All Wales Tissue Viability Nurse Forum

Best Practice Statement
The Assessment and Management of Skin Tears

Endorsed by

Supported by an unrestricted educational grant from

IN ASSOCIATION WITH
The All Wales Tissue Viability Forum

This guideline for Best Practice has been written by Menna Lloyd Jones, Senior Nurse Tissue Viability, Betsi Cadwaladr University Health Board, and Clare Morris, Former Tissue Viability Nurse Advisor, Betsi Cadwaladr University Health Board. The guideline has been reviewed and endorsed by the All Wales Tissue Viability Forum, February 2011.

The All Wales Tissue Viability Forum was formed in September 2003 and has the following aims within the six key principles from the Institute of Medicine (Welsh Assembly Government, 2005):

**Safety, Effectiveness, Patient-Centred, Timely, Efficient and Equitable**

1. To raise awareness of tissue viability in order to improve patient outcomes
2. To raise awareness of the impact of tissue viability in health economics
3. To promote evidence-based practice in tissue viability and influence appropriate policy across Wales
4. To be recognised by the Welsh Assembly Government as a knowledgeable and valuable resource
5. To contribute to the body of knowledge by initiating and participating in tissue viability research and audit
6. To improve patient outcomes by maintaining the links with academia and disseminating knowledge relating to tissue viability to all healthcare providers
7. To work in partnership with industry in order to improve patient care
8. To provide peer support to all tissue viability nurses working in Wales.
The Prevention and Management of Skin Tears

Background
A review of the tissue viability nurse’s caseload within Betsi Cadwaladr University Health Board identified an increase in the incidence of skin tears throughout the local population of elderly patients. In an attempt to reduce the incidence and ensure the provision of appropriate care, the tissue viability nurses (TVNs) undertook a literature search using CINHAL between 1995 and 2010. The literature review identified gaps and weaknesses. There was no standardised prevention strategy and there was confusion with regard to the appropriate management of skin tears.

Purpose
The purpose of this Best Practice Statement is to provide appropriate knowledge in order to prevent the development of skin tears and/or to facilitate appropriate treatment of category 1 and 2 skin tears (Payne and Martin, 1993). It is not the intention of this document to discuss the treatment of deep prefinancial lacerations or other deep category 3 skin tears, which may require surgical intervention.

Introduction
Skin tears are defined as a traumatic wound resulting from separation of the epidermis from the dermis, as a result of friction and/or shearing forces (Malone et al, 1991; Fleck, 2007). Skin tears represent a significant problem affecting the elderly with prevalence rates of between 14% and 24%. An estimated 1.5 million skin tears occur in elderly residents of institutions in the United States every year (Baranoski, 2005).

The majority of skin tears are caused as a result of trauma, where the epidermis is displaced but still retains a blood supply. (Carville et al, 2007). Approximately 80% of all skin tears are predominately seen on the arms and dorsal aspect of the hands, and less frequently the lower limbs (Baranoski, 2003). With an increasing elderly population, it is estimated that the incidence of skin tears will become one of the largest problems in wound care. Identifying the risk and providing evidence-based care is therefore paramount (Beldon, 2006; Benbow, 2009).
Anatomy and physiology of the skin

In order to prevent skin tears it is important to have a basic understanding of the anatomy and the effects of ageing on the skin, as well as being able to recognise and address factors that put the patients at risk of developing skin tears.

The skin is the largest and most visible organ in the body, and is made up of two main layers; the epidermis and the dermis. Lying beneath the dermis is the subcutaneous layer, or hypodermis (Timmons, 2006).

The epidermis is the outermost layer of the skin and is very thin, with a thickness of only 0.1 mm. The epidermis receives oxygen system is the Payne and Martin Classification, which was developed in the late 1980s and revised in 1993 (Payne and Martin, 1993; Baranoski, 2003).

Using the Payne and Martin Classification system (1993) skin tears can be classified as follows:

**Category I:** Skin tear without tissue loss.

**Category IIa:** Scant tissue loss. Partial thickness in which 25% or less of the epidermal flap is lost and at least 75% or more of the dermis is covered by the flap.

**Category IIb:** Moderate to large tissue loss. Partial thickness wound, in which more than 25% of the epidermal flap is lost and more than 25% of the dermis is exposed.

**Category III:** Skin tears with complete tissue loss. Epidermal flap is absent.

---

Table 1. Summary of the function of skin that declines with age

- Epidermis becomes thinner and flatter, uneven distribution of melanocytes leading to uneven pigmentation
- Flattening of the dermal–epidermal junction, increased susceptibility to friction/shearing forces, resulting in blistering and minor injuries
- Dermis has decreased bulk owing to collagen atrophy
- Decreased tactile sensitivity and pain perception, leading to increased danger of injury
- Skin becomes wrinkled owing to depletion of elastic fibres
- Decreased capillary loops in the dermis increase dangers of both hypo- and hyperthermia
- Skin becomes dry as a result of atrophy of sebaceous glands

Adapted from: Baranoski (2003); Beldon (2006)
Guidelines for the Assessment and Management of Skin Tears

and all its nutrients by diffusion from the dermis (Butcher and White, 2005). The epidermis is firmly attached to the dermis at the dermo–epidermal junction (Figure 1).

The dermis is made up of two layers, predominately comprising fibrous proteins, collagen and elastin (connective tissue), which give the skin its strength and elasticity (Flanagan, 1997). Below the dermis lies the subcutaneous layer, or hypodermis. The subcutaneous layer is made up of adipose tissue, connective tissue and the larger blood vessels. This layer provides support to the dermis and the fat stored in the subcutaneous layer provides protection to the internal structures (Timmons, 2006).

The effects of ageing on the skin

The age-related changes to the skin are both visible and structural. For example, there is an overall thinning of the epidermis, which is particularly noted after the age of 70 years, and is more prevalent in women than in men (Desai, 1997). This results in the possibility that the skin becomes more susceptible to damage from mechanical forces such as moisture, friction and trauma (Wounds UK, 2006). There is also a flattening out of the dermo–epidermal junction, which makes it more fragile and more susceptible to shearing damage (Desai, 1997).

The paper-thin appearance of the skin is a common sign of ageing and can be attributed to an estimated 20% reduction in the thickness of the dermis. The thinning of the dermis results in a reduction in the blood supply, nerve endings and collagen, which in turn leads to a decrease in sensation, temperature control, rigidity and moisture retention (Wounds UK, 2006). The collagen and the elastic fibres which provide the strength and elasticity of the skin loses some of its elasticity, which in turn results in the skin becoming less elastic, less resilient and more lax. Sebaceous glands atrophy and the skin becomes dry. The outward visible signs of the effects of ageing are the appearance of wrinkles and skin folds (Desai, 1997; Burr and Penzer, 2005).

Assessment for prevention

Ousey (2009) stated that in order to give appropriate preventive care, it is important to identify those factors that put the patients at risk of developing skin tears, which are listed below.

Preventing skin tears

The literature review demonstrated that little has been written with regard to preventing skin tears. Baranoski (2003) suggests that preventing skin tears is predominately taking a common sense approach to patient care, and identifying and addressing the relevant risk factors, which can be separated into four categories: general principles (Table 2); patient handling (Table 3); skin care (Table 4); dressings (Table 5).

Skin tears management guideline

The aim of this best practice statement is to examine the more conservative treatment options for category 1 and 2 injuries only. Skin tear treatment is dependent on the category of the tear.
### Table 2. General principles

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Preventive strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>• History of previous skin tears</td>
<td>• Check for previous history of skin tears</td>
</tr>
<tr>
<td>• Presence of ecchymosis (discoloration of an area of skin caused by leakage of blood into the subcutaneous tissues as a result of trauma to the underlying blood vessels). Clinical appearance: bruising or petechiae (tiny purple or red spots) (Figure 2)</td>
<td>• Assess/recognise fragile, thin, vulnerable, ecchymotic skin, and be aware of the risk of self-harm</td>
</tr>
<tr>
<td>• Poor quality nutritional intake either over- or under-nutrition</td>
<td>• Provide adequate nutrition and hydration. MUST (Malnutrition Universal Screening Tool) screening and treatment in accordance with MUST guidance (Johnston, 2007)</td>
</tr>
<tr>
<td></td>
<td>• A healthy, balanced diet can help maintain tissue viability. Obese and under-nourished patients can be at risk of adverse affects—both on tissue/body structure and function. Malnutrition will result in impaired and prolonged healing of damaged skin, and leave the patient vulnerable to infection (Johnston, 2007)</td>
</tr>
<tr>
<td>• Dehydrated skin</td>
<td>• Meet fluid requirements 1500 ml daily (equates to 8–10 cups or glasses)</td>
</tr>
<tr>
<td></td>
<td>• Dehydrated skin is more fragile and is more susceptible to breakdown. Also leads to tissue profusion by blood, limiting oxygen and nutrient supply (Johnston, 2007)</td>
</tr>
<tr>
<td>• Prolonged use of corticosteroids</td>
<td>• Be aware of the effect of steroids on the skin and plan appropriate skin care</td>
</tr>
<tr>
<td>• Impaired sensory perception (e.g. diabetics) and disease processes (e.g. renal failure, chronic heart failure)</td>
<td>• Establish current medical history</td>
</tr>
<tr>
<td>• Cognitive impairment/dementia and involuntary movements</td>
<td>• Upholster sharp borders of furniture and bed surroundings etc with soft material</td>
</tr>
<tr>
<td>• Visual impairment</td>
<td>• Remove obstacles such as low furniture (i.e. coffee tables, chairs) in the immediate surroundings</td>
</tr>
</tbody>
</table>
### Table 3. Patient handling

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Preventive strategy</th>
</tr>
</thead>
</table>
| • Impaired mobility and dependency on others for care, such as bathing, transferring and positioning | • Ensure patient and staff wear comfortable shoes to prevent falls  
• Provide a safe environment to prevent trauma  
• Provide adequate lighting  
• Ensure patient and staff have short fingernails  
• Apply clothing and compression stockings carefully  
• Exercise extreme caution and a gentle touch when bathing, dressing and/or transferring individuals at risk (most skin tears occur during routine patient care activities)  
• Exercise extreme caution when patients get in and out of wheelchairs, e.g. footrests  
• Ensure patient and staff avoid wearing jewellery that could snag the skin  
• Transport patients carefully (e.g. appropriate selection of sling types), be aware and avoid protruding components of the hoist and apply appropriate hoist use |
| • Presence of friction, shearing and pressure                                | • Employ good manual handling technique (e.g. slide sheets; follow local manual handling protocol)                                                       |

### Table 4. Skin care

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Preventive strategy</th>
</tr>
</thead>
</table>
| • Presence of ecchymosis (discoloration of an area of skin caused by leakage of blood into the subcutaneous tissues as a result of trauma to the underlying blood vessels). Clinical appearance: bruising or petechiae (tiny purple or red spots) (Figure 2) | • Assess/recognise fragile, thin, vulnerable, ecchymotic skin  
• Consider the potential risk of skin damage from pets, especially cats  
• Be aware of the risk of self-harm  
• Regularly review medication, e.g. aspirin and steroids  
• Protect fragile skin by covering with, e.g. stockinet, long sleeves |
| • Dry skin/dehydration                                                       | • Use emollient to rehydrate limbs at least twice every day  
• Avoid the use of soap which can cause drying of the skin |
| • Advanced age                                                               | • Assess for risk factors and plan preventive strategy                                                                                                |

### Table 5. Dressings

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Preventive strategy</th>
</tr>
</thead>
</table>
| • Inappropriate use of adhesive dressings.                                  | • Traditional adhesives should always be avoided when the skin has been assessed to be at risk. Use gentle atraumatic dressings, e.g. Allevyn Gentle Border, Mepilex or Mepilex Border  
• If additional fixation is needed, consider securing dressing with tubular dressings (e.g. Tubifast). If it is necessary to secure the dressing with tape, Do not apply the adhesive tape directly on to the skin, but ensure that the dressing is large enough to cover the limb and apply adhesive tape on to the dressing only  
• If an adhesive dressing has been applied and is difficult to remove, support the skin while removing the dressing; gently grasp one edge and slowly peel the dressing from the skin in the direction of hair growth. Avoid skin trauma by peeling the dressing back rather than pulling it up from the skin  
• Consider saline or solvents (e.g. Appeel) to loosen the bond |
Cooper (2006) states that the most effective way of treating a skin tear is to use the skin flap as a dressing and where possible, bring the wound edges together. To optimise healing, management of these wounds is best undertaken at the time of injury (Wounds UK, 2006). However, the best treatment options for the most serious type 2 and 3 tears may be surgical intervention and/or referral to a plastic surgeon. Assessment of skin tear categories should always be completed by qualified competent practitioner.

Management
Assessment should include a full history of the wound:

- Underlying disease process (e.g. diabetes, peripheral vascular disease)
- The cause of the injury
- Time of injury
- Previous skin injury
- Status of surrounding skin
- Nutritional status
- Medication
- Wound location
- Size and category of wound.

Aims of treatment

- To stop the bleeding
- Preventing wound infection
- Minimising pain and discomfort
- Reestablishing skin integrity.

Step-by-step management of category 1 and 2 skin tears

- Cleanse the wound with warm irrigation fluid as appropriate
- Without pulling or applying tension, gently unfold and smooth out the flap completely over the wound (Figures 4 and 5)
- Place an atraumatic contact layer (e.g. Silflex or Mepitel) or atraumatic all in one dressing (e.g. Mepilex Border or Allevyn Gentle Border) over the flap, keeping the flap in place. The use of paper adhesive tapes (i.e. Steristrips) or sutures may cause additional traction and trauma, which can lead to further damage (Meuleneire, 2002). If using an atraumatic all-in-one dressing to ensure that the flap is not disturbed during removal, always mark the dressing with an arrow to indicate the direction of removal
- The atraumatic dressing should remain in place for a minimum of 5 days to allow the flap to adhere to underlying tissues
- Where required, a non-adhesive dressing pad is placed over the contact layer to absorb exudate. Do not use atraumatic all in one dressings with atraumatic contact layers.
- Where required, the dressing pad is held in place by a tubular bandage and changed as necessary.
- Monitor wound frequently for signs of wound infection, especially for the at-risk patients (e.g., diabetics or immunocompromised). Signs of wound infection are increased pain and exudate levels, redness, heat oedema and malodour.
- From day 6, the atraumatic contact layer/dressing can be removed. Remove in the direction of skin flap indicated by the arrow (Figure 6).

**NB** if the skin flap becomes necrotic refer to tissue viability nurse or seek medical advice.

**First aid treatment for carers and non-nursing staff**

Providing fundamental care places the healthcare assistants/carers and other health professionals in an ideal place to prevent and administer safe and prompt treatment, as well as encouraging patients to adopt strategies that will keep their skin well hydrated and prevent the development of skin tears.

**Treatment**

- Ensure that the patient is safe from further trauma.
- With any skin tears prompt treatment is essential with category 1 and 2 tears in order to ensure that the flap remains viable. It is important to replace the flap as soon as possible. It is therefore vital that the injury is reported to a registered nurse or patient taken to Accident and Emergency (A&E)/Minor Injuries Unit (MIU) as soon as possible; do not attempt to remove or replace the damaged tissue.
- Do not apply any adhesive dressings on to category 1 or 2 skin tear. Cover with a clean piece of cling film or similar; place gently over the wound, making sure that it is not wrapped around the limb and refer to a registered nurse or GP.
- With category 3 skin tears it is safe to apply an atraumatic wound dressing and inform the GP or registered nurse as soon as possible. If there is extensive tissue loss or profuse bleeding, refer immediately to a registered nurse or take the patient to A&E/MIU as per bullet point 2.

*Figure 6*
References


