Skin tears: the underappreciated enemy of aging skin


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The remarkable improvements in life expectancy over the past century have created a shift in the global population (World Health Organization [WHO], 2011). Globally, it is estimated that as aging populations increase in number, so too will the prevalence of chronic diseases (WHO, 2011). Caring for the aging population can be particularly challenging for clinicians due to a multitude of co-existing issues associated with aging. One of those issues is the prevention and management of skin tears (STs) (LeBlanc and Baranoski, 2009). Skin tears are acute wounds that are an underappreciated enemy of aging skin. Despite the acute nature of these wounds, their minimisation and mismanagement by healthcare professionals, they have a high propensity to develop into chronic wounds increasing health burdens on individuals and care agencies. The key to decreasing the impact of STs on the aging population is to implement a strategic prevention and management programme. The purpose of this article is to provide a brief overview of the prevalence and incidence of skin tears among aging individuals, provide an accepted skin tear definition, introduce a validated means for classifying skin tears, and highlight the International Skin Tear Advisory Panel's skin tears prevention and management framework.

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It is well documented that with aging, the skin undergoes physiological changes and that these changes can be potentiated by chronic illness and environmental factors (Baranoski et al, 2012; Koyano et al, 2014; LeBlanc et al, 2011). The skin is an underappreciated organ with diverse functions ranging from protection, thermal regulation, metabolism, sensation, synthesis and communication (Baranoski et al, 2012).

Skin changes related to the anatomical and physiological changes associated with aging equate to a higher risk for alterations in skin integrity in the elderly population (Baranoski et al, 2012; Koyano et al, 2014). Changes include flattening of the dermal-epidermal junctions, which reduce the skin's resistance to shear and friction forces. Koyano et al (2014) maintain that the skin of older people (aged 65 or older) is predisposed to skin tears (STs) because of the skin changes that occur during the aging process. These skin changes can be magnified by other factors, such as certain medication use, reliance on others for activities of daily living (ADLs), sensory loss, limited mobility, use of assistive devices, and impaired cognition. A frequent byproduct of these skin changes in the aging population is the heightened risk for the development of STs (Carville et al, 2014).

STs are specific wounds observed uniquely in the extremes of age and in the critically and chronically ill, and have been hypothesised to be highly prevalent and particularly troublesome for the aging population (LeBlanc et al, 2011). The International Skin Tear Advisory Panel (ISTAP) defines a ST as "a wound caused by shear, friction, and/or blunt force resulting in separation of skin layers. A skin tear can be partial-thickness (separation of the epidermis from the dermis) or full-thickness (separation of both the epidermis and dermis from underlying structures)" (LeBlanc et al, 2011).

Skin tears: extent of the problem

ST prevalence among adult (greater than 18 years of age) populations vary among healthcare settings. They are reported to be between 6.2% to 11.1% in acute care (McErlean et al, 2004; Santamaria et al, 2009; Hsu and Chang, 2010), 3.3% to 14.3% in palliative care (Amaral et al, 2012; Maida et al, 2013), 19.5% in the homecare setting (Mulligan et al, 2011)

and 3.9% to 26.0% in the long-term care setting (LTC) (LeBlanc et al, 2013; Koyano et al, 2014; Woo et al, 2015; Skiveren et al, 2017). McErlean et al (2004) reported an overall prevalence of 11.1% in one acute care facility in Australia. They also reported prevalence by unit: orthopedics (4.0%), palliative care (27.0%), long-term care (LTC) (18.5%), medicine (21.7%), psychiatry (4.5%) and rehabilitation (7.1%).

Incidence of STs was reported to be 6.7% in the emergency department (Kennedy and Kerse, 2011), and 8.9% (Bank and Nix, 2006) in the rehabilitation setting. Bajwa et al (2010) reported a 59.0% incidence in intensive care patients who required automated prone positioning. In the LTC setting, incidence ranged from 2.2%–16.0% (Payne and Martin 1990; White et al, 1994; Carville et al, 2014; Sanada et al, 2015). Malone et al (1991) reported incidence as 0.9 ST/patient/year, hypothesising that this translates to more than 1.5 million STs occurring per year among individuals living in the LTC setting in the United States. It must be appreciated that the healthcare climate in the LTC setting may have changed over the past two decades since the studies were conducted and may not be reflective of the current healthcare climate.

Prevention and management of skin tears

Previous studies support that by simply having a history of an ST, an individual is at higher risk for developing subsequent STs (McGough-Csarny and Kopac, 1998; LeBlanc et al, 2013; Carville et al, 2014; Lewin et al, 2015; Skiveren et al, 2017). Given this finding, it is imperative that identification of those at risk and implementing a ST prevention programme is a key component to the management of STs.

The ISTAP panel identified risk factors in the general categories of general health, mobility and skin with accompanying prevention strategies *[Table 1]*.

Management strategies

STs are acute wounds that have the potential to heal in a timely wound healing trajectory. When inappropriately managed, STs have a high potential to become chronic and complex wounds. Skin tears, in particular those who develop STs on oedematous lower legs, will require oedema management as part of their wound management plan (LeBlanc et al, 2013). When STs occur, healthcare professionals should institute a ST prevention programme and assess for comorbidities that may delay would healing (an example is lower leg oedema).

Local wound care should include:

- Controlling bleeding
- Re-approximate wound edges if applicable and then classify the ST according to the ISTAP Skin Tear Classification system *[Figure 1]*
- Provide appropriate moist wound healing, applying topical wound care products that

Figure 1. ISTAP Skin Tear Classification System (LeBlanc et al, 2013).

Table 1. ISTAP Skin Tear Risk Factors and Prevention Strategies (LeBlanc et al,2013) (Modified with Permission).	
Risk factor	Prevention strategies
General health	
Altered sensory, auditory, and visual status	■ Include individual in care ■ Encourage regular vision and hearing screening ■ Ensure safe environment ■ Implement a falls assessment and reduction program ■ Assess footwear ■ Educate individual and caregivers on safety concerns regarding individual impairment and risks for skin tears.
Cognitive impairment	■ Assess cognitive status ■ Include an intra-professional team approach to management of altered cognitive status ■ Ensure safe environment ■ Educate individual and caregivers on safety concerns regarding individual impairment and risks for skin tears ■ Protect individual from self-harm when possible.
Nutritional concerns	■ Consult dietitian to provide comprehensive nutritional assessment to optimise nutrition and hydration ■ Promote and monitor nutrition and fluid intake appropriate to age and physiological status, increase fluid intake as appropriate ■ Be aware that extremes of weight (bariatric, cachectic, or excessively thin) require extra care to prevent skin tears.
Polypharmacy	■ Consult with intra-professional team to monitor effects of polypharmacy on the individuals' skin; complete a comprehensive medical review of all medications. ■ Assess for past history of topical and oral corticosteroid usage.
Mobility	
Mobility and handling-related issues	■ Ensure safe handling techniques and safe equipment. ■ Use repositioning slings, and sliders to change position to avoid trauma to skin ■ Use transfer belts to avoid gripping arms during transitional movements ■ Perform daily skin assessment and monitoring for skin tears ■ Be aware that extremes of weight (bariatric, cachectic, or excessively thin) require extra care to prevent skin tears ■ Be aware of fragile skin in critically ill of all ages including fragile pediatric skin, ■ Padding devices and hard objects in the individual's environment ■ Encourage individual at risk of skin tears to wear long sleeves and trousers, knee high socks and gloves ■ Provide shin/elbow pads for those who have frequent skin tears ■ Ensuring an uncluttered environment.
Assistance with activities of daily living (ADLs)	■ Provide protection from trauma during routine care and ADLs ■ Employ proper transferring using positioning slings and sliders and positioning techniques ■ Ensure safe environment ■ Educate individual and caregivers on proper transferring and positioning techniques.
History or risk of falls	■ Initiate falls prevention programme ■ Create a safe environment ■ Remove clutter from environment ■ Maintain a well-lit environment ■ Ensure safe handling techniques and safe equipment.
Mechanical trauma (not related to mobility aids)	■ Implement safe activities for those who are at risk for skin tears ■ Provide those at risk with protective clothing, such as, long sleeves, long pants / trousers, or knee-high socks or shin/elbow guard pads.

Table 1 continued ... ISTAP Skin Tear Risk Factors and Prevention Strategies (LeBlanc et al, 2013). (Modified with Permission)	
Risk factor	Prevention strategies
Altered sensory, auditory, and visual status	■ Avoid adhesive products on frail skin. If dressings or tapes are required, use non-traumatic paper/silicone tapes, non-adherent contact layers, non-adherent / silicone foam dressings or other topical dressings specifically formulated for management of fragile skin, to avoid skin stripping or tearing the skin with the removal of adhesives (ensure proper removal of all adhesives) ■ Communicate the risks of using adhesive tape to other healthcare professionals ■ Exercise caution when caring for those with intravenous lines, nasogastric tubes and other tubes ■ Be cautious when anchoring catheter tubes, nasal prongs ■ Keep fingernails and toenails cut short and filed to remove rough edges to prevent self-inflicted skin tears ■ Ensure safe environment: Pad bed rails, wheelchair legs, furniture edges, and other objects that may lead to blunt trauma, remove unnecessary equipment from environment, well-lit environment ■ Educate staff/caregivers on prevention and treatment of skin tears; Communicate with other healthcare professionals the need for gentle care, including transport services, porters and other specific departments such as radiology and dialysis ■ Staff/caregivers: keep fingernails cut short and do not wear any ring or jewel that could hurt the skin.
Skin	
Skin changes related to extremes of age and critically Ill	■ Implement safe activities for those who are at risk for skin tears ■ Hydrate skin with hypoallergenic moisturiser after bathing, with the skin still damp, not wet; Use warm tepid water for bathing ■ Utilise soapless, no-rinse, and/or pH-neutral skin cleansers ■ Avoid adhesive products on frail skin. If dressings or tapes are required, use non-traumatic paper/silicone tapes, non-adherent contact layers, non-adherent/silicone foam dressings or other topical dressings specifically formulated for management of fragile skin, to avoid skin stripping or tearing the skin with the removal of adhesives ■ Use silicone dressings when appropriate (note: silicone dressings may not provide enough adhesive security to ensure that essential medical devices (example: arterial lines) remain securely in place ■ Avoid patient identification armbands that have sharp edges or hard plastic or metal material ■ Keep fingernails and toenails cut short and filed to remove rough edges to prevent self-inflicted skin tears ■ Educate staff/caregivers on the importance of "gentle care".

protect the fragile periwound skin from trauma
- Avoid wound bed trauma
- Protect periwound skin
- Manage exudate
- Avoid infection.

Conclusion

Older people are predisposed to skin tears during the aging process. The burden of treating chronic wounds is rapidly growing as the result of an aging population and rising healthcare costs (Chandan et al, 2009). Skin tears are acute wounds that are an underappreciated enemy of aging skin. Despite the acute nature of these wounds, their minimisation and mismanagement by healthcare professionals, they have a high propensity to develop into chronic wounds increasing health burdens on individuals and care agencies. The key to decreasing the impact of STs on the aging population is to implement a strategic prevention and management programme. WINT

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