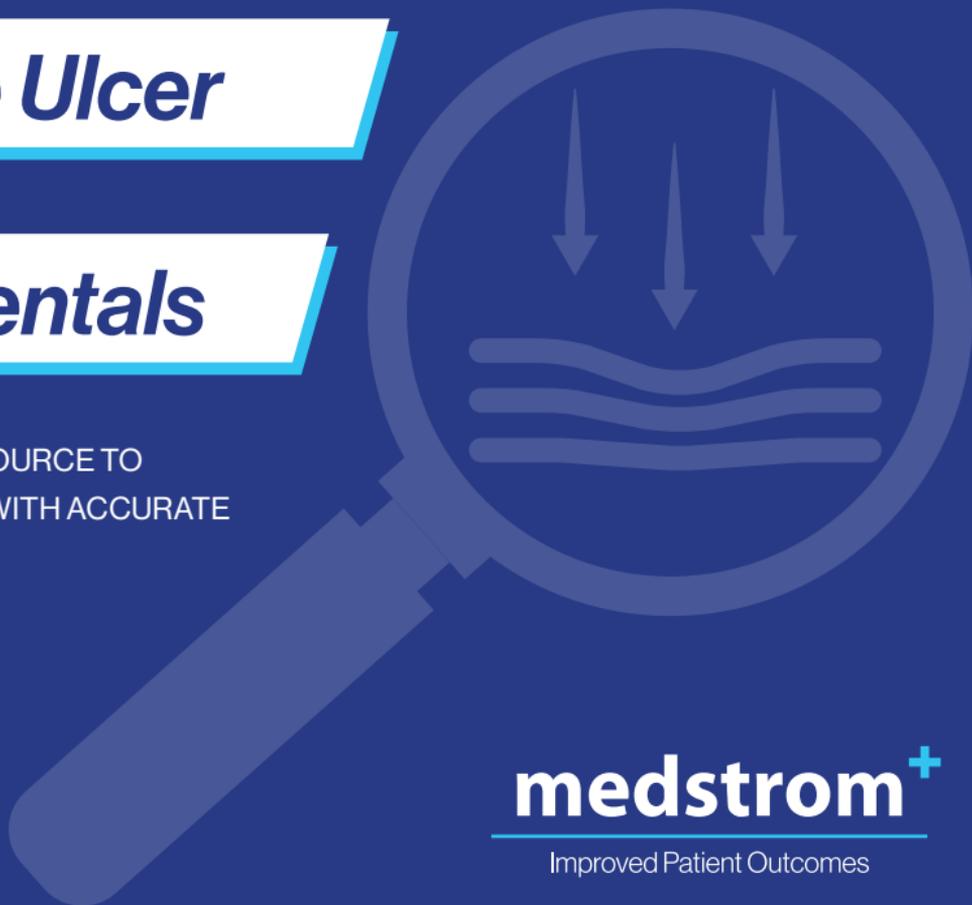


# *Pressure Ulcer*

## *Fundamentals*

AN EDUCATIONAL RESOURCE TO  
SUPPORT CLINICIANS WITH ACCURATE  
PATIENT ASSESSMENT



**medstrom<sup>+</sup>**

Improved Patient Outcomes

## Meet the author: Sue Hopewell

*“As a TVN, I have seen so many lives affected by pressure ulcers, so it is essential for healthcare professionals to be armed with the knowledge to help prevent this mainly avoidable patient harm.”*

### **Sue Hopewell, RN BSc (Hons) Health Care Studies (Tissue Viability)**

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Sue has over 17 years' experience working in the NHS, specialising in Breast Care, Plastic Surgery, Practice Development and importantly, Tissue Viability.

A practising Tissue Viability Nurse since 2008, Sue still holds an honorary Tissue Viability Nurse contract with Nottingham University Hospitals NHS Trust. Altogether, her vast knowledge and understanding of the Tissue Viability field has helped influence her role as a Clinical Manager for some of the UK's leading healthcare equipment suppliers.

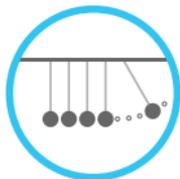


# Introduction to pressure ulcers

It is well known that pressure ulcers pose a significant humanitarian and economic burden. Along with the impact on individuals' quality-of-life, pressure ulcers are also associated with increased length of hospital stay and re-admission rates<sup>1-3</sup>.

Accounting for 5% of all wounds in the UK and 7% of NHS spend on wound care<sup>4</sup>, pressure ulcers are a key quality indicator for healthcare providers. There is clear commitment from the NHS to address the ongoing challenge of pressure ulcers with the launch of two key documents in 2018 focusing on definition and management of pressure ulcers along with educational guidance through a detailed core curriculum<sup>5,6</sup>. This is supported further by the National Wound Care Strategy Programme focus on pressure ulcers (#Stop the Pressure).

Understanding how pressure ulcers develop and identifying risk factors is key to implementing appropriate preventative care. This clinical resource will provide information covering several key areas including:



Aetiology



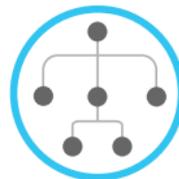
Common anatomical areas associated with pressure ulcer development



Pressure ulcer categorisation



Identifying pressure related tissue damage in people with dark skin tones



aSSKING Framework

## Definition of a pressure ulcer

NHS Improvement advise a pressure ulcer should be defined as:

*“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>5</sup>*



## *How do pressure ulcers develop?*

**Knowing how pressure ulcers develop is essential in understanding how they can be prevented and what interventions are required to achieve this.**

As documented in the International Prevention and Treatment of Pressure Ulcers/Injury Clinical Practice Guideline, pressure ulcers occur due to bodyweight forces or as a result of externally exerted forces such as a medical device or by a combination of these<sup>7</sup>. Pressure ulcers can present as intact skin or open wound and may be painful<sup>7</sup>.

Damage in the tissue results from intense and/or prolonged exposure to sustained deformation in compression (pressure), tension (stretching) and shear (distortion), or a combination of these loading modes.

The ability of soft tissues being able to tolerate sustained deformation can differ by tissue type; so, one individual can be very different to another. It may also be affected by a number of other factors including microclimate, perfusion, age, health status (acute or chronic), co-morbidities and condition of soft tissue<sup>7</sup>.



Different injury mechanisms impact various tissues, including:

- *Cell deformation damage (in single cells)*
- *Inflammation related damage (in cells and tissues)*
- *Ischaemia and re-perfusion injury (also at cell and tissue levels)*

It is the sustained deformation that directly impacts the integrity and function of cells, blood vessels and tissues. You can see from **Figure 1** that deformations may cause damage to the structure of cells, but also trigger inflammation and the development of oedema and distort the capillary network, this in turn reduces the supply of nutrients to the tissues or cause lymphatic obstruction compromising the removal of metabolic waste products.

To conclude, the exposure to sustained cell and tissue deformations directly and indirectly causes the formation and progression of cell and tissue damage<sup>7</sup>. Hence, understanding how pressure ulcers develop is essential for clinical practice as it will inform the interventions and care delivered to the individual.

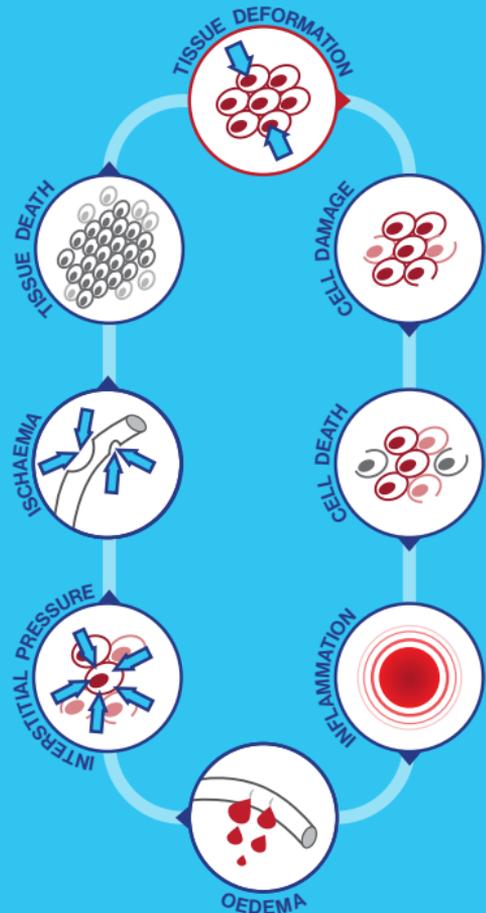


Figure 1

## Who is most at risk of developing pressure ulcers?

Anyone can get a pressure ulcer, but the following factors can make them more likely to develop<sup>7,8,9</sup>.



Advanced age (70+ years old)



Confined to bed with illness or after surgery



Inability to move/reposition some or all of the body (paralysis)



Obesity



## Who is most at risk of developing pressure ulcers?



Urinary incontinence and bowel incontinence



Increased skin moisture



Poor nutritional status



Medical conditions that affect perfusion and oxygenation (diabetes, kidney failure, MS, etc.)



Significant loss of sensation



Previous or current pressure ulcer



Increased body temperature



Presence of pressure, shear and friction

## Where do pressure ulcers develop?

Pressure ulcers can develop anywhere on the body, but they usually occur over a bony prominence. However, they may also be related to a medical device or other object<sup>7</sup>.

You will see from **Figures 2, 3, 4** and **5** the common anatomical areas for pressure ulcer development relating to the different positions.

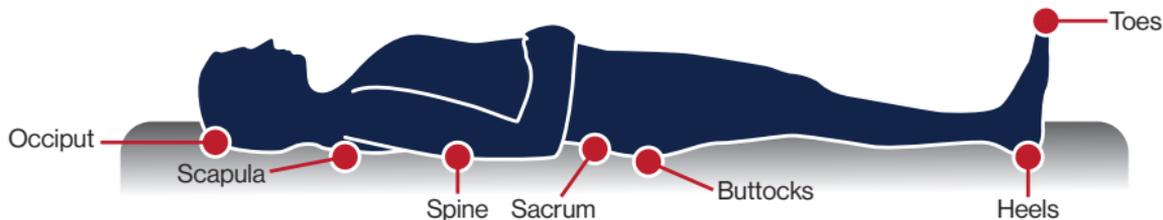


Figure 2: Supine patient

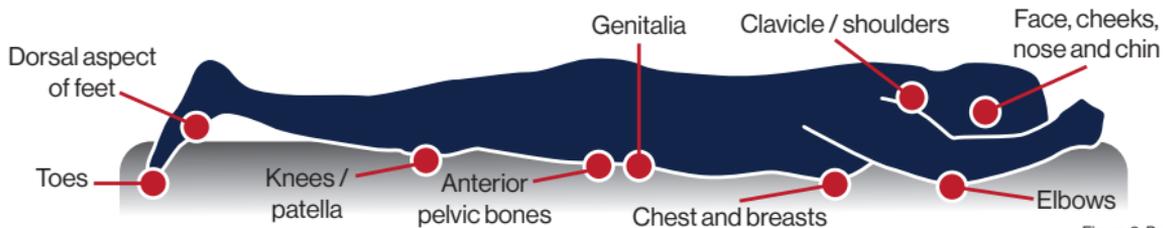


Figure 3: Prone patient

# Where do pressure ulcers develop?

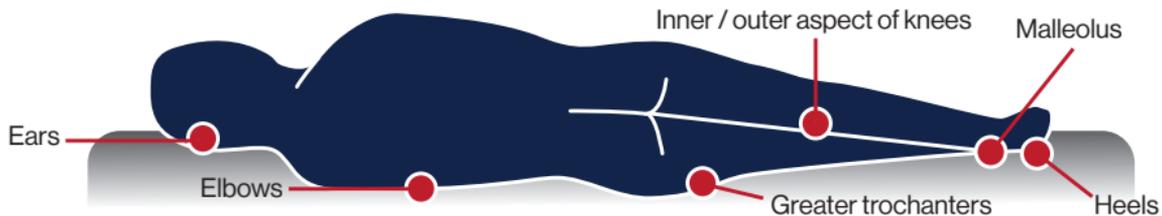


Figure 4: Patient on their side

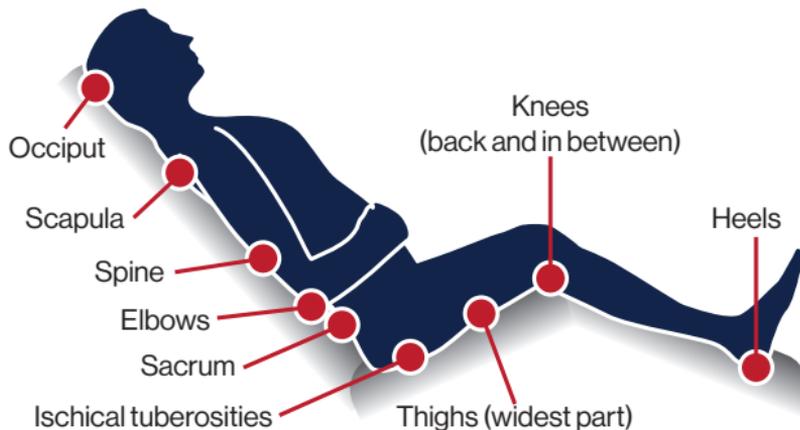


Figure 5: Seated patient

## Classification of pressure ulcers

A pressure ulcer classification system describes the extent of skin and tissue damage presenting as a pressure ulcer<sup>7</sup>; therefore it is essential to utilise a recognised system, with the International NPUAP/EPUAP Pressure Ulcer Classification System (2009, 2014)<sup>10</sup> being one of these.

The benefits in using a recognised system within clinical practice includes accurate assessment and reporting along with assisting in preventative and treatment pathways.

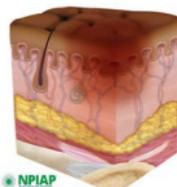
### Category I pressure ulcer: non-blanchable erythema

Intact skin with non-blanchable redness of a localised area usually over a bony prominence. A Category I pressure ulcer may indicate “at risk” individuals (a heralding sign of risk). This may be difficult to detect in individuals with dark skin tones. For example, 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 in comparison to adjacent tissue.

Light skin tone



Dark skin tone





**Category II pressure ulcer:  
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.



**Category III pressure ulcer:  
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.

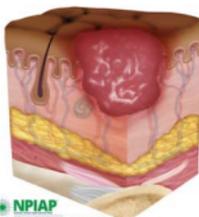
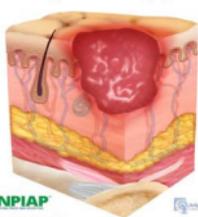


**Category IV pressure ulcer:  
full thickness tissue loss**

Full thickness tissue loss with exposed bone, tendon or muscle. Slough or eschar may be present on some parts of the wound bed. Often includes undermining and tunnelling.

Light skin tone

Dark skin tone

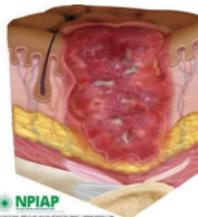
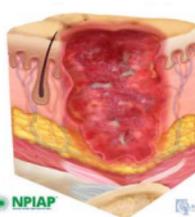


NPIAP

NPIAP

Light skin tone

Dark skin tone



NPIAP

NPIAP

Light skin tone

Dark skin tone



NPIAP

NPIAP



### 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 cannot be determined.



### Suspected deep tissue injury: depth unknown

Purple/maroon localised 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 identified by tissue that is painful, firm, mushy, warmer or cooler compared to adjacent tissue. May be difficult to detect in dark skin tones.

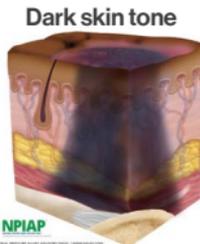
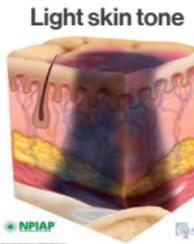
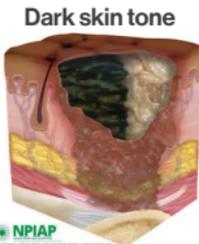


### Moisture-associated skin damage (MASD)

Moisture-associated skin damage (or moisture lesion) is often misclassified as a pressure ulcer\*\*.

Below are some characteristics of moisture lesions to help staff differentiate between the two.

- *Moisture must be present (generally due to urinary incontinence or diarrhoea)*
- *Superficial*
- *No necrosis present*
- *Irregular shape*
- *Irregular edges*



\*Categorisation not applicable to Ireland

\*\* Please note, MASD is not part of the Pressure Ulcer Classification System; however, should be counted and reported in addition to pressure ulcers<sup>5</sup>.

## *Classification of pressure ulcers*

**Medical Device Related Pressure Ulcers** are those that have resulted from the use of devices designed and applied for diagnostic purposes. For example, respiratory and orthopaedic devices. The resultant pressure ulcer can closely conform to the pattern or shape of the device.

Not all pressure ulcers are limited to the skin. For example, those that occur on, within or underneath a mucous membrane. A mucous membrane is the moist lining of body cavities' which include the respiratory, gastrointestinal and genitourinary tracts<sup>11</sup>.

These types of pressure ulcers are primarily related to medical devices. Mucosal tissues are vulnerable to pressure, for example from oxygen tubing, endotracheal tubes and tube holders, bite blocks, orogastric and nasogastric tubes, urinary catheters, and faecal containment devices<sup>7</sup>.



## Dark skin tone assessment

The ability to identify pressure related tissue damage in all skin types is essential, however many signs and symptoms, such as the blanching response rarely shows in dark skin tones, with erythema also being harder to detect<sup>12</sup>. With this in mind, it is essential that a holistic pressure ulcer assessment should involve a thorough skin inspection which includes an awareness of skin tone.

Ascertaining the patients base line skin tone is vital so that any changes to the patient's skin can be monitored and identified early. The lack in identification of skin changes can mean that important signs are missed, which can then lead to skin and tissue breakdown and damage<sup>13</sup>.

There are several tools utilised for skin phototyping, one of which is the Colour Bar Tool<sup>14</sup> (**Figure 6**). This is a validated classification tool that shows a range of skin tones and has been identified that it may also be useful in wound care assessment. This colour bar tool, identified in a best practice statement published in 2021, highlights its use to record baseline skin tone for monitoring purposes<sup>13</sup>.

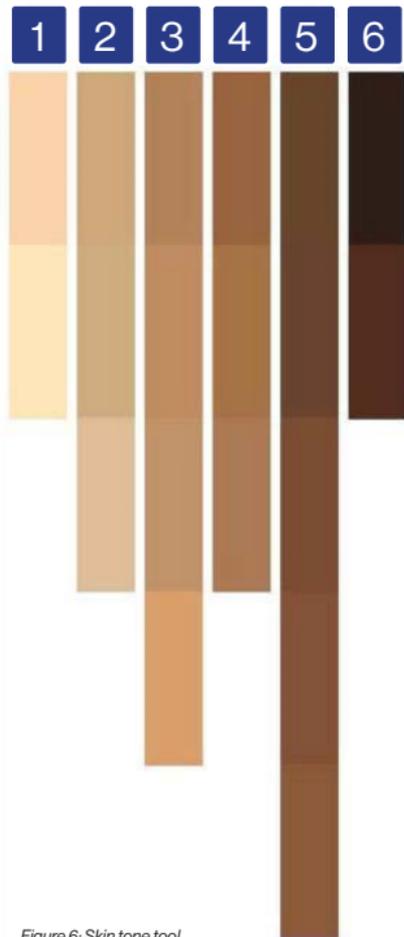


Figure 6: Skin tone tool

## Dark skin tone assessment

**This Colour Bar Tool<sup>14</sup> (Figure 6) can be used to select the skin tone that most closely matches the patient's inside upper arm, and it has been found to be more effective than asking the patient to describe their own skin colour.**

It is important to note that the use of touch is also an essential part of skin assessment. This is particularly important for patients with dark skin tones as there is less visual evidence base for assessment and diagnosis<sup>13</sup>. Communication is also key, listen to the patient's perspective on their wound and overall skin condition.

The best practice statement document mentioned previously also outlines questions to consider when undertaking a skin assessment<sup>13</sup>. These are listed below:

- ***What is the wound/peri wound skin like in comparison to the surrounding skin?***
- ***Are there any differences in colour?***
- ***Does the skin feel warm/cool?***
- ***Does the skin feel spongy or firm to the touch?***
- ***Does the skin look or feel shiny or tight?***
- ***Is there any swelling or inflammation?***
- ***Are there any changes in the texture of the skin and underlying tissue?***
- ***How is the overall condition/integrity of the skin?***
- ***Is there any pain, itchiness or change in sensation?***

It is also important to note that skin tone may differ across different areas of the body and when assessing skin, try comparing similar anatomical locations. For example, the heels.

# aSSKINg framework

**Within clinical practice it is essential to follow a structured approach to pressure ulcer prevention and management; the aSSKINg framework provides this structure.**

Developed as part of the NHS improvement Core Curriculum<sup>6</sup> document published in 2018, the aSSKINg model was built on the existing SSKIN care bundle, which focused on Surface, Skin Inspection, Keep Moving, Incontinence and Nutrition. The 'a' and 'g' were then added to provide focus on assessing risk and giving information.

The core SSKIN acronym represents the fundamental elements of care delivery, i.e. those things that need to be implemented to prevent pressure ulcers occurring, with the 'a' and 'g' underpin and support the successful implementation of care<sup>6</sup>.

The aSSKINg framework is now being used in many health care organisations where it forms an essential part of pressure ulcer prevention pathways.



## **a**

*assess risk*

- First step in pressure ulcer prevention to identify patients most at risk, thus ensuring resources are used appropriately<sup>15</sup>.
- Use a structured approach when conducting a pressure ulcer risk assessment which includes the use of a risk assessment tool<sup>7</sup>.

## **S**

*Skin assessment  
& care*

- A comprehensive skin assessment should be carried out for all individuals at risk of pressure ulcers, with initial and ongoing assessment of the skin necessary to detect early signs of pressure damage<sup>7</sup>.
- Keep skin clean and appropriately hydrated<sup>7</sup>.

## **S**

*Surface  
selection & use*

- Select an appropriate support surface ensuring that it meets your patients' needs for pressure redistribution, ensuring that the bed surface area is sufficiently wide to allow turning of the individual<sup>7</sup>.

## **K**

*Keep moving*

- Encourage mobility, regular movement, and self-repositioning.
- Assist patients who are unable to move/reposition independently.

## **I**

*Incontinence  
assessment*

- Develop an individualised continence management plan to include toileting and/or regular skin care and change of continence pads<sup>7</sup>.
- Cleanse the skin promptly after episodes of incontinence.
- Apply a barrier product to protect the skin from moisture.

## **N**

*Nutrition &  
hydration*

- Following nutritional screening, a comprehensive nutritional assessment is required for patients identified as being at risk of a pressure ulcer development and malnutrition and for all patients with a pressure ulcer<sup>7</sup>.
- Provide nutritional supplements as advised/prescribed by appropriate health care professional e.g. dietician/nutritionist.

## **g**

*giving  
information*

- Provide pressure ulcer prevention information to patients, carers and the multi-disciplinary team.
- Ensure information is communicated clearly and effectively.

## *STOP the pressure*

Medstrom is dedicated to working closely with clinicians in order to provide the most relevant and up-to-date evidence and resources. This includes partnering with the Nursing Times to support a video series that explores pressure ulcer prevention and an in-depth look at the types of surfaces available to support the right patient, with the right product, at the right time.

Scan the QR code for access to pressure area care resources at your fingertips:



**STOP. Scan. Learn.**



Additionally, for access to Medstrom's pressure area care clinical solutions library, visit:

[www.medstrom.com](http://www.medstrom.com)

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