

# The prevention, assessment and management of skin tears

## KEY WORDS

- ▶ Epidermolysis bullosa
- ▶ Dressing regimen
- ▶ Patient story
- ▶ Wound healing

When skin tears occur, the focus should be placed on appropriate assessment, classification, and management. As skin tears are considered to be largely preventable, clinicians should actively engage in the prevention of such wounds. In this article, Jackie Stephen-Haynes and Rosie Callaghan cover the prevention, assessment and management of skin tears.

**S**kin tears occur in individual with fragile skin, commonly neonates and older people, and especially in those requiring assistance with personal care. Skin tears are considered to be largely preventable. Clinicians, healthcare assistants and carers have a significant role to play in skin tear prevention, as well as in the assessment and management of this wound type.

The implementation of key principles in clinical practice can reduce the occurrence of skin tears and maintain skin integrity.

## THE SKIN

The skin is the largest organ in the body and is made up of three layers; the epidermis, dermis, and hypodermis. It is the body's main protective barrier against invasive micro-organisms, toxins and UV light. It protects the internal tissues and organs and helps maintain homeostasis (Sibbald et al, 2009), as well as having a number of important additional functions, including sensation, thermo-regulation and secretion and synthesis of Vitamin D.

The dermo-epidermal junction attaches the epidermis to the dermis and as skin ages this interface becomes "flattened". This flattening, along with the natural thinning of the skin that begins after 70 years of age (Desai, 1997), increases skin susceptibility to moisture and friction (Cooper, 2006), while reducing its resistance to shear forces (Voegell, 2010).

The dermis is made up of connective tissue, blood vessels, lymphatics, macrophages, endothelial

cells and fibroblasts. A reduction in collagen and elastin increases the susceptibility to friction and shearing forces. During the ageing process, there is around a 20% loss in the thickness of the dermal layer, which causes a reduction in the blood supply to the area, as well as a reduction in the number of nerve endings and collagen. This leads to a decrease in sensation, temperature control, rigidity and moisture control (Cooper, 2006).

The subcutaneous layer (hypodermis) lies below the dermis and is composed of adipose and connective tissue. As the subcutaneous layer becomes thinner, the face, neck and hands can become especially susceptible to skin tears (Resnick, 1993). The vascular bed also becomes more fragile, which can lead to bruising (senile purpura) that may predispose to skin tears (White et al, 1994).

Thus, the changes within all layers of the skin increase the risk of skin tears due to the ease of separation of the skin layers in the elderly (Payne and Martin, 1993; Baranoski, 2001; Morey, 2007) and the very young (Beldon, 2008).

## SKIN TEARS

LeBlanc et al (2011) offered the following definition of skin tears: "A wound caused by shear, friction, and/or blunt force resulting in separation of skin layers. A skin tear can be partial-thickness with separation of the epidermis from the dermis, or full-thickness with separation of both the epidermis and dermis from underlying structures."

Skin tears commonly occur on the extremities,

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including the lower limb, the front of the hands and the arms (Baranoski, 2001; 2003). While skin tears may occur on the front of the leg or on the shin bone, these tears are usually called 'pretibial lacerations' and require careful assessment of the blood supply to the lower limb. Consideration should be given to the use of compression, as outlined by Beldon (2008). Any lower leg wound that does not show signs of healing within 2 weeks should be classified as a leg ulcer and assessed and managed accordingly (National Institute for Health and Care Excellence [NICE], 2013).

### SKIN TEAR RISK

Clinicians should assess where skin tears are most likely to occur and, where possible, should implement preventative strategies. Risk factors include:

- ▶▶ A history of skin tears
- ▶▶ Mature/immature skin
- ▶▶ Taking multiple medications, including steroids
- ▶▶ Discoloration of skin caused by blood leakage into the subcutaneous tissue as a result of trauma to the underlying blood vessels (ecchy)
- ▶▶ Impaired mobility
- ▶▶ A need for assistance with personal care
- ▶▶ Poor nutrition and hydration
- ▶▶ Cognitive/sensory impairment
- ▶▶ Comorbidities, including chronic heart disease, renal failure and cerebral vascular accident
- ▶▶ High care dependency (i.e. require assistance showering, dressing, or transferring)
- ▶▶ Dry, fragile skin
- ▶▶ Poor skin care, which has resulted in poor skin condition.

The most common cause of skin tears are blunt traumas or falls that occur while performing daily living activities. Skin tears can also be dressing, treatment or equipment related (i.e. with wheel chairs or bed rails; LeBlanc et al, 2013) or occur during patient transfer.

### ASSESSMENT

Wound assessment should establish the type of injury, with a focus on the prevention of further injury (Cooper, 2006; Lloyd Jones, 2010; Stephen-Haynes and Carville, 2011; Le Blanc and Baranoski, 2015), and determine location, dimensions (length, width and depth), percentage of viable/nonviable tissue, degree of flap necrosis, presence of any

haematoma, type and amount exudate and integrity of surrounding skin.

### CLASSIFICATION

There have been many skin tear classification tools that have been developed in the past (e.g. Payne and Martin, 1990; 1993). In 2007, the Skin Tear Audit Research (STAR) classification system was launched (Carville et al, 2007) and became the basis of the International Skin Tear Advisory Panel (ISTAP) Skin Tear Classification tool (LeBlanc et al, 2013). The tool kit includes the Skin Tear Decision Algorithm (*Figure 1*) and the Skin Tear Classification (*Figure 2*). The toolkit was reviewed by 13 countries and received input from a wide group of 46 international wound care reviewers.

### MANAGEMENT OF SKIN TEARS

The aim of skin tear management is to minimise the risk of infection and to close the wound. A six-point management regimen should be adhered to, involving wound assessment, cleansing, closing the wound edges, dressing application, protection of the skin and prevention of further skin damage. Moist wound therapy dressings can enhance the wound healing environment by maintaining optimal moisture levels to promote cell growth and healing. Additionally, optimal wound healing cannot occur unless surface slough, biofilms and foreign debris have been removed, thus lowering the bioburden (Sibbald et al, 2006).

Saline or water should be used to clean the wound to remove dirt or grit, and control bleeding. Surrounding skin should then be gently patted dry. If the skin flap is viable, the edges must be brought together, with the flap gently eased back into place (i.e. the flap is used as a dressing) using tweezers or a gloved finger. Any approximation should be recorded (Cooper, 2006).

For flaps that are difficult to align, a moistened, non-woven swab should be applied for 5–10 minutes to rehydrate the area. Wound closure strips should be used to secure large skin flaps; sutures and staples are not recommended due to the fragility of the skin. A skin barrier product should be applied to protect the surrounding skin.

### DRESSING APPLICATION

Once the flap is secured, a non-adherent dressing

Figure 1. The Skin Tear Decision Algorithm (LeBlanc et al, 2013)

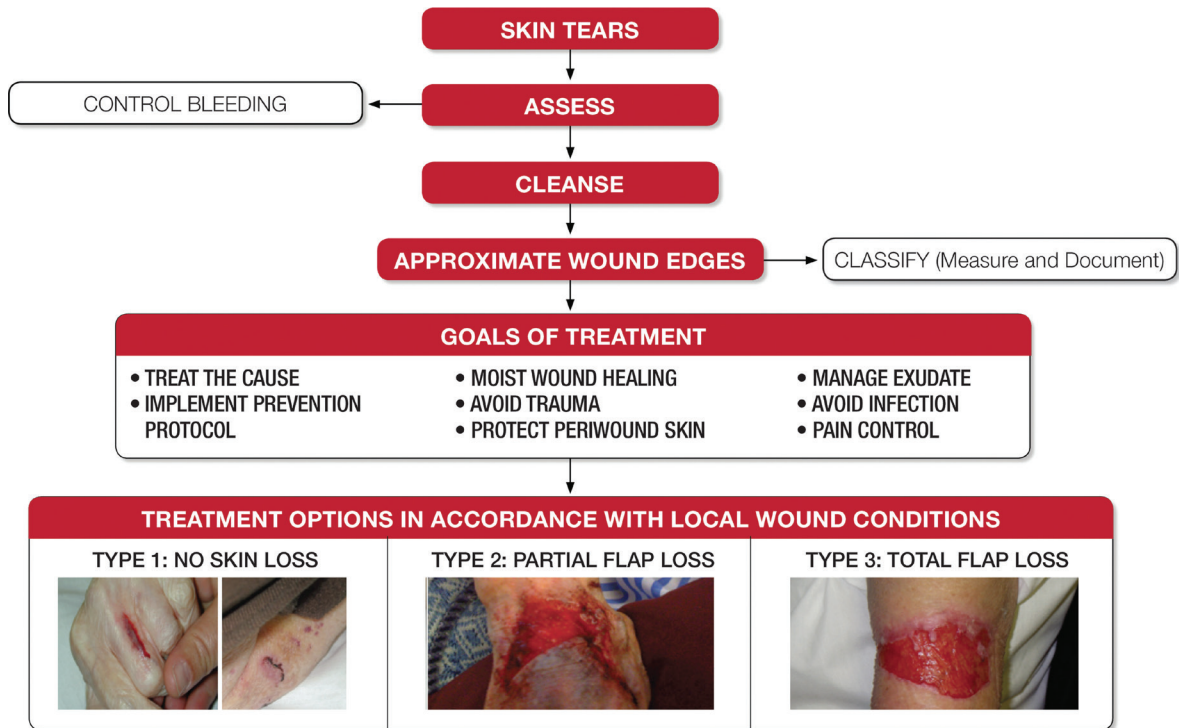


Figure 2. iSTap Skin Tear Classification System (LeBlanc et al, 2013)

# ISTAP Skin Tear Classification

Type 1: No Flap Loss



Linear or flap tear which can be repositioned to cover the wound bed

Type 2: Partial Flap Loss



Partial flap loss, which cannot be repositioned to cover the wound bed

Type 1: Complete Flap Loss



Total flap loss exposing entire wound bed

should be applied, without tension. An appropriate dressing for the specific wound condition and category of skin tear should be selected, such as silicone foams, ensuring a 2-cm overlap around the wound. The wear time will be dependent on the type of dressing and volume of exudate.

Traditional adhesive strips should be avoided where possible as they may cause traction and further trauma (Meuleneire, 2003). Gentle micro-adherent wound closure products may be considered (i.e. Mepitel<sup>®</sup>, Silflex<sup>®</sup>, Atrauman<sup>®</sup> Silicone). Where the skin is very fragile, the dressing should be left in place for up to 5 days to avoid disturbing the skin flap. The dressing should be marked with an arrow to indicate the direction of removal.

#### REVIEW AND REASSESS

At each dressing change (approximately every 3–7 days), the dressing should be gently removed, working away from the attached skin flap. Silicone-based adhesive removers can be used to avoid trauma to the surrounding skin (Meuleneire, 2003; Beldon, 2008).

On dressing removal, the wound should be evaluated, with care taken not to disrupt the skin flap. Changes in wound status should be monitored and where the skin or flap is pale, dusky or darkened (healthy skin would be red granulation tissue and healthy epithelialising would be pink), it is important to reassess within 24–48 hours as further breakdown may occur.

Signs of infection must also be monitored and managed appropriately (World Union of Wound Healing Societies [WUWHS], 2016). Treatment can be stopped if complete epithelialisation occurs (International Wound Infection Institute [IWII], 2016). Digital photography should be used where possible to document the wound.

#### WHEN IS REFERRAL NECESSARY?

Some complex skin tears are full-thickness skin injuries, or they involve significant bleeding or haematoma formation that require surgical review and intervention. Caution should be exercised where there is concern regarding blood clotting ability or blood supply. An inter-professional and collaborative approach to management is required to optimise healing outcomes for the individual.

#### SKIN TEAR PREVENTION

As most skin tears occur during routine patient care activities (Everett and Powell, 1994), it is important to create a safe environment. Identifying and removing factors that cause skin tears can help to reduce such injuries, particularly in older people. Patients and carers should be made aware of the risk of skin tears.

To create a safe environment for the older person, healthcare professionals and staff should:

- ▶ Ensure adequate lighting and ease of reaching the light switches
- ▶ Remove rugs and excessive amounts of furniture
- ▶ Ensure any small furniture (e.g. night table, chairs) in the immediate surroundings is positioned carefully to avoid unnecessary bumps or knocks. Sharp borders on furniture or bed surroundings should be padded
- ▶ Where possible, reduce or eliminate pressure, shear, and friction using pressure-relieving devices and positioning techniques
- ▶ Use appropriate aids when transferring patients and employ appropriate manual handling techniques according to guidance (e.g. lifting device or slide sheets). Bed sheet should never be used to move the patient as this can contribute to damage by causing a dragging effect on the skin (Beldon, 2008)
- ▶ Encourage the wearing of appropriate footwear and clothing to reduce the risk of injury
- ▶ Encourage the wearing of socks to protect the pretibial area.

#### SKIN PROTECTION

An essential aspect of skin protection is keeping the skin well-hydrated by maintaining good nutrition and fluid balance. Cleansing, moisturising and protecting the skin is vital to maintain skin integrity.

It is important for the patient to use pH-balanced soap, moisturiser and cleansing solutions, and an emollient should also be applied. Individuals with dry skin on their arms and legs will benefit from the application of an appropriate moisturising cream twice a day (Hanson et al, 2005). Skin-damaging fluids, e.g. incontinence, should be removed. Caution must be applied when applying adhesive tape to at-risk skin. Fragile skin should be protected with tubular or roller bandages, or long-sleeved clothing.

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#### PAIN ASSESSMENT AND MANAGEMENT

It is important to assess and manage pain as skin tears can be painful due to trauma affecting the superficial nerve endings in and around the wound (European Wound Management Association [EWMA], 2006; Beldon, 2008). The clinician can be assisted in this by the use of a visual analogue scale (VAS) to grade the patient's pain and a number of factors can assist in pain management (WUWHS, 2004; Mudge and Orsted, 2010). The areas most pertinent to skin tear and pain management are:

- ▶▶ To involve of the patient
- ▶▶ To use warm cleansing solution to irrigate the wound
- ▶▶ To select atraumatic dressings that minimise trauma and pain during application and removal
- ▶▶ To use a silicone-based adhesive remover to remove adherent dressings
- ▶▶ To identify and manage pain
- ▶▶ To evaluate each patient's need for pharmacological and non-pharmacological strategies to minimise wound-related pain
- ▶▶ To treat factors that may delay healing and prolong pain
- ▶▶ To treat factors that may cause wound-related pain.

#### SKIN TEAR AUDIT REVIEW

The Worcestershire Health and Care NHS Trust has developed a Skin Tear Audit Review (documents collated in the so-called Star Box) to encourage and support clinicians to focus on prevention and where skin tears occur to assess and manage skin tears effectively (Stephen-Haynes, 2012). This allows clinicians to implement a care plan for a patient with a newly occurring skin tear in a timely manner without the need for referral to tissue viability, the A&E department, or minor injuries unit. The Skin Tear Audit Review includes:

- ▶▶ Identification of patients at risk of skin tears
- ▶▶ Prevention of skin tear guidance
- ▶▶ Skin tear assessment chart
- ▶▶ Skin tear management flow chart
- ▶▶ Skin tear classification chart
- ▶▶ Skin tear dressing algorithm
- ▶▶ Skin tear prevention care plan
- ▶▶ Skin care leaflet
- ▶▶ How to contact the tissue viability team.

The Star box is currently available at Worcestershire Health and Care NHS Trust and

will be available at the Worcestershire Acute Hospitals NHS Trust soon.

#### CONCLUSION

The prevention of skin tears is an important aspect of skin care in older people and premature infants. It is important that the older person with a skin tear is treated promptly and appropriately to prevent complications and optimise healthcare resources. An awareness of the anatomy of the skin and the effects that ageing has on it can help clinicians to identify these wounds and address factors that put the patients at risk of developing skin tears. It is important for clinicians to be aware of the occasions when skin tears are more likely to occur such as during assistance with personal care. It is important for the clinician to have a thorough knowledge of skin tear management with consideration given to the patient's comorbidities, social circumstances, mobility, continence and psychological wellbeing. The clinician is required to assess and agree a plan of care for those with skin tears while more junior staff and healthcare assistants are ideally placed to assist in the prevention of skin tears. WUK

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