

ASSESSING ERYTHEMA TO DETECT THE DEVELOPMENT OF PRESSURE ULCERS

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When caring for individuals who are at risk of developing pressure ulcers, it is essential that skin assessments are carried out regularly to identify any change in skin condition which could indicate pressure damage. One such indicator is non-blanching erythema and this article describes how to test for this symptom in patients who are at risk of pressure ulcer development.

Pressure ulcers, also known as pressure sores, decubitus ulcers and bedsores, are areas of skin where the tissue has died. They generally occur over a bony prominence, most commonly the sacrum and the heels, where pressure applied to the hard surface of the prominence causes an interruption or occlusion of the blood supply, leading to tissue death.

What causes pressure ulcers?

Pressure ulcers are caused by external forces of pressure, such as shear and friction (Allman, 1997). Shear occurs when the skeleton and attached deep fascia slide within the skin, while the skin and superficial fascia attached to the dermis remain stationary. The two forces moving in opposite directions leads to an interruption of the blood supply and cell death. The effects of shear and friction can be further

complicated by the patient's physical condition, such as altered nutritional intake, and exposure to excess moisture, i.e. incontinence or sweating

(Maklebust, 1987). Poor nutrition leads to a reduction in skin elasticity allowing it to become more vulnerable to damage. If a wound does



Figure 1. If there is an area of discolouration, apply light finger pressure to the area for 10 seconds.

occur in a patient who has a poor nutritional status, this may affect the patient's ability to heal by slowing down the process. Incontinence or sweating can cause maceration of the skin, thus increasing the risk of friction damage.

Detecting abnormal erythema

When caring for individuals who are at risk of pressure ulcer development, it is essential that skin assessments are carried out regularly to identify any change in skin condition which could indicate pressure damage. The most commonly recognised pressure ulcer indicator is that the skin becomes red and/or purple in colour — known as erythema — but this could be a normal reaction to pressure (reactive hyperaemia) or an abnormal one (non-blanching hyperaemia).

The technique used to detect abnormal hyperaemia is illustrated in *Figures 1–5*.

For patients with dark skin pigmentation, pressure ulcer development will be indicated by areas where there is localised heat, or where there is damage, coolness, purple/black discolouration, localised swelling (oedema) or tissue hardness (induration) (NHS Quality Improvement, 2003).

Conclusion

Following these steps will help determine the true nature of the skin changes if the practitioner is concerned about the possible development of a pressure ulcer. If a pressure ulcer has developed, then the appropriate resources

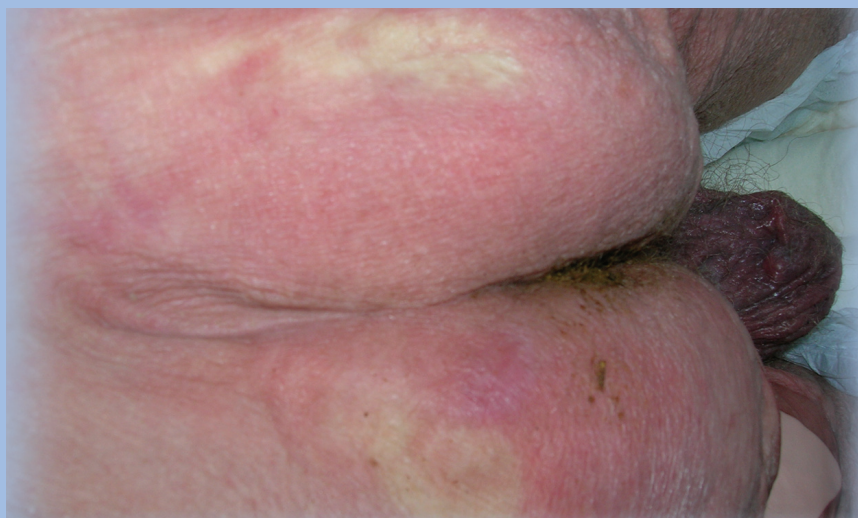


Figure 2. Release the pressure.



Figure 3. If the area is white and then returns to its original colour, the area has a good blood supply, it is healthy and the patient has reactive hyperaemia.



Figure 4. If on release of pressure the area is the same colour as before pressure was applied, it is an indication of the beginning of pressure ulcer development and preventive strategies should be employed.



Figure 5. If there is an alteration in skin colour (red, purple or black), or increased heat or swelling, it may imply underlying tissue breakdown. The wound should be assessed more frequently.

Glossary

Erythema: Redness, as seen in inflammation surrounding wounds, or in areas where prolonged pressure has occluded the local blood supply resulting in inflammatory changes.

Fascia: A sheet of fibrous tissue that envelops the body beneath the skin; it also encloses muscles and muscle groups and separates their several layers or groups.

Reactive hyperaemia: the characteristically bright flush of the skin associated with the release of pressure which is a direct response to incoming blood.

Non-blanching hyperaemia: when there is no change to skin colour when light finger pressure is applied.

and interventions should be implemented. This may be in accordance with local protocols/guidelines or with the support of a tissue viability nurse specialist. **WE**

Allman RM (1997) Pressure ulcer prevalence, incidence, risk factors and impact. *Clin Geriatr Med* **13(3)**: 421–36

Maklebust J (1987) Pressure ulcers, aetiology and prevention. *Nurs Clin North Am* **22(2)**: 359–77

NHS Quality Improvement (2003) *Best Practice Statement for the Prevention of Pressure Ulcers*. NHS Quality Improvement, Scotland

MYTH BUSTER

In recent years there has been a lot written regarding wound infection, diagnosis and treatment. Unfortunately there still appears to be confusion about when a wound swab should be taken. Swabs are often taken as a matter of course but with little or no clear clinical symptoms to indicate the presence of infection.

Wound swabs should be taken when:

- ▶▶ The wound presents with the classic signs of infection (usually two or more)
- ▶▶ The wound is deteriorating, there is no obvious reason for this deterioration, or if the deterioration is rapid in onset
- ▶▶ Where spreading infection (cellulitis) is evident.

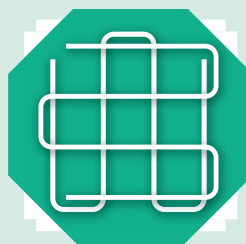
The following factors are criteria for wound infection:

- ▶▶ Abscess
- ▶▶ Cellulitis/erythema – wound edges and surrounding tissue becomes red and inflamed
- ▶▶ Delayed healing
- ▶▶ Discolouration
- ▶▶ Friable, bleeding, granulation tissue
- ▶▶ Pain/tenderness – usually increased pain from the wound and surrounding tissue

- ▶▶ Oedema – increased swelling around the wound
- ▶▶ Heat – the wound and surrounding tissue is hot to touch
- ▶▶ Purulence/discharge – exudate from the wound is thick and yellow/green in colour
- ▶▶ Pocketing/bridging at the base of the wound
- ▶▶ Abnormal smell
- ▶▶ Wound breakdown (Cutting and Harding, 1994).

Bacteria are not washed away during wound cleansing. Therefore a wound can be cleansed before swabbing and bacteria can still be identified.

To collect as much bacteria from the wound bed, the swab should be rotated between your fingers as well as zig-zagged across and up and down the wound (*below*).



Cutting K, Harding K (1994) Criteria for identifying wound infection. *J Wound Care* **3(4)**: 198–201