

## Promoting Evidence-Based Nursing Practice: *OLDER PEOPLE AND SKIN TEARS*

### Introduction

The skin, or the integumentary system, is the body's largest organ composing one sixth of total body weight. As one ages, significant alterations occur in the structure and functioning of this important organ. Older adults are more susceptible to traumatic skin damage and have a more frequent occurrence of skin tears. This article will examine the changes that occur in skin of older people followed by a discussion of management of a common traumatic wound: skin tears.

### The Effects Of Ageing On The Skin

The effects of ageing on the skin are the result of intrinsic functional alterations and cumulative environmental damage (Yaar and Gilchrest, 1990). Ageing results in changes to almost all components of skin structure.

The following points outline some of the changes that the skin undergoes as it ages and the effects this may have on wounds and healing:

1. Whilst the epidermis does not alter in thickness, there is a decrease in dermal thickness which leads to 'thinning' of the skin (Fergusson and MacLellan, 1997, Kurban and Bhawan, 1990).
2. The subcutaneous fat layer also becomes thinner (Matthew, 2001). Thinner skin is more likely to sustain injury. It is interesting to note that this atrophy of the subcutaneous tissue is most pronounced in the face, back of the hands and shins (Kurban and Bhawan, 1990). Older people are most likely to be subjected to trauma in these areas.
3. The epidermal – dermal papillae become flattened resulting in increased susceptibility to shearing and friction (Fergusson and MacLellan, 1997, Kurban and Bhawan, 1990).
4. The rate of turnover of epidermal cells is reduced. In young adults epidermal turnover time is 21 days. This increases to 40 days by the mid-thirties and slows even further with advancing age (Matthew, 2001). It has been suggested that epidermal keratinocytes in the aged have decreased mitogenic potential (Yaar and Gilchrest, 1990). This may prolong healing time.
5. Collagen in the skin reduces with age. Collagen fibres become compressed and the fibre arrangement is altered (Matthew, 2001, Kurban and Bhawan, 1990). Alterations in collagen and protein synthesis may contribute to delayed wound closure.
6. The micro-circulation of the skin becomes collapsed and disorganised with ageing (Matthew, 2001, Fergusson and MacLellan, 1997, Kurban and Bhawan, 1990). This results in an increased risk of bruising and haematoma and may reduce blood supply to the skin which will prolong healing time.
7. The glands of the skin also demonstrate reduced functioning with increasing age. The eccrine sweat glands, apocrine and sebaceous glands all have decreased production (Kurban and Bhawan, 1990). This leads to dry, itchy, inelastic skin (Matthew, 2001).

These effects are more dramatic in persons who have had long term exposure to the sun. Some of the added effects may be seen as irregular pigmentation, atrophy, deep wrinkling and begin and malignant neoplasms (Yaar and Gilchrest, 1990).

It is important that clinicians assess skin care and strategies to avoid trauma in the care of older persons. The use of moisturiser, soaps with a slightly acidic pH, liquid soaps or

soap substitutes, wearing of long clothing and care when using mechanical aids and manual handling devices are some interventions that can be employed in assisting to maintain the skin integrity of older persons. Education supported by organisational protocols and guidelines will support the quality care of older person's skin and assist in minimising skin injury. As the well known proverb states: 'prevention is better than cure!'

### The Effects Of Ageing On Wound Healing

It has been demonstrated that "healthy humans older than 65 years of age have delayed epithelialisation of superficial split-thickness skin defects when compared to a healthy, young population" (Holt et al, 1992). Some of the age related changes that may influence this include:

- inflammatory reactions are reduced in intensity and onset;
- evidence that fibroblast migration and responsiveness is reduced;
- experimental results have shown that capillary growth slows with increasing age, and
- keratinocytes are less sensitive to growth factors without a corresponding reduction in sensitivity to growth inhibitors (Fergusson and MacLellan, 1997).

With increasing age there is also a greater incidence of systemic disease and organ degeneration. Conditions such as diabetes, poor circulation, anaemia, poor nutritional status and compromised immune status can adversely affect wound healing (Fergusson and MacLellan, 1997). A decrease in mobility, reliance on aids and decreased sensory acuity also contributes to the likelihood of traumatic injury. Once injury has occurred, it is vital therefore that a comprehensive assessment of the person with a wound is undertaken in order to identify and where possible, control these factors in order to promote optimal health and healing outcomes.

### Skin Tears

Due to the altered physiology of the aged skin, the increased prevalence of disease and sensory alteration, older people are more susceptible to skin tears. Whilst there is little published data on the prevalence of skin tears, one 347 bed extended care facility reported a skin tear rate of 41.5% of all wounds in 1991 (Everett and Powell, 1994).

White (2001) reports the following as specific risk factors relating to skin tears:

- Over 85 years of age
- Altered sensory status (eg reduced hearing, vision and/or sensation)
- Independently ambulant
- Previous skin tear/s
- Tendency for bruising
- Dependent on others for all needs
- Use of equipment (eg wheelchairs, mechanical lifters)
- Poor nutrition
- Altered mental state (eg dementia)
- Altered neuromuscular status (eg contractures)
- Polypharmacology

A skin tear is defined as a "traumatic wound occurring principally on the extremities of older adults, as a result of friction alone or shearing and friction forces which separate the epidermis from the dermis (partial thickness wound) or which separate both the epidermis and the dermis from underlying

structures (full thickness wound)" (Payne and Martin 1993 in Coleman, 2001).

Skin tears may be further classified according to tissue loss and pattern of injury:

Category I	Edges of the skin tear are able to be approximated with no tissue loss Type A: Linear Type B: Flap
Category II	Varying amounts of tissue loss Type A: Scant tissue loss <25% Type B: Moderate tissue loss >25%
Category III	Complete tissue loss

(White, 2001)

A definition and classification system such as this provides a common language for assessment and documentation of the degree of skin tear injury.

### Treatment Of Skin Tears

Once a skin tear has occurred, prompt intervention will ensure the best possible outcome. Whilst some skin tears may not go on to heal, with correct management, many will heal without complication. The aims of skin tear management are to provide protection from further trauma, minimise the risk of infection and promote optimal conditions for healing (Everett and Powell, 1994).

The following are recommended guidelines for skin tear management:

- Haemostasis and wound cleansing*
  - Ensure bleeding is controlled through the application of gentle pressure or a calcium alginate dressing.
  - If the wound is contaminated it may be washed with an antiseptic such as povidone iodine (which should then be rinsed off with normal saline after 5 minutes). This will assist in minimising the risk of infection developing. (Coleman, 2001)
- Care of the skin flap*
  - Remove any blood clot from the underside of the skin flap and the wound bed to ensure good contact between the flap and the wound bed when the flap is replaced. Cotton tipped probes and normal saline are usually sufficient for this task.
  - Lay the skin flap over the wound bed. Do not stretch the skin as this may cause further damage. (Coleman, 2001). Ensure the skin is not folded onto itself as this will prevent the skin flap adhering to the wound bed. Any ragged skin flap edges may be carefully trimmed.
- Choose an appropriate dressing*
  - No one dressing will be suitable for all skin tears. An assessment must be made by the Nurse which considers the level of exudate, classification of the skin tear, size and site of the skin tear, condition of the surrounding skin and client factors (such as possible interference with dressings) (Everett and Powell, 1994).
  - Tapes to secure the flap (eg Steri-strips®) may be used on category I and IIA skin tears, however it is important not to attempt to remove these tapes. They should be left to come away from the wound of their own accord.
  - As adhesive dressings may cause trauma on removal, the use of non-adherent dressings is advocated (Coleman, 2001). If providing a waterproof dressing is an important consideration,

a non-adherent dressing applied over the skin tear itself with a waterproof covering (eg a film dressing) may be used (Flemister, 2001).

- Marking the exterior of the dressing with arrows to indicate in which direction to remove the dressing (ie the opposite direction to that in which the skin flap was raised) can help reduce any further trauma or disruption to healing (Coleman, 2001 and Everett and Powell, 1994).

#### 4. Monitor progress

- If there is concern that the wound may be contaminated it is recommended that the wound is observed on a daily basis for the first 5 days to exclude infection. Otherwise dressings should be left in place for 5-7 days (Coleman, 2001). This allows the skin flap to adhere without the potential trauma which may occur when dressings are changed. If the wound has not healed in 14 days, consideration must be given to identifying and controlling other aetiological factors that may be preventing healing. (eg venous hypertension) (Coleman, 2001).

Skin tear management encompasses a multi-faceted approach which involves prevention, consistent assessment and classification systems and standardised treatment regimes. Individuals and organisations caring for persons at risk of sustaining skin tears need to explore various strategies to ensure the knowledge and skills to prevent and manage skin tears are implemented. The most important aspect of care is of course to work with the older person toward a healed wound.

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