP, 2014)
- 6. Protect the skin:** Encourage individuals to keep their skin clean and dry, and use mild soaps that do not dry out the skin. Ensure they dry carefully without rubbing. If they suffer with incontinence, wash the skin with a gentle soap immediately and pat dry.

# Documentation and reporting

Make sure to document everything and refer to trust/ organisations guidelines and protocols on documentation and reporting. Generally, it is viewed that if it isn't documented, it didn't happen.

The SSKIN Bundle is an example of a good documentation and reporting tool, which offers a simple, holistic approach to pressure ulcer prevention. It ensures all individuals are assessed and guides healthcare professionals to deliver the appropriate care to prevent pressure damage and it is a reusable model. The SSKIN Bundle was first developed in Florida in 2004 and was implemented successfully in Wales in 2009. It is now being used and adapted throughout the UK.

Ensure you regularly inspect the skin, looking for the early signs of skin damage and implement appropriate measures if changes occur.

To find out more about how the SSKIN Bundle tool is used in NHS Wales visit [www.wales.nhs.uk/sitesplus/863/page/65480](http://www.wales.nhs.uk/sitesplus/863/page/65480)

## How to encourage individuals to be involved in their own pressure

Some individuals may only be at risk of developing pressure damage for a short period of time e.g. whilst they recuperate from an acute illness or surgery. For others, there may be a constant risk of pressure damage due to loss of mobility or a chronic illness.

- An individual should be encouraged to be involved in their own pressure area care. This can be done by:
  - Explaining the importance of pressure area care
  - If possible, reminding them to frequently reposition themselves, where appropriate
  - Highlighting the need to maintain a high standard of hygiene to keep the skin clean and dry
  - Explaining the importance of eating a healthy diet and drinking enough water
  - Helping them to mobilise again as soon as possible as their condition allows

Non concordance can be avoided in many cases by involving patients in their treatment and care plans. Our **Quick Guide to Preventing Pressure Ulcers for Patients and Carers** is a useful free tool which helps individuals become more aware of the risks of pressure ulcers and provides details on causes along with guidance on how to prevent them.

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