

# Best Practice Recommendations for the Prevention and Treatment of Skin Tears

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## Abstract

The Canadian Association of Wound Care (CAWC) has published Best Practice Recommendations for preventing and treating various wounds, including pressure ulcers, venous leg ulcers and diabetic foot ulcers. The Registered Nurses' Association of Ontario (RNAO) has published Nursing Best Practice Guidelines for the assessment and management of pressure ulcers, venous leg ulcers and diabetic foot ulcers. To date there are no Canadian recommendations or guidelines for the prevention and treatment of skin tears. This article's purpose is to fill the gap of missing best practice recommendations (but not guidelines).

While no Canadian guidelines exist for the prevention and treatment of skin tears, much evidence to support skin tear management can be extrapolated from the

RNAO Best Practice Guidelines for the Prevention and Treatment of Pressure Ulcers and the National Guideline Clearinghouse guideline for Preventing Pressure Ulcers and Skin Tears.

Through this paper, clinical decision-making for the management and prevention of skin tears can be guided by the pathway for assessment and treatment of skin tears (see page 15). It is recommended that the clinician identify and treat the underlying causes, identify and manage patient-centred concerns, follow best practice local wound care and consider adjunctive therapies when warranted. The recommendations also address the critical need for organizational and educational activities that support the implementation of best practice guidelines into clinical practice.

## Introduction

**S**kin tears are the result of trauma to the skin from shearing, friction or blunt trauma and are frequently mismanaged. Health-care professionals must become aware of which individuals are at risk for developing skin tears, how to prevent these wounds, and how to treat them once they occur.<sup>1</sup> Skin tears can cause stress to patients and their families and are often difficult wounds to treat due to

the physical changes associated with aging and co-existing illnesses. The elderly are at a higher risk for skin tears due to the fragility of the aging skin, flattening of the basal cell layer and impaired circulation. More than 1.5 million skin tears occur each year in adults in health-care facilities in the United States.<sup>2</sup> When the cause of the skin tears is known, they often occur from the following events: wheelchair injuries

The appropriate care of the patient with a skin tear can present a complex problem for health-care professionals, as literature pertaining to the prevention and treatment of skin tears is limited. Following a literature review, the authors could find no literature addressing the prevalence and incidence of skin tears in Canada's elderly population.

(25 per cent), accidentally bumping into objects (25 per cent), transfers (18 per cent), and falls (12.4 per cent). In 1991, Malone et al. conducted a one-year retrospective chart review of incident reports from a large long-term-care facility. They concluded that 80 per cent of skin tears occurred on the arms, especially the forearms.<sup>3</sup> White, Karam and Cowell<sup>4</sup> concluded that skin tears are most likely to occur during peak activity hours—6:00 a.m. to 11:00 a.m. and 3:00 p.m. to 9:00 p.m. Baranoski<sup>5</sup> reports that skin tears occur most often in the upper extremities. However, they can occur anywhere on the body and can even be mistaken for Stage II pressure ulcers on the buttock and back.<sup>6</sup>

In recent literature, increasing attention has been given to skin tears, but no gold standard has been developed for their management. While the prevention of skin tears is the primary focus for managing this problem, health-care professionals working with the elderly population must be equipped to manage these wounds when they do occur.<sup>7,8,9</sup> By recognizing which patients are at risk for skin tears, preventing skin injuries, and using dressings appropriately, we can save patients undue pain and suffering.<sup>10</sup>

**Recommendation 1:** (Level of Evidence: IV)

Obtain a complete patient history that includes general health status and identifies risk factors that may put the patient at risk for a skin tear and factors that may affect the healing of existing skin tears.

**Discussion**

Skin tears are the result of shearing, friction or blunt trauma that causes separation of skin layers. The subsequent wounds are partial or full thickness, depending upon the degree of tissue damage.<sup>1</sup> Compared with more extensive and costly pressure ulcers, diabetic foot ulcers, venous leg ulcers and arterial ulcers, skin tears are often seen as minor, inconsequential wounds. In reality, these wounds can be painful and can lead to complications if not treated appropriately.<sup>17</sup>

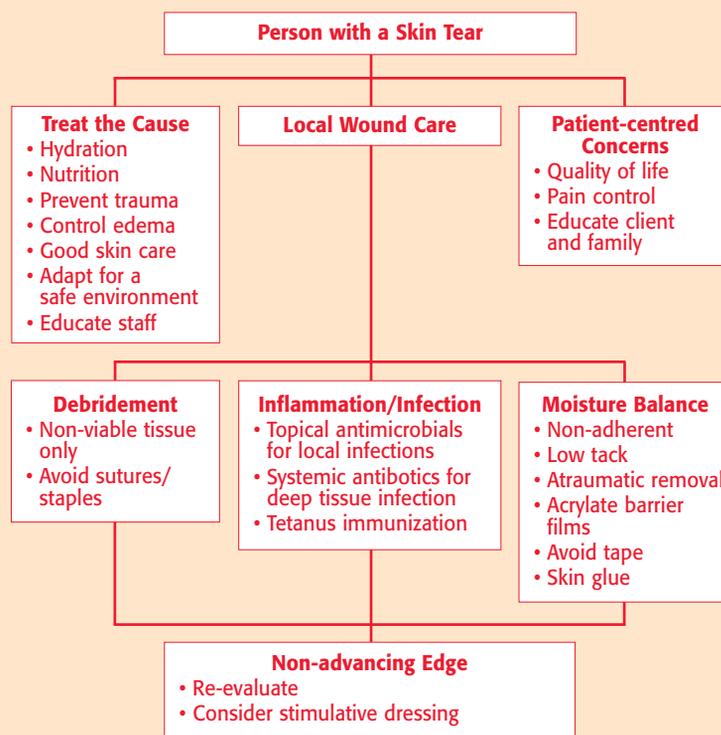
To identify persons at risk, and to prevent and treat skin tears in the elderly population, it is imperative to understand the skin changes associated with aging. These subtle changes increase the risk of skin tear development and interfere with healing.<sup>5,10</sup>

**Skin Changes with Aging**

**Intrinsic factors.** With increasing age, individuals experience

FIGURE 1

**Pathway to Assessment/Treatment of Skin Tears**

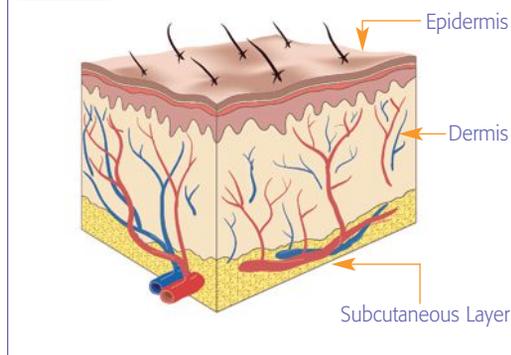


Adapted from Sibbald RG, et al.<sup>35</sup> Reprinted with permission.

dermal and subcutaneous tissue loss, epidermal thinning, and serum composition changes that cause decreased skin surface moisture. The skin's elasticity and tensile strength decrease as these other changes occur.<sup>5,18</sup> The risk of skin tears is further increased by dehydration, poor nutrition, cognitive impairment, altered mobility and decreased sensation.<sup>2,6</sup> All these factors are common in the elderly and combine to increase the skin's vulnerability to trauma.<sup>19</sup>

Wound healing occurs in a well-orchestrated sequence

FIGURE 2



Structural layers of the skin.

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TABLE 1

## Quick Reference Guide: Prevention and Treatment of Skin Tears

| No. Recommendations                     | RNAO and NGCH Guidelines  |   | Level of Evidence  |        |
|---|---|---|--|--------|
|   | Prevention  | Treatment   |  |        |
| <b>Identify and Treat the Cause</b>     |   |   |  |        |
| 1                                       | Obtain a complete patient history that includes general health status and identifies risk factors that may put the patient at risk for a skin tear and factors that may affect the healing of existing skin tears.                | RNAO 1.1 (IV)<br>NGCH (IV)<br>RNAO 2.2, 3.8,<br>3.11, 3.12 (IV)               | NGCH (IV)<br>RNAO 1, 12,<br>21 (IV)  | IV     |
| 2                                       | Identify persons at high risk for skin tears.   | RNAO 1.1, 1.2 (IV)  | NGCH (IV)  | IV     |
| 3                                       | Support the prevention of skin tears through skin hygiene and hydration, responsible bathing, good nutrition, appropriate clothing, the removal of environmental risk factors, and correct turning, positioning and transferring. | NGCH (IV)<br>RNAO 1.4 (IV),<br>3.11 (IV, Ib),<br>3.8, 3.9, 3.10,<br>3.11 (IV) | NGCH (IV)<br>RNAO 7 (III),<br>8(IV)  | IV     |
| <b>Address Patient-centred Concerns</b> |   |   |  |        |
| 4                                       | Assess and assist with psychological needs in the development of a patient-centred plan (pain and quality of life).   | RNAO 2.1,<br>2.2 (IV), 3.3 (IV),  | RNAO 2, 3, 9, 10<br>(IV)   | IV     |
| <b>Local Wound Care</b>                 |   |   |  |        |
| 5                                       | Classify and document skin tears according to degree of trauma.   | RNAO 1.5 (IV),<br>2.1 (IV)  | RNAO 4 (IV),<br>5 (IV), 6 (IV),<br>12 (IV)<br>NGCH III   | III-IV |
| 6                                       | Provide and support an optimal wound-healing environment.   | RNAO 2.1 (IV),<br>1.4 (IV),<br>1.5 (IV)<br>NGCH (IV)                          | RNAO 4 (IV),<br>5, (IV), 6 (IV),<br>19 (IV), 20 (IV),<br>23 (IV), 24 (III),<br>25 (IV), 26 (III),<br>27 (IV), 28 (IV),<br>29 (III), 30 (Ib),<br>31 (III, IV), 32 (Ib),<br>33 (IV), 34 (III),<br>37 (Ib), 38 (III),<br>39 (IV), 40 (Ib),<br>41 (Ib), 42 (IV),<br>43 (IV), 44 (III)<br>NGCH (IV) | III    |
| 7                                       | Determine effectiveness of interventions.   | RNAO 6.1, 6.2,<br>6.3, 6.4, 7.1,<br>7.2, 7.3 (IV)<br>NGCH (IV)                | NGCH (IV)  | IV     |
| 8                                       | Consider the use of adjunctive therapies for non-healing but healable skin tears.   |   | RNAO 35 (Ia),<br>36 (Ia, III, IV)  | Ia-IV  |
| <b>Provide Organizational Support</b>   |   |   |  |        |
| 9                                       | Develop an interprofessional team with flexibility to meet the patient's needs.   | 3.13 (IV)   | RNAO 51, 52,<br>53, 54, 55, 56,<br>57, 58 (IV)   | IV     |
| 10                                      | Educate patient, caregiver, and health-care professional on the prevention and treatment of skin tears.   | RNAO 5.1 (IV),<br>5.2 (III),<br>5.3 (IV), 5.4 (IV)<br>NGCH (IV)               | RNAO 48, 49,<br>50 (IV)  | IV     |

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1 Sibbald et al., 2006. Decreased chronic (persistent) wound pain with a novel sustained release ibuprofen foam dressing. Symposium on advanced wound care, 2006, April, San Antonio, Texas, USA

2 Jørgensen, B.; Friis, G. J.; Gottrup, F. Pain and quality of life for patients with venous leg ulcers: Proof of concept of the efficacy of **Biatain - Ibu**, a new pain reducing wound dressing. Wound repair and regeneration 2006, 14 (3), in press.

3 Flanagan, M.; Vogensen, H.; Haase, L. Case series investigating the experience of pain in patients with chronic venous leg ulcers treated with a foam dressing releasing ibuprofen. World Wide Wounds April 2006.

4 Steffansen, Bente and Herping, Sofie Paarup Kirkeby. Novel wound models for characterizing the effects of exudates levels on the controlled release of ibuprofen from foam dressings. European Wound Management Association, Poster. 2006, Prague, Czech Republic.

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of events. The cascade starts with hemostasis and progresses through inflammation, proliferation and maturation.<sup>20</sup> There are many factors that either enhance or hinder the wound-healing process. Some of the factors deterring wound healing include age; nutritional status; medications, such as immunosuppressives, anti-inflammatory agents, and anticoagulants; smoking; underlying disease states; and local wound conditions.<sup>21</sup>

**Extrinsic factors.** Extrinsic factors also contribute to skin tear development. One extrinsic factor is the risk for mechanical trauma when assistance is required for bathing, dressing, toileting, and transferring.<sup>4</sup> Because soap reduces the skin's natural lubrication (reducing the oils found on the skin surface), frequent bathing, coupled with the natural decrease in lubrication associated with aging, can increase an elderly patient's risk for skin tear development.<sup>4,22</sup> The resulting dry skin is more susceptible to friction and shearing, making those with dry skin more susceptible to skin tears.

Prevention of skin tears, especially in the elderly, presents a clinical challenge for health-care professionals because even the slightest bump or action may result in trauma and a skin tear. Removal of adhesive tapes or dressings can cause skin tears on fragile skin, as can trauma occurring while ambulating.<sup>5</sup>

Patients who are dependent on others for total care are at the greatest risk for skin tears. These patients frequently acquire skin tears during routine activities such as dressing, bathing, repositioning and transferring.

### Risk factors for the development of skin tears<sup>16</sup>

- advanced age > 85 years
- gender (female)
- race (Caucasian)
- immobility (chair- or bed-bound)
- inadequate nutritional intake
- long-term corticosteroid use
- history of previous skin tears
- altered sensory status
- cognitive impairment
- stiffness and spasticity
- polypharmacy
- presence of ecchymoses
- dependence for activities of daily living
- using assistive devices
- applying and removing stockings
- removing tape
- vascular problems
- cardiac problems
- pulmonary problems
- visual impairment
- neuropathy
- having blood drawn
- transfers and falls

Independent ambulatory patients are at the second-highest risk, with the majority of their skin tears occurring on their lower extremities.<sup>4</sup>

### Recommendation 2: (Level of Evidence: IV)

Identify persons at high risk for skin tears.

### Discussion

The RNAO pressure ulcer guidelines (Risk Assessment and Prevention,<sup>11</sup> Assessment and Management RNAO<sup>12</sup>) and the NGCH<sup>13</sup> guidelines recommend a risk assessment that includes a comprehensive head-to-toe assessment upon admission and thereafter as per the individual facility's policies. The RNAO<sup>11,12</sup> supports the use of validated risk-assessment tools.

Validated risk-assessment tools are available to predict pressure ulcers<sup>14</sup> and are well utilized; the same is not true for skin tears. White, Karam and Cowell<sup>4</sup> developed a three-group risk-assessment tool to assess skin tear risk; however, this tool has not been widely used and does not appear in recent literature searches. The prevention of skin tears is paramount in the treatment;<sup>6,15</sup> therefore, a validated and widely accepted tool is needed to predict and identify those who are at high risk for skin tears.

By identifying those at risk, health-care professionals can implement an appropriate prevention program before an injury occurs. The cause, duration and history of alteration in skin integrity, co-existing health issues, medications and mobility level are a few of the issues that should be included in this risk assessment.<sup>16</sup> If all of these issues are considered, the treating team can develop an interprofessional treatment plan to address each patient's physical, social and emotional needs.<sup>9,15</sup>

Though there is a lack of risk assessment tools for the prediction of skin tears, the literature does offer prevention strategies.<sup>4,9,15,16</sup> Individuals should be assessed for risk factors upon admission to health-care services and whenever the individual's condition changes.

### Recommendation 3: (Level of Evidence: IV)

Support the prevention of skin tears through skin hygiene and hydration, responsible bathing, good nutrition, appropriate clothing, the removal of environmental risk factors, correct turning, positioning and transferring.

## Discussion

The RNAO guidelines (Risk Assessment and Prevention RNAO,<sup>11</sup> Assessment and Management RNAO<sup>12</sup>) and the NGCH<sup>13</sup> guidelines recommend implementation of systematic prevention protocols. Skin tears can be relatively simple to prevent if time is taken to identify those at high risk and to implement a prevention protocol for every individual.<sup>5</sup> Ratliff and Fletcher<sup>9</sup> indicated that once a skin-related problem is acknowledged, implementation of prevention measures and identification of those at high risk will decrease the incidence of skin tears. Bank and Nix<sup>19</sup> conducted a 13-month, retrospective, pre-intervention review. They found that after the implementation of a prevention program, the incidence of skin tears decreased.

Ensuring a safe environment is imperative for the success of a prevention program. This can be accomplished by determining and removing potential causes for trauma.<sup>10,13,23</sup> Some specific strategies that can be implemented include

- having those at risk wear long sleeves, long pants or knee-high socks<sup>13</sup>
- providing shin guards for those who experience repeat skin tears to shins<sup>19</sup>
- determining and removing potential causes for trauma
- ensuring a safe environment with adequate lighting<sup>10,13,19,24</sup>
- minimizing objects that can be a source of blunt trauma<sup>4,6,9,10,11,13,23,24</sup>
- padding edges of furniture and equipment, providing an uncluttered pathway, and avoiding scatter rugs.<sup>10,13,23,24</sup>

Susceptibility to dryness and low relative humidity increases as skin ages. Baths are dehydrating, and showers that are not too long and too hot are preferable. Overheated homes in the winter months can lead to drying of the skin. Hydration needs to be distinguished from lubrication. Lubrication is the result of coating the skin's surface with an oily covering that prevents water loss. Hypoallergenic moisturizers have a continuous water phase of suspended oil. When the water evaporates, oil is left behind, thus hydrating the skin.<sup>25</sup>

The need to provide a safe environment also extends to

protecting the individual at high risk from trauma during routine care and from self-injury.<sup>10,13,18,23,24</sup> This includes

- applying hypoallergenic moisturizer at least two times per day
- minimizing bathing
- providing protection from trauma during routine care
- providing protection from self injury
- ensuring proper transfer and lifting techniques to avoid shearing and friction when transferring or moving individuals
- padding bed rails, wheelchair legs or other objects that may lead to blunt trauma
- promoting adequate nutrition and hydration
- avoiding adhesive products on frail skin (If dressings or tapes are required, use paper tapes or silicone dressings to avoid skin stripping or tearing the skin with the removal of adhesives<sup>5,18,24</sup>)
- keeping finger and toe nails short and filed to prevent self-inflicted skin tears<sup>23</sup>

Nutritional support plays a vital role in wound healing. Without adequate nutritional intake, the body is unable to repair damaged tissue or mount an offensive against the microbial invasion and infection.<sup>13,26,27</sup> Each step of the wound-healing process is dependent upon circulating amino acids, lipids and carbohydrates. Optimal nutritional intake will improve skin health, assist with the healing of the current skin tear and help with the prevention of future skin tears.

Hydration and nutritional health can be assessed through observation, history and blood sample monitoring.<sup>13,26,27</sup> An interprofessional team—including a dietitian—is crucial for patients with chronic wounds, including those at risk for skin tears.<sup>26</sup>

### **Recommendation 4:** (Level of Evidence: IV)

Assess and assist with psychological needs in the development of a patient-centred plan (that addresses pain and quality of life).

## Discussion

The RNAO guidelines (Risk Assessment and Prevention RNAO,<sup>11</sup> Assessment and Management RNAO<sup>12</sup>) and the NGCH<sup>13</sup> guidelines provide validation for Recommendation 4. A psychological assessment that includes an assessment of quality of life should be

performed to determine the individual's motivation and ability to understand and adhere to the plan of care.<sup>28</sup> Skin tears frequently occur on the upper limbs and are visible to the individual and the family. These unsightly wounds can add to the psychological pain felt by the patient and their families, thus adding stress and influencing physical pain.<sup>9,29,30</sup>

Patients who are thus suffering from skin tears are in need of psychological support. As with any chronic illness, they must contend with alterations to their lifestyle and will require additional support to cope effectively with the impact of the skin tear on their quality of life.<sup>30</sup>

The level or degree of pain experienced by a patient is unique to that individual and plays a vital role in their quality of life and well-being. Pain is a symptom associated with actual or perceived injury and is defined by the patient's perception of the pain. Skin tears are often described as painful, and pain management should be addressed as part of the treatment plan. Krasner et al.<sup>29</sup> describe pain as a unique experience that differs among individuals. The individual with a skin tear will experience varying degrees of pain: the acute pain at initial injury, chronic pain from the wound, and psychological pain associated with the wound.<sup>29,30,31,32</sup>

RNAO Recommendation 9 of the Assessment and Management of Pressure Ulcers guidelines indicates that all patients should be assessed at regular intervals using the same validated pain-assessment tool each time.<sup>12</sup> Currently no validated assessment tools are specific to wound pain; however, a number of validated pain assessment tools can be utilized depending upon the patient's cognitive level.<sup>28</sup>

When assessing pain in the elderly population, simply worded questions and tools, which can be easily understood, are the most effective, as older adults frequently are encumbered by numerous negative factors such as sensory deficits and cognitive impairments. Subjective tools such as the Visual Analogue Scales (VAS) and the Faces Scale are highly effective for this population.

When addressing skin tears, it is also important to note that lack of sensation (as seen in individuals with paralysis) or the cognitive ability to recognize pain (as seen in individuals suffering from various forms of

dementia) can not only potentiate the occurrence of skin tears but can also negatively affect healing times and preventative measures.<sup>30,31,33,34</sup>

The patient's individual perception of pain is the reality that must be respected and addressed by the interprofessional team. It is important to create an environment of trust and caring.<sup>29</sup> This accurate assessment of the type of pain experienced, its intensity and the impact it has on the patient's quality of life must be taken into consideration when creating a personalized plan of care and should be an integral part of the overall clinical assessment.<sup>28,29</sup>

**Recommendation 5:** (Level of Evidence: III-IV)

Classify and document skin tears according to degree of trauma.

**Discussion**

The RNAO guidelines (Risk Assessment and Prevention RNAO<sup>11</sup> Assessment and Management RNAO<sup>12</sup>) and the NGCH<sup>13</sup> guidelines provide recommendations related to the classification of wounds. Wounds should be classified in a systematic and universally accepted manner.<sup>28</sup> To accurately document and treat skin tears, it is important that a common language be used to describe these challenging wounds. Proper documentation is vital to understanding the extent of the problem. Skin tears *should not be grouped* into pressure ulcer categories.

The Payne-Martin Classification for Skin Tears is widely used to define and classify these wounds.<sup>15,16</sup> Developed in the late 1980s and revised in 1993, this tool aids in the distinction of skin tears as a complex wound type and provides the health-care provider with the means to enhance documentation and track outcomes of care.<sup>10</sup>

**Recommendation 6:** (Level of Evidence: III)

Provide and support an optimal wound-healing environment.

**Discussion**

The RNAO guidelines (Risk Assessment and Prevention RNAO<sup>11</sup> Assessment and Management RNAO<sup>12</sup>) and the NGCH<sup>13</sup> guidelines provide multiple recommenda-

*continued on page 22*

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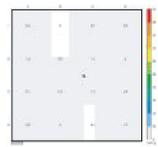
Using a 16-sensor, force sensing pad carefully affixed to the left heel of two subjects, pressure was “mapped” while the patients were lying supine and also with the knee flexed 30 degrees. Pressure mapping readings were done separately with the patient using various pressure reduction mattresses and numerous foot positioners, and heel protectors.

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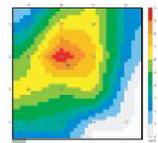
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| Variation coefficient | 63.7%    |
| Standard deviation    | 1.47     |
| Average pressure      | 2.3      |
| Maximum pressure      | 5.9      |
| Center of pressure    | 2.7, 2.5 |



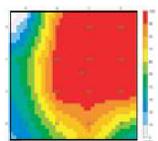
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|-----------------------|----------|
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| Standard deviation    | 26.8     |
| Average pressure      | 44.8     |
| Maximum pressure      | 100      |
| Center of pressure    | 2.2, 2.2 |



#### Heel Protector

|                       |          |
|-----------------------|----------|
| Sensors included      | 16       |
| Variation coefficient | 36.4%    |
| Standard deviation    | 28.2     |
| Average pressure      | 77.5     |
| Maximum pressure      | 100      |
| Center of pressure    | 2.8, 2.4 |



#### Heel Pillow

|                       |          |
|-----------------------|----------|
| Sensors included      | 16       |
| Variation coefficient | 40.5%    |
| Standard deviation    | 28.1     |
| Average pressure      | 69.4     |
| Maximum pressure      | 100      |
| Center of pressure    | 2.1, 2.5 |

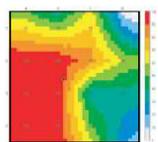


TABLE 2

## Payne-Martin Classification for Skin Tears

| Payne-Martin Skin Tear Classification <sup>15,16</sup><br>Skin Tear Category |                                       |  | Description   |
|--|---------------------------------------|--|---|
| Category I:<br>Skin Tears without<br>Tissue Loss                             | Linear type<br>(full thickness)       | Category I skin tear:<br>Linear type<br>                   | Linear type (full thickness): epidermis and dermis are pulled in one layer from supporting structures. The wound is incision-like in appearance.                  |
|  | Flap type<br>(partial thickness)      | Category I skin tear:<br>Flap type<br>                     | Flap type (partial thickness): epidermis and dermis are separated. Flap can be completely approximated or approximated to expose no more than 1 mm of the dermis. |
| Category II:<br>Skin Tears with<br>Partial Tissue Loss                       | Scant tissue loss type                | Category II skin tear:<br>< 25% Partial<br>tissue loss<br> | Scant tissue loss type: 25% or less of the epidermal flap is lost.  |
|  | Moderate to large<br>tissue loss type | Category II skin tear:<br>> 25% Partial<br>tissue loss<br> | Moderate to large tissue loss type: more than 25% of the epidermal flap is lost.  |
| Category III:<br>Skin Tears with<br>Complete<br>Tissue Loss                  |                                       | Category III skin tear:<br>Complete<br>tissue loss<br>   | The epidermal flap is absent.   |

tions related to the assessment and treatment of wounds. Prevention of skin tears should be the primary focus; however, health-care professionals must be equipped to manage these challenging wounds should they occur.

While skin tears represent a specific type of wound, the same principles used to manage other wounds should be employed when treating skin tears.<sup>7,8</sup> To adequately treat wounds, several areas must be addressed: co-existing factors, nutritional support, pain management, local wound conditions, and optimal dressing selection.<sup>35</sup> When treating skin tears, the first step is to assess the local conditions within the wound and determine the skin tear category using the Payne-Martin Classification for Skin Tears.<sup>15,16</sup> Bacteria and necrotic tissue must be removed and the appropriate dressing selected to maintain moisture balance. Moist wound healing—versus a dry dressing—is the method of choice. Actual product selection will depend on the wound assessment.<sup>35</sup>

### Wound Cleansing

Wound cleansing is an important component of wound management (RNAO Assessment and Management<sup>12</sup>). Optimal wound healing cannot occur unless all foreign debris has been removed from the wound—and cleansing is the easiest method for accomplishing this goal.<sup>36</sup> Cleansing is used to decrease surface slough and debris in the wound, thus lowering the bioburden.<sup>21,36</sup>

### Don't forget the tetanus shot!

Tetanus is an acute, often fatal disease caused by wound contamination with *Clostridium tetani*. Human tetanus immunoglobulin (TIG) should be given to all individuals who have had skin integrity interrupted by a non-surgical mechanism and who have not received a tetanus toxoid (Td) inoculation in the past 10 years. The TIG should be given before wound debridement because exotoxin may be released during wound manipulation.<sup>38</sup>

TABLE 3

## Dressing Selection Specific to Skin Tears

| Payne-Martin Skin Tear Classification <sup>15,16</sup><br>Skin Tear Category    |   | Skin Tear Care Considerations  |   |
|---|---|--|---|
| <b>Do not suture or staple due to the fragility of the skin<sup>12,16</sup></b> |   |  |   |
| Category I:<br>Skin Tears without<br>Tissue Loss                                | Linear type (full thickness)  | Category I skin tear:<br>Linear type<br>                  | Based on assessment: Control bleeding, approximate edges, secure edges with 2-octylcyanoacrylate topical bandage (skin glue). <sup>7,40,41</sup><br>or<br>Approximate edges. Cover with silicone or low-tack foam dressing. Use alginate under foam if skin tear is bleeding.<br>or<br>Approximate edges. Control bleeding. Cover with absorbent clear acrylic dressings. <sup>8</sup> Do not remove for 21 days or if peri-wound exhibits signs and symptoms of infection.** |
|   | Flap type (partial thickness)                                       | Category I skin tear:<br>Flap type<br>                   | Based on assessment: Control bleeding, approximate edges, secure edges with 2-octylcyanoacrylate topical bandage (skin glue). <sup>5,40,41</sup><br>or<br>Approximate edges. Cover with silicone or low-tack foam dressing. Use alginate under foam if skin tear is bleeding.<br>or<br>Approximate edges. Control bleeding. Cover with absorbent clear acrylic dressings. <sup>8</sup> Do not remove for 21 days or if peri-wound exhibits signs and symptoms of infection.** |
| Category II:<br>Skin Tears with<br>Partial Tissue Loss                          | Scant tissue loss type,<br>< 25% partial tissue loss                | Category II skin tear:<br>< 25% Partial Tissue Loss<br> | Based on assessment: Approximate edges. Cover with silicone or low-tack foam dressing. Use alginate under foam if skin tear is bleeding.<br>or<br>Approximate edges, control bleeding, cover with absorbent clear acrylic dressings. <sup>8</sup> Do not remove for 21 days or if peri-wound exhibits signs and symptoms of infection.**  |
|   | Moderate to large<br>tissue loss type:<br>> 25% partial tissue loss | Category II skin tear:<br>> 25% Partial tissue loss<br> | Based on assessment: Cover with silicone or low-tack foam dressing. Use alginate under foam if skin tear is bleeding.<br>or<br>Approximate edges. Control bleeding. Cover with absorbent clear acrylic dressings. <sup>8</sup> Do not remove for 21 days or if peri-wound exhibits signs and symptoms of infection.**   |
| Category III:<br>Skin Tears with<br>Complete<br>Tissue Loss                     |   | Category III skin tear:<br>Complete tissue loss.<br>    | Based on assessment: Cover with silicone or low-tack foam dressing. Use alginate under foam if skin tear is bleeding.<br>or<br>Approximate edges. Control bleeding. Cover with absorbent clear acrylic dressings. Do not remove for 21 days or if peri-wound exhibits signs and symptoms of infection.**  |

\*\*Use with caution with heavily exuding wounds. Control bleeding first. Dressings are designed to be left in place for extended periods of time, and early removal may interfere with skin tear healing.

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Krasner<sup>37</sup> outlined the best practices for cleansing wounds with necrotic debris. She suggests using cleansing/irrigation with non-cytotoxic solutions such as normal saline or non-ionic surfactant cleansers and safe pressures of less than 12 pounds per square inch (psi), achieved by using a 19-gauge needle and a 35 cc syringe. Healing wounds without debris should be gently cleansed with non-cytotoxic solutions such as normal saline or non-ionic surfactant cleansers at low pressure of less than 8 psi to protect granulating tissue.<sup>36,37</sup>

### Moist Wound Healing

The importance of moist wound healing in healable wounds cannot be overstated.<sup>35</sup> RNAO recommendations (RNAO Assessment and Management<sup>12</sup>) demonstrate overall high levels of evidence to support moist wound healing as an integral part of any wound management plan. Sibbald et al.<sup>21</sup> indicated that when compared with dry wounds, a moist wound environment accelerates wound healing. Appropriately utilized dressings can optimize the wound-healing environment by maintaining the optimal moisture levels to promote cell growth and healing.<sup>12,21,37</sup>

### Dressing Selection

RNAO recommendations (RNAO Assessment and Management<sup>12</sup>) support the need for a systematic approach to dressing selection. Ovington<sup>39</sup> cited seven dressing recommendations, which were also endorsed by the RNAO Recommendation 31. Recommendations include choosing a dressing that will maintain constant moisture, be appropriate in accordance to the local wound environment, protect the peri-wound skin, control or manage exudate, control or manage infection, and consider caregiver time. These recommendations should be followed when assessing wounds and deciding which dressing or product to use.

Unlike pressure ulcers and other chronic wounds, skin tears are acute wounds that have the potential to be closed by primary intention. Traditionally, wounds closed by primary intention are secured with suture or staples.<sup>16</sup> Given the fragility of the elderly skin,<sup>1,2,34</sup> sutures and staples are not a viable option, and other methods are required.<sup>5,34,42,43</sup> Sutton and Pritty<sup>45</sup> conducted a randomized controlled study comparing

pretibial laceration management options. They reported that most pretibial lacerations responded best to conservative management and that adhesive strips were preferable over suturing. This research supporting the use of adhesive strips is dated, and, while no current research is available to support a change in practice, *expert opinion suggests that adhesive strips are not the current treatment option of choice for these wounds.*<sup>7,8,40,41</sup>

Nazarko<sup>24</sup> reviewed one protocol for treating skin tears. Calcium alginates were used to control bleeding after initial injury. Once the bleeding was controlled, the skin tears were treated according to category. Category I skin tears were treated with adhesive strips anchor, Category II skin tears were treated with a combination of adhesive strips and soft silicone or low-tack foam dressings, and Category III skin tears were treated with soft silicone or low-tack foam dressings. It was concluded that skin tears using these listed treatments should heal within seven to 10 days.

O'Regan<sup>16</sup> systematically reviewed the existing literature on the treatment of skin tears. She concluded that wounds should be systematically cleaned with normal saline, bleeding should be controlled, clots should be removed, the skin flap should be approximated if possible and a hydrogel, alginate, petroleum gauze, foam, hydrocolloid or transparent film dressing or wound closure strips should be applied, depending on the wound characteristics.

In more recent literature, absorbent clear acrylic dressings<sup>7,41</sup> have been successfully used to treat Category I to III skin tears with low to moderate exudate. These dressings are semi-permeable and can be left in place for up to 21 days. In a small study, LeBlanc and Christensen<sup>7</sup> examined a convenience sample of five patients with Category I to II skin tears who were treated with absorbent clear acrylic dressings.<sup>7</sup> They found complete wound closure with no report of wound infection and minimal reported pain in all five patients. Dressings were removed at 21 days, and complete wound closure was seen in all patients.

Another feasible option for Category I and Category II skin tears with less than 25 per cent epidermal flap loss is approximation of the edges of the skin tear/flap tissue as close as possible. Instead of achieving this goal with

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adhesive strips, a viable alternative is the use of 2-octylcyanoacrylate topical bandage (skin glue).<sup>7,40,41</sup> Milne and Corbett<sup>44</sup> examined a convenience sample of 20 patients with category II to III skin tears who were treated with 2-octylcyanoacrylate topical bandage. Complete healing was seen with one application with no reported wound infection and minimal reported pain. Cost average was less than \$1 per application at the time of the study.

Other possible topical treatment choices may include silicone-based mesh or foam products, absorbent clear acrylic dressings,<sup>8</sup> calcium alginate dressings or foam dressing.<sup>24</sup> The use of hydrocolloids or traditional transparent film dressings is not recommended as they may cause skin stripping if not removed properly. As well, the skin flap may be lifted during removal, thus slowing healing.<sup>42</sup> If the skin tear is infected or extensive, the wound should be assessed by a physician, enterostomal therapist or another wound-care specialist to determine best treatment options.<sup>28</sup>

**Recommendation 7:** (Level of Evidence: III-IV)  
Determine effectiveness of interventions.

## Discussion

RNAO (Assessment and Management RNAO<sup>45</sup>) and the NGCH<sup>13</sup> guidelines recommend examining the edge of the wound to determine the effectiveness of the interventions and to establish a renewed plan of care if progress is not as anticipated.

Evaluation needs to be an ongoing step in the wound-healing process, and the clinician needs to address three key issues:<sup>45,46</sup>

1. How do you know if your treatment plan has been effective?
2. How do you currently evaluate wound healing?
3. Is wound closure the only successful wound-care outcome?

A healthy wound has a pink wound bed and an advancing wound margin, while an unhealthy wound has a dark, friable wound bed with undermined wound margins. Flanagan<sup>47</sup> states that a 20 to 40 per cent reduction of wound area in two and four weeks is likely to be a reliable predictive indicator of healing.

The edge of the wound is an assessment step in the Pathway to Assessment/Treatment of Skin Tears (Figure 1) to determine if epidermal cell migration

FIGURE 3

### Treatment of a Category II Skin Tear with Skin Glue in a 92-year-old Male



FIGURE 4

### Treatment of a Category III Skin Tear with an Absorbent Clear Acrylic Dressing in an 87-year-old Male



has begun. It is a part of the cyclical process of wound management. If the wound is healing, keratinocytes and responsive wound cells migrate and cause the edge of the wound to advance. If the edge is not migrating, the wound will require a full reassessment of cause and corrective therapies. If patient and wound are optimized and the edge is still not migrating, then a wound may need advanced therapies to kick-start the healing process.<sup>46</sup> If signs of healing still do not occur, then a biopsy should be taken to rule out infection or disease such as pyoderma gangrenosum, Marjolin's ulcer or other atypical wound-related conditions.<sup>47</sup>

Change to the wound edge is only one outcome measure. Wound closure is not always the expected result. In some instances, as with other co-existing factors such as arterial insufficiency, wound closure may not be realistic. Wounds that are unlikely to heal need to have alternative outcome expectations such as wound stabilization, reduced pain, reduced bacterial load and decreased frequency of dressing changes.<sup>46,48</sup>

**Recommendation 8:** (Level of Evidence: Ia-IV)

Consider the use of adjunctive therapies for non-healing but healable skin tears.

**Discussion**

The RNAO (Assessment and Management RNAO<sup>12</sup>) guideline supports the recommendation to consider adjunctive therapies for non-healing but healable wounds and indicates that there are multiple levels of evidence, depending on the modality. Given the nature of these wounds, skin tears, especially Category I and II skin tears, should resolve in a timely fashion without the need for adjunctive therapies if best practice wound care is followed. Based on clinical experience with pressure ulcers, it is accepted that if, despite optimal wound care and controlled intrinsic and extrinsic factors, the wound is not progressing at a rate of 20 to 40 per cent reduction of wound area in two and four weeks,<sup>47</sup> the clinician might consider adjunctive therapies such as electrical stimulation, growth factors and bioactive agents.<sup>45,46,47</sup> NGCH guidelines<sup>13</sup> provide recommendations for skin tears that mirror the recommendations for pressure ulcers, and, as such, non-healing complex

FIGURE 5

**Treatment of a Category III Skin Tear with Soft Silicone Foam Dressing**



skin tears should also be considered for possible adjunctive therapies if timely healing rates are not experienced. Referrals may be required for some therapies, and they may not be available in all health-care settings. Cultural and religious beliefs may prove to be barriers to certain interventions.<sup>46</sup>

**Recommendation 9:** (Levels of Evidence: IV)

Develop an interprofessional team with flexibility to meet the patient's needs.

**Discussion**

The RNAO guidelines (Risk Assessment and Prevention RNAO<sup>11</sup> Assessment and Management RNAO<sup>12</sup>) provide recommendations relating to the development of an organized interprofessional team approach to managing wounds.

Patients, families and caregivers need the wound-care expert's professional knowledge, but they also require the added expertise of other interprofessional team members. Members can include, but are not limited to, occupational therapists, physical therapists, dietitians, social workers, general physicians, general nurses, enterostomal therapy nurses, pharmacists, social workers, and discharge planners. All health-care professionals involved in the care of the patient with skin tears must be willing and able to work together toward positive patient outcomes. A team of health-care professionals working together is more effective than one health-care professional working in isolation. At the core of the team should be the patient and the family. The patient's desires and wishes must be respected even if they differ from the ultimate goals of the health-care team.<sup>49</sup>

**Recommendation 10:** (Level of Evidence: IV)

Educate patient, caregiver, and health-care professional on the prevention and treatment of skin tears.

**Discussion**

The RNAO guidelines (Risk Assessment and Prevention RNAO<sup>11</sup> Assessment and Management RNAO<sup>12</sup>) and the NGCH<sup>15</sup> guidelines support the need to educate patients, caregivers and health-care professionals on the prevention and treatment of skin tears.

Patient, family and health-care professionals require ongoing education and support to ensure current evidence-based practice is being followed.<sup>50</sup> Prevention is a critical element in a successful wound-care plan, and education is a key component in any successful preventative or treatment program.<sup>9,22</sup> Education is particularly important in the prevention of skin tears. All caregivers must be aware of the proper techniques for providing care without causing skin tears. Education should include the points discussed in Recommendation 3.<sup>7,8,9</sup>

In addition to these strategies it is important to involve those at risk, their family members and their caregivers in the prevention process, thus empowering them to play a proactive role in skin-tear prevention,<sup>7</sup> resulting in successful skin-tear prevention and management.<sup>50</sup> A needs assessment of patients and caregivers should be performed and documented, including baseline information pertaining to knowledge, beliefs, health practices and perceived learning needs of patients, families and caregivers. Cultural and psychological variables will also be factors in developing prevention and management strategies.<sup>50</sup>

**Responsible Bathing**

- should be based on individual need and preference
- should be performed with either soapless products or Ph-balanced soaps
- involves limiting baths; showering instead with warm, not hot, water
- includes the application of hypoallergenic moisturizers post showering while skin is still damp but not wet

**Conclusion**

Skin tears represent a specific and challenging type of laceration that most often affects the elderly population. Skin tears are a common problem that health-care professionals face when caring for the elderly. Prevention of these wounds is the primary focus for managing this problem. However, health-care professionals must be equipped to manage these challenging wounds when they occur.

Literature pertaining to the prevention and treatment of these wounds is limited. Further research is needed to determine the prevalence and incidence in the Canadian elderly population. A validated skin-tear prediction scale and best practice prevention and treatment guidelines are needed to assist health-care professionals in identifying those at risk, and in preventing and treating these painful wounds. ☺

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