

# SKIN & WOUND CARE

The International Journal  
for Prevention and Healing

[www.woundcarejournal.com](http://www.woundcarejournal.com)

Volume 24 Number 9S September 2011

## **Skin Tears: State of the Science: Consensus Statements for the Prevention, Prediction, Assessment, and Treatment of Skin Tears**

**Cochairpersons of Skin Tear Consensus Panel: Kimberly LeBlanc, MN, RN, CETN(C);  
and Sharon Baranoski, MSN, RN, CWCN, APN-CCNS, FAAN**

**Skin Tear Consensus Panel Members: Karen Campbell, PhD, RN, APN;  
Keryln Carville, PhD, RN; Dawn Christensen, MHSc, RN, CETN(C);  
Karen Edwards, MSS, BSN, RN, CWOCN, WOCN;  
Mary Gloeckner, MS, RN, COCN, CWCN; Samantha Holloway, MSc, RN;  
Diane Langemo, PhD, RN, FAAN; Alicia Madore, MSN, RN, CCNS, WCC;  
Mary Ann Sammon, BSN, CWCN; Ann Williams, BSN, RN, BC, CWOCN;  
and Mary Regan, PhD, RN, CNS, CWCN**

*Advances in Skin & Wound Care* 2011;24(9)(Suppl 1):2-15.

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# Skin Tears: State of the Science: Consensus Statements for the Prevention, Prediction, Assessment, and Treatment of Skin Tears<sup>©</sup>

Kimberly LeBlanc, MN, RN, CETN(C), and Sharon Baranoski, MSN, RN, CWCN, APN-CCNS, FAAN

**Cochairpersons of Skin Tear Consensus Panel:** Kimberly LeBlanc, MN, RN, CETN(C), KDS Professional Consulting, Ottawa, Ontario, Canada; kimpleblanc@rogers.com; and Sharon Baranoski, MSN, RN, CWCN, APN-CCNS, FAAN, Wound Care Dynamics Inc, Shorewood, Illinois; nrsebear@aol.com

**Skin Tear Consensus Panel Members:** Karen Campbell, PhD, RN, APN, University of Western Ontario, London, Ontario, Canada; Keryln Carville, PhD, RN, Associate Professor, Domiciliary Nursing, Silver Chain Nursing Association and Curtin University, Perth, Australia; Dawn Christensen, MHSc, RN, CETN(C), KDS Professional Consulting, Ottawa, Ontario, Canada; Karen Edwards, MSS, BSN, RN, CWCN, WOCN, University of Alabama at Birmingham, Alabama; Mary Gloeckner, MS, RN, COCN, CWCN, Ostomy/Wound Specialist, Trinity Regional Health System, Iowa Health System, Bettendorf, Iowa; Samantha Holloway, MSc, RN, Senior Professional Tutor/Course Director (MSc in Wound Healing and Tissue Repair), Department of Dermatology and Wound Healing, School of Medicine, Cardiff University, Cardiff, Wales, United Kingdom; Diane Langemo, PhD, RN, FAAN, Langemo & Associates, Grand Forks, North Dakota; Alicia Madore, MSN, RN, CCNS, WCC, Army Nurse Corps; Mary Ann Sammon, BSN, CWCN, Manager, Pressure Ulcer/Consult Team, Cleveland Clinic, Cleveland, Ohio; Ann Williams, BSN, RN, BC, CWCN, Wound/Ostomy Care Coordinator, Inova Fair Oaks Hospital, Fairfax, Virginia; Mary Regan, PhD, RN, CNS, CWCN, Hollister Wound Care, Libertyville, Illinois.

**Medical Writer:** Karen Beach

**Acknowledgments:** The Skin Tear Expert Panel would like to thank the following individuals for their special contributions to this project: Karen Beach for providing medical writing assistance in the preparation of this document; Kimberly LeBlanc and Sharon Baranoski for their leadership, dedication, and time put forth in making this document a reality; and Dr Mary Regan and Hollister Wound Care for the educational grant support, without which completion of this project would have been impossible.

Ms LeBlanc has disclosed that she is a recipient of an unrestricted educational grant from Hollister Wound Care, is a consultant to Systagenix, and is a member of the speaker's bureau for Mölnlycke. Ms Baranoski has disclosed that she is a recipient of an unrestricted educational grant from Hollister Wound Care; is a member of the advisory board for Mölnlycke; and is a member of the speaker's bureau for KCI and Hill-Rom.

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The statements from the consensus document are designed to facilitate the implementation of knowledge-transfer-into-practice techniques for quality patient outcomes. This implementation process should include interprofessional teams (clinicians, laypeople, and policy makers) concerned with the care of individuals at risk for or who suffer from skin tears, to adequately address medical, social, legal, and financial ramifications of skin tears.

The content of this document is based on the results of a 2-day roundtable discussion held January 27–28, 2011, in Orlando, Florida, and was made possible by an unrestricted educational grant from Hollister Wound Care, Libertyville, Illinois. Additional input was received from an international panel of 68 distinguished reviewers using a modified Delphi Method process. The information contained herein does not necessarily represent the opinions of all panel members, distinguished reviewers, or Hollister Wound Care.

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## ABSTRACT

The appropriate management of patients with skin tears is an ongoing challenge for healthcare professionals. Skin tears are often painful, acute wounds resulting from trauma to the skin and are largely preventable. Healthcare professionals must be able to identify individuals at risk for skin tears and aid in the prevention of these wounds and in their treatment when they occur. Despite preliminary studies that suggest skin tears may be more prevalent than pressure ulcers, there remains a paucity of literature to guide prevention, assessment, and treatment of skin tears. As a result, these wounds are often mismanaged and misdiagnosed, leading to complications, including pain, infection, and delayed wound healing. In addition, skin tears increase caregiver time and facility costs, cause anxiety for patients and families, and may reflect poorly on the quality of care delivered in a facility. In an effort to shift awareness toward this largely unheeded healthcare issue, a consensus panel of 13 internationally recognized key opinion leaders convened to establish

consensus statements on the prevention, prediction, assessment, and treatment of skin tears. The initial consensus panel meeting was held in January 2011 and was made possible by an unrestricted educational grant from Hollister Wound Care. This document details the consensus definition and statements, as well as recommendations for future research and steps toward establishing a validated, comprehensive program for managing skin tears.

**KEYWORDS:** skin tears, traumatic injury

ADV SKIN WOUND CARE 2011;24(9)(suppl 1):2-15

## BACKGROUND FOR ESTABLISHING SKIN TEAR CONSENSUS PANEL

Development of an international pressure ulcer advisory panel has resulted in a universal definition and classification system for pressure ulcers, as well as international guidelines for the prevention, prediction, assessment, and management of pressure ulcers. The acceptance and utilization of a common

language and classification system has facilitated best practice and research in this area.<sup>1</sup> In contrast, despite arguments that skin tears may be more prevalent than pressure ulcers, a universally accepted classification and management system for skin tears has yet to be established.

The most commonly cited definition of skin tear is that of Payne and Martin<sup>2</sup>: “A skin tear is a traumatic injury occurring on the extremities of older adults as a result of shearing or friction forces, which separate the epidermis from the dermis.” Payne and Martin<sup>3</sup> revised this definition in 1993 to state, “A skin tear is a traumatic injury occurring principally on the extremities of older adults as a result of shearing or 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).” The revised Payne-Martin 1993 definition was later adapted by Carville et al<sup>1</sup> as part of the Skin Tear Audit Research (STAR) skin tear classification system. LeBlanc et al<sup>4</sup> defined skin tears as “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.” Regardless of definition, skin tears commonly occur in the extremes of age, the critically ill or medically compromised, and in individuals requiring assistance with personal care.<sup>1,4-6</sup>

A literature review revealed limited literature addressing the prevalence, incidence, or economic impact of skin tears on the global population. Carville et al<sup>1</sup> asserted that skin tears are perceived to be common wounds and occur more frequently than pressure ulcers. Early research estimated that 1.5 million skin tears occur each year in institutionalized adults in the United States.<sup>7</sup> A 1994 study<sup>8</sup> in a 347-bed facility in Western Australia demonstrated a 41.5% skin tear prevalence rate within its population.<sup>8</sup> Studies of community settings have reported skin tear prevalence rates between 5.5% in known wounds among all age groups<sup>9</sup> and 20% of known wounds in the veteran population.<sup>10</sup> Canadian and European prevalence and incidence of skin tears are not known.

An international survey, aimed at exploring current practices in the assessment, prediction, prevention, and treatment of skin tears, was conducted by LeBlanc et al<sup>11</sup> from June 2010 to December 2010. A total of 1127 healthcare professionals from 16 countries completed an online survey. More than half (69.6%) of respondents reported a problem with current assessment and documentation of skin tears in their practice settings. The vast majority (89.5%) favored a simplified method for documenting and assessing skin tears. A total of 80.9% of respondents admitted to not using any tool or classification system for assessing and documenting skin tears (Tables 1A-D).

**Tables 1A-D.**

**INTERNATIONAL SKIN TEAR SURVEY RESULTS FROM A TOTAL OF 1127 RESPONSES (2010)**

**Table 1A.**

Do you believe that there is a problem with skin tear assessment and documentation at your healthcare setting?

Answer options	Response %	Response n
Yes	69.6	695
No	30.4	303
Other (please specify)		39
<b>Answered question</b>		<b>998</b>
<b>Skipped question</b>		<b>129</b>

**Table 1B.**

Would you like a more simplistic method of documenting skin tears?

Answer options	Response %	Response n
Yes	89.5	891
No	10.5	104
Other (please specify)		23
<b>Answered question</b>		<b>995</b>
<b>Skipped question</b>		<b>132</b>

**Table 1C.**

Does your facility/hospital/home care agency use any of the following scales for assessing and documenting skin tears?

Answer options	Response %	Response n
Payne-Martin Classification for Skin Tears	10.0	98
CAWC Best Practice Recommendations	3.3	32
STAR Skin Tear Classification System	5.8	57
None	80.9	790
Other (please specify)		48
<b>Answered question</b>		<b>977</b>
<b>Skipped question</b>		<b>150</b>

**Table 1D.**

What is your country of practice?

Answer options	Response %	Response n
United States	74.8	843
Canada	11.6	131
Australia	7.0	79
United Kingdom	4.9	55
Europe	1.4	16
Japan	0.3	3
Other (please specify)		20
<b>Answered question</b>		<b>1127</b>
<b>Skipped question</b>		<b>0</b>

## CLASSIFYING SKIN TEARS

The Payne-Martin Classification System<sup>2</sup> was the only known method for classifying skin tears documented in the literature, until the STAR Classification System evolved (Figure 1).

Payne and Martin<sup>3</sup> published a critique of the classification system in 1993. The authors maintained that the system demonstrated internal and external validity, although they raised concerns about the usefulness of the skin tear classification system among clinicians and care providers. White et al<sup>12</sup> found that despite the internal and external validity of the Payne-Martin classification system, it was not widely used in clinical practice. Similarly, an online survey<sup>11</sup> revealed that only 10% of those surveyed used the classification system in practice.

In response to the need for a universally accepted validated skin tear classification system, Carville et al<sup>1</sup> established and validated the STAR Classification System in 2006 (Figure 2). Although only 5.8% of international survey respondents answered that they used the STAR Classification System in clinical practice, it is important to note that the STAR Classification System has only recently been disseminated outside


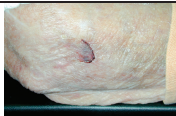



Australia, and of the 1127 respondents to the survey, only 79 were from Australia (Table 1D).

The need for a universally accepted definition and a comprehensive international strategy addressing all aspects of skin tear management prompted establishment of a consensus panel of wound care experts. An initial consensus meeting was held in January 2011 to initiate global discussion and develop consensus statements surrounding the prevention, prediction, assessment, and treatment of skin tears. The resulting skin tear definition and consensus statements, as well as future recommendations for research, are described in this document.

## GOALS AND OBJECTIVES

The primary goal for establishing a skin tear expert panel was to initiate an ongoing global discussion regarding skin tears in all healthcare settings. Objectives of the initial meeting were to generate a skin tear definition and series of statements that would serve as a guide for future consensus-building discussions. The panel-developed definition and statements would subsequently be subject to global review and input from a wide group

**Figure 1.**  
**ADAPTED PAYNE-MARTIN SKIN TEAR CLASSIFICATION TOOL<sup>2</sup>**

Category IA	Linear type skin tear, epidermis and dermis pulled apart, without tissue loss	
Category IB	Epidermal Flap completely covers the dermis within one millimeter of the wound margin	
Category IIA	Scant tissue loss type <25% of the epidermal flap lost	
Category IIB	>25% of the epidermal flap lost	
Category III	Epidermal flap is absent	

Used with permission.

**Figure 2.**

## STAR CLASSIFICATION SYSTEM



## STAR Skin Tear Classification System



### STAR Skin Tear Classification System Guidelines

1. Control bleeding and clean the wound according to protocol.
2. Realign (if possible) any skin or flap.
3. Assess degree of tissue loss and skin or flap colour using the STAR Classification System.
4. Assess the surrounding skin condition for fragility, swelling, discolouration or bruising.
5. Assess the person, their wound and their healing environment as per protocol.
6. If skin or flap colour is pale, dusky or darkened reassess in 24-48 hours or at the first dressing change.

### STAR Classification System



#### Category 1a

A skin tear where the edges **can** be realigned to the normal anatomical position (without undue stretching) and the skin or flap colour **is not** pale, dusky or darkened.



#### Category 1b

A skin tear where the edges **can** be realigned to the normal anatomical position (without undue stretching) and the skin or flap colour **is** pale, dusky or darkened.



#### Category 2a

A skin tear where the edges **cannot** be realigned to the normal anatomical position and the skin or flap colour **is not** pale, dusky or darkened.



#### Category 2b

A skin tear where the edges **cannot** be realigned to the normal anatomical position and the skin or flap colour **is** pale, dusky or darkened.



#### Category 3

A skin tear where the skin flap is completely absent.

Skin Tear Audit Research (STAR). Silver Chain Nursing Association and School of Nursing and Midwifery, Curtin University of Technology. Revised 4/2/2010.



## STAR Skin Tear Classification System Glossary



- **Skin Tear:** "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)"<sup>1</sup>.
- **Pale, dusky or darkened skin or flap colour:** when compared to the individual's 'normal' surrounding skin, may indicate ischaemia or the presence of haematoma, which may affect skin or flap viability.
- **Ischaemia:** inadequate tissue perfusion as evidenced by pale, dusky or darkened tissue.
- **Haematoma:** a collection of blood or clot under the flap or realigned skin.
- **Realign:** to replace the skin or flap into the normal anatomical position without undue stretching.
- **Linear skin tear:** a skin split or the skin splitting in a straight line.
- **Flap skin tear:** a segment of skin or skin and underlying tissue that is separated from the underlying structures.

### References:

- 1 Payne, R., & Martin, M. (1993). Defining and classifying skin tears: Need for a common language ... a critique and revision of the Payne-Martin Classification system for skin tears. *Ostomy Wound Management*, 39(5), 16-20.
- 2 Photographs courtesy of the Skin Tear Audit Research (STAR) photographic library, Silver Chain Nursing Association and School of Nursing and Midwifery, Curtin University of Technology.
- 3 Carville, K., Lewin, G., Newall, N., Haslehurst, P., Michael, R., Santamaria, N., & Roberts, P. (2007). STAR: A consensus for skin tear classification. *Primary Intention*, 15(1), 18-28.



of international reviewers. The purpose of this document is to disseminate the globally agreed skin tear definition and consensus statements and to generate further research on this topic.

## METHODOLOGY

A 3-phase modified Delphi Method<sup>13</sup> was used to reach consensus on the skin tear definition and 12 statements proposed in this document.

### Phase 1

An expert panel was convened to develop consensus statements pertaining to the assessment, prediction, prevention, and treatment of skin tears. The panel consisted of 13 key opinion leaders in the field of wound care from the United States, Canada, United Kingdom, and Australia. The initial consensus meeting was held January 27–28, 2011, in Orlando, Florida, and was made possible by an unrestricted educational grant from Hollister Wound Care. Notes from this meeting were used to generate a preliminary consensus document. A recording of the meeting was available for review.

### Phase 2

Consensus statements were disseminated to all consensus panel members, who then distributed the statements to a wider global group of distinguished reviewers. Each panel member collected and summarized feedback from the global reviewers, then returned feedback to the consensus panel's 2 co-chairpersons. A total of 68 reviewers with noted expertise in wound care were selected to be the distinguished international external review panel.

### Phase 3

Written input received from the international panel members and the expert panel members was used to generate a final consensus document. This final consensus document was then returned to the original expert panel and the 68 external reviewers for voting on the definition and each of the 12 statements for consensus. A quorum of 80% who strongly or somewhat agree was used as a predetermined point for consensus on the definition and each of the 12 statements. The definition and statements received 99% from those who agreed or somewhat agreed with the statements.

## PANEL STATEMENTS

### Skin Tear Definition

Building upon the literature and work of Payne and Martin,<sup>3</sup> Carville et al,<sup>1</sup> and LeBlanc et al,<sup>4</sup> the consensus panel, established the following skin tear definition:

A skin tear is 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).

## CONSENSUS STATEMENTS

### Statement 1

*Intrinsic and extrinsic factors contribute to the occurrence of skin tears; some of these factors are yet to be determined.*

Normal wound healing occurs in a well-orchestrated sequence of events. The cascade starts with hemostasis and progresses through inflammation, proliferation, and maturation, each stage overlapping the others while remaining distinct in terms of time after injury.<sup>14</sup> Factors known to alter the wound healing process include age; nutritional status; medications, such as immunosuppressives, anti-inflammatory agents, and anticoagulants; smoking; underlying disease states; and local wound conditions.<sup>15</sup> The use of anticoagulants increases the risk of ecchymosis,<sup>4</sup> which has been identified as a contributing extrinsic factor to skin tear development.<sup>1</sup>

Individuals suffering from skin tears often suffer from a long history of skin tears. It is worthwhile to note that as with any wound, once closed the area of injury will have reduced tensile strength, and with each subsequent skin tear, the individual will be at greater risk for skin tears.<sup>4,15</sup>

These factors, in addition to numerous other intrinsic and extrinsic factors (Table 2), are thought to be associated with increased risk of skin tears as well.

Intrinsic factors, such as age, pertain to an individual's inherent biologic or genetic makeup. Extremes in age impact not only on how individuals heal but also on their susceptibility to developing a wound.<sup>14</sup> With increasing age, individuals experience dermal and subcutaneous tissue loss, epidermal thinning, and serum composition changes, all of which cause decreased skin surface moisture. In turn, the skin's elasticity and tensile strength decrease.<sup>16,17</sup> Risk of skin tears is further increased by dehydration, poor nutrition, cognitive impairment, altered mobility, and decreased sensation.<sup>18,19</sup> These factors are common in the elderly in all care settings and combine to increase the skin's vulnerability to trauma.<sup>20</sup>

Neonates and infants are also susceptible to skin tears. Neonates have underdeveloped skin, and children have only 60% of adult epidermal thickness.<sup>21</sup> Neonates have decreased epidermal-to-dermal cohesion; deficient stratum corneum; impaired thermoregulation; a body surface/weight ratio of nearly 5 times greater than that of an adult; and immaturities in the immune, hepatic, and renal systems. A combination of these factors places this population at increased risk for epidermal stripping, infection, increased transepidermal

**Table 2.****INTRINSIC AND EXTRINSIC FACTORS ASSOCIATED WITH AN INCREASED RISK OF SKIN TEARS<sup>1,2,4,5,7,16</sup>**

- Very young (neonate) and very old (>75 years old)
- Sex (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
- Limb stiffness (joint stiffness/contractures) and spasticity
- Neuropathy
- Having blood drawn
- Polypharmacy
- Presence of ecchymosis
- Dependence for activities of daily living
- Using assistive devices
- Applying and removing stockings
- Removing tape or dressings
- Vascular problems
- Cardiac problems
- Pulmonary problems
- Visual impairment
- Transfers and falls
- Prosthetic devices
- Continence/incontinence
- Skin cleansers
- Improper use of skin sealants

water loss with resultant heat loss, and toxicity from percutaneous absorption.<sup>5,21–24</sup>

Extrinsic factors also play an important role in the development of skin tears. There is an increased risk for mechanical trauma when assistance is required for bathing, dressing, toileting, and transferring. Soap reduces the skin's natural lubrication, and as a result, frequent bathing, coupled with the natural decrease in lubrication associated with aging, can result in dry skin. Dry skin is more susceptible to friction and shearing, increasing the individual's susceptibility to skin tears.<sup>12</sup> In a case-control study of a 500-bed Australian tertiary hospital, 6 statistically significant factors were identified as being associated with a predisposed risk of acquiring a skin tear<sup>1</sup>:

- senile purpura
- ecchymosis
- hematoma
- evidence of previously healed skin tears
- presence of edema
- inability to reposition independently

Additional research is required to validate the risk factors associated with skin tears. The literature to date has also not addressed the impact of elder abuse/domestic violence and its potential impact on skin tear prevalence.

**Statement 2**

*Skin tears are more prevalent with, but not limited to, the extremes of age.*

Skin tears commonly occur in individuals at the extremes of age, the critically ill or medically compromised, and in those requiring assistance with personal care.<sup>1,4,6</sup> Although elderly and neonatal populations are at the highest risk for skin tears, it is imperative that all patients be assessed for skin tear risk. Individuals who are critically ill, at the end of life, or who suffer from multiple intrinsic and extrinsic risk factors, regardless of age, are also at higher risk. Special attention should be paid to individuals in the critical care setting or those who have suffered major trauma or surgery.<sup>1,5,6</sup>

**Statement 3**

*Physiological changes related to the aging process affect the skin's ability to resist shear, friction, and/or blunt force.*

Known physiological changes related to the skin and aging process are listed in Table 3. Aging skin undergoes a process of dermal and subcutaneous tissue loss, epidermal thinning, and serum composition changes that cause decreased skin surface moisture.<sup>22,23,25,26</sup> The most obvious change is the flattening of the dermal-epidermal junction. In aging skin, dermal thickness can be decreased by as much as 20%, a contributing factor in the paper-thin appearance of skin in the elderly. The skin's elasticity and tensile strength decrease as these other changes occur.<sup>22,23,25,26</sup>

With the aging process, skin becomes more susceptible to dryness. *Xerosis cutis*, or dry skin, is extremely common in the elderly and occurs as the result of diminished or loss of sebaceous and sweat gland activity. It is seen most often on the lower legs but also occurs on the hands and trunk.<sup>27</sup> Bathing removes the body's natural oils from the skin surface, which exacerbates the potential for dry skin, particularly in the elderly, as natural oil production is already diminished.<sup>23</sup> In addition, the use of alkaline soaps increases the skin's pH and thus reduces the skin's protective acid mantle.<sup>4,23</sup> This drying of the skin may be potentiated in certain regions during the colder months with centrally heated homes that dry the air and contribute to dry skin.<sup>4</sup>

Malone et al<sup>7</sup> identified site-specific atrophy over time of subcutaneous tissue on the shins, face, dorsal aspect of the hands, and plantar aspect of the foot. In sustained trauma, these areas absorb more energy that can result in skin tears.

**Table 3.**  
**PHYSIOLOGICAL CHANGES RELATED TO THE AGING PROCESS**<sup>22,23,25,26</sup>

- Thinning and flattening of the dermal-epidermis junction
- Thinning and atrophy of dermis due to decreased collagen production
- Impaired vascularity of the dermis and hypodermis/subcutaneous tissue
- Atrophy of the hypodermis/subcutaneous tissue
- Loss of dermal and hypodermis/subcutaneous tissue
- Reduced function of sweat gland secretion
- Increased need for handling due to physical and cognitive disabilities
- Decreased sebum production
- Decreased inflammatory/immune response
- Decrease in the cellular growth rate or apoptosis
- Degeneration of collagen and elastin fibers
- Delayed angiogenesis
- Increase in capillary fragility in body mass
- Slower epithelialization
- Increased vascular lesions
- Reduced sensation

### Statement 4

*Physiological characteristics of neonatal/infant skin may affect the skin's ability to resist shear, friction, and/or blunt force.*

Studies have shown that epidermal stripping is listed among the most common wound types occurring in hospitalized neonates and children.<sup>21,22</sup> At 24 weeks' gestation, premature neonates have little stratum corneum and attenuated rete ridges. They lack subcutaneous tissue, and their dermis lies directly over the muscle. Consequently, skin stripping secondary to adhesive dressing and/or tape removals can result in full-thickness tissue loss. Between 26 and 29 weeks' gestation, subcutaneous fat deposition begins. However, the barrier function of the skin remains poor. Additional intrinsic characteristics of neonatal and infant skin also increase their risk of skin tears.

At 30 weeks, subcutaneous tissue is evident, and the stratum corneum is 2 to 3 cell layers thick, compared with 40 weeks when it is 30 layers thick. Functional integumentary maturity occurs at 33 weeks. The epidermis is fully keratinized, and the dermal/epidermal junction is stronger but remains fragile and easily damaged. At 36 weeks (full-term), the skin is structurally similar to the adult but the epidermal and dermal layers are only up to 60% as thick as an adult.<sup>21-24</sup>

In addition, if a skin tear does occur, the normally rapid wound healing response of neonatal and pediatric populations can be compromised by protein-calorie malnutrition, hypotension

requiring inotropic therapy, edema, infection, and physiological instability that prevents safe redistribution of pressure.<sup>21,22</sup>

### Statement 5

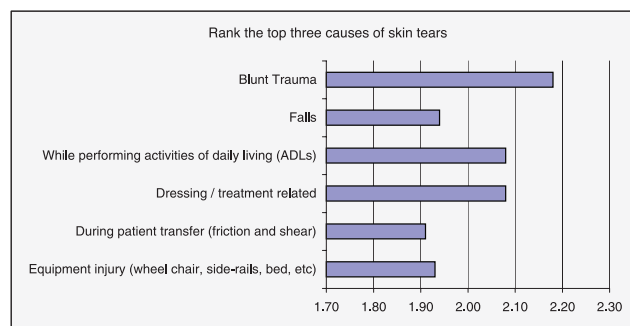
*Individuals with impaired activity, mobility, sensation, or cognition have increased risk of shear, friction, and/or blunt force injury related to the need for increased assistance.*

When skin tears are reported, the causative factor is often not known. When the cause is known, skin tears are frequently linked to wheelchair injuries, blunt trauma from accidentally bumping into objects, transfers, or falls.<sup>4,20</sup> White et al<sup>12</sup> concluded that key times skin tears occur are during the peak activity hours of 6:00 AM to 11:00 AM and 3:00 PM to 9:00 PM.

In the elderly population, skin tears are often related to the environment.<sup>26</sup> In 1990, Payne and Martin<sup>2</sup> conducted a 3-month, descriptive study in 10 long-term-care facilities to describe skin tears, identify risk factors, and determine the rate of healing of skin tears. Among the predominant risk factors, impaired activity, mobility, sensation, and cognition all demonstrated an increased risk for skin tear development. McGough-Carny and Kopac<sup>19</sup> conducted a similar study in a Veterans Affairs nursing home and concluded that dependency in activities of daily living, sensory loss, limited mobility, use of assistive devices, and impaired cognition were risk factors for skin tear development.<sup>19</sup>

Patients who are dependent on others for total care are at the greatest risk for skin tears.<sup>12</sup> Dependent patients frequently acquire skin tears during routine activities, such as dressing, bathing, repositioning, and transferring. Independent ambulatory patients are at the second highest risk, and the majority of their skin tears occur on their lower extremities. In the 2011 survey conducted by LeBlanc et al,<sup>11</sup> the top causes of skin tears included equipment injury, patient transfers, falls, activities of daily living, and treatment and dressing removal (Figure 3).

**Figure 3.**  
**2011 SURVEY RESULTS FOR TOP CAUSES OF SKIN TEARS**





## Statement 6

*A comprehensive assessment of risk factors for skin tears should be conducted for all individuals within the context of their environment.*

In addition to understanding factors that contribute to the development of skin tears, a systematic approach is required to accurately predict skin tear risk. Guidelines recommend a risk assessment be conducted and include a comprehensive head-to-toe assessment upon admission to a healthcare service and thereafter whenever the individual's condition changes or per agency/facility policies.<sup>28–32</sup> The Registered Nurses' Association of Ontario (RNAO)<sup>28,29</sup> and National Pressure Ulcer Advisory Panel (NPUAP)<sup>32</sup> support the use of validated risk assessment tools.

Although validated risk assessment tools are available to predict pressure ulcers and are well utilized, the same is not true for skin tears. The Skin Integrity Risk Assessment Tool developed by White et al<sup>12</sup> (Figure 4) does not appear to be widely used. A validated and widely accepted tool is needed to predict and identify those at high risk for skin tears so that an appropriate prevention program can be implemented before injury occurs.<sup>1,4,23,33</sup>

Cause, duration, and history of alteration in skin integrity; other coexisting health issues; medications; and mobility level are a few of the issues that should be included in the risk assessment. If all of these issues are taken into account, a

comprehensive prevention plan can be developed, addressing physical, social, and emotional needs.<sup>3,4,23,26,33</sup> Despite the lack of risk assessment tools for the prediction of skin tears, there is consistency in the literature in terms of appropriate prevention strategies (Table 4).

## Statement 7

*A collaborative multidisciplinary approach should be utilized for skin tear prevention and management.*

Numerous organizations, advisory panels, and authors have recommended an organized multidisciplinary team approach to managing wounds.<sup>4,28,29,31,32</sup> Although patients, families, and caregivers greatly benefit from the wound care expert's professional knowledge, they also require added expertise of other members of a multidisciplinary team. Team members can include occupational therapists, physical therapists, dietitians, social workers, general physicians, general nurses, wound care speciality nurses, enterostomal therapy nurses, tissue viability specialists, WOC nurses (wound ostomy, continence), pharmacists, discharge planners, and others.<sup>34</sup> Healthcare professionals involved in the care of patients with skin tears must be willing and able to work together toward positive patient outcomes.

**Figure 4.**

### **SKIN INTEGRITY RISK ASSESSMENT TOOL<sup>12</sup>**

White et al<sup>12</sup> recommend implementing a skin-tear risk prevention care plan for patients who meet any of the criteria in group I below, patients who meet 4 or more criteria in group II, patients who meet 5 or more criteria in group III, and patients who meet 3 criteria in group II and three or more criteria in group III.

#### Group I

- History of skin tears within last 90 days
- Actual number of skin tears

#### Group II

- Decision-making skills impaired
- Vision impaired
- Extensive assistance/total dependence for activities of daily living (ADLs)
- Wheelchair assistance needed
- Loss of balance
- Bed or chair confined
- Unsteady gait
- Bruises

#### Group III

- Physically abusive
- Resists ADL care
- Agitation
- Hearing impaired
- Decreased tactile stimulation
- Wheels self
- Manually or mechanically lifted
- Contracture of arms, legs, shoulders, hands
- Hemiplegia or hemiparesis
- Trunk: partial or total inability to balance or turn body
- Pitting edema of legs
- Open lesions on extremities
- 3 to 4 senile purpura on extremities
- Dry, scaly skin

Adapted with permission.

**Table 4.**

**STRATEGIES IN PREVENTING SKIN TEARS<sup>4,16,20,26,33–36</sup>**

1. Assess for risk upon admission to healthcare service and whenever the individual's condition changes
2. Implement a systematic prevention protocol
3. Have individuals at risk wear long sleeves, long pants/trousers, or knee-high socks
4. Provide shin guards for those individuals who experience repeat skin tears to shins
5. Ensure safe patient handling techniques and equipment/environment
6. Involve individuals and families in preventive strategies
7. Educate registered and nonregistered staff and caregivers to ensure proper techniques for providing care without causing skin tears
8. Consult dietitian to ensure adequate nutrition and hydration
9. Keep skin well lubricated by applying hypoallergenic moisturizer at least 2 times per day
10. Protect individuals at high risk from trauma during routine care and from self-injury

A team of healthcare professionals working together is more effective than one healthcare professional working in isolation.<sup>34</sup> At the core of the team should be the patient. Patients and their family/caregiver should be involved in their plan of care, and the team should work to keep them involved. The patient's desires and wishes must be respected even if they differ from the ultimate goals of the healthcare team.<sup>34</sup>

### Statement 8

*Skin tears are to be assessed and documented on a regular basis according to healthcare setting practice and policy.*

The RNAO<sup>28,29</sup> and National Guidelines Clearinghouse (NGCH) guidelines<sup>30</sup> provide recommendations related to the classification of wounds. To accurately document and treat skin tears, it is important that a common language be used to describe them. Proper documentation is vital to understanding the extent of the problem. As with other wound types, skin tear documentation requires a systematic framework for assessment, treatment, and evaluation of outcomes.

Although pressure may be a related cause of skin tears, the etiology of skin tears differs from that of pressure ulcers. Skin tears need to be documented as separate occurrences and not grouped into pressure ulcer categories.<sup>1,16</sup> Because of the current lack of a well-accepted skin tear classification system, additional research is needed in this area. It is important to note that if pressure, friction, and shear become evident, then the skin tear should be reclassified as a pressure ulcer.<sup>30</sup>

### Statement 9

*Evidence-based wound care principles should guide treatment of skin tears.*

The same principles used to manage other wounds should be employed when treating skin tears.<sup>16</sup> The Wales Tissue Viability Nurse Forum: Best Practice Statements,<sup>36</sup> Canadian Best Practice Recommendations for the Prevention and Treatment of Skin Tears,<sup>4</sup> Pennsylvania Safety Authority Skin Tear Initiative,<sup>37</sup> RNAO,<sup>28,29</sup> and NGCH<sup>30</sup> guidelines provide a number of recommendations regarding wound assessment and treatment. Prevention of future skin tears should remain a primary focus. Healthcare professionals must be educated and equipped to manage these challenging wounds when they occur. Several areas must be addressed, including co-existing factors, nutritional support, pain management, local wound conditions, and optimal dressing selection.<sup>4,36–40</sup> The following are some of the general guidelines.

#### Wound Assessment

Before initiating any treatment, the first step is to assess the wound, skin flap, or pedicle and determine the type or category of skin tear using a validated documentation system.<sup>1,23,38</sup> Based on literature review, the Payne-Martin<sup>3</sup> or STAR tools<sup>1</sup> are the only systems currently available to classify skin tears.

#### Wound Cleansing

Skin tears should be cleansed following assessment. Bacteria, debris, and/or necrotic tissue must be removed. Depending on the healthcare setting, a tetanus immunoglobulin may be administered.<sup>4</sup> Optimal wound healing cannot occur unless surface slough, biofilms, and foreign debris have been removed, thus lowering the bioburden.<sup>15,41</sup> Cleansing is the easiest method for accomplishing this goal.<sup>16</sup>

Krasner,<sup>34</sup> as well as Gardner and Frantz,<sup>42</sup> have outlined best practices for cleansing wounds with necrotic debris. They suggest irrigating with noncytotoxic solutions such as normal saline or nonionic surfactant cleansers using safe pressures of less than 10 to 15 pounds per square inch (psi), achieved by using a 19-gauge angiocatheter and a 35-cc piston syringe. Uncomplicated tears (ie, those without debris) should be gently cleansed with noncytotoxic solutions, such as normal saline or nonionic surfactant cleansers at a low pressure of less than 8 psi to protect granulating tissue.<sup>15,42,43</sup>

#### Moist Wound Healing

The importance of moist wound healing in healable wounds cannot be understated.<sup>15</sup> High-level evidence supports moist wound healing as an integral part of any wound management

plan.<sup>29</sup> Sibbald et al<sup>15</sup> indicated that when compared with dry wounds, a moist wound environment accelerates wound healing. Moist wound therapy dressings can enhance the wound healing environment by maintaining optimal moisture levels to promote cell growth and healing.<sup>15,44</sup>

### *Dressing Selection*

RNAO recommendations<sup>29</sup> support the need for a systematic approach to dressing selection for all wound types. Ovington and Peirce<sup>41</sup> cited several dressing recommendations, which were also endorsed by the RNAO. Recommendations include choosing a dressing that will

- maintain constant moisture,
- suit the local wound environment,
- protect the periwound skin,
- control or manage exudates,
- control or manage infection, and
- optimize caregiver time.

These recommendations, in conjunction with local formularies, should be followed when assessing wounds and choosing wound care products.<sup>45</sup>

Unlike pressure ulcers and other chronic wounds, skin tears are acute wounds with the potential to be closed by primary intention.<sup>4</sup> Wounds closed by primary intention are traditionally secured with suture or staples. Given the fragility of elderly skin, sutures and staples are not a viable option; other methods are required.<sup>33</sup> Sutton and Pritty<sup>46</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 to suturing. This research supporting the use of adhesive strips is outdated, and while more research is needed, case studies and expert opinion suggest that adhesive strips are not the current treatment option of choice for skin tears.<sup>47–50</sup>

Recently published regimens for topical treatment of skin tears include lipido-colloid based mesh and foam dressings, soft silicone-based mesh or foam dressings, calcium alginate dressings, absorbent clear acrylic dressings, and skin glue.<sup>47,48,51</sup> Nazarko<sup>51</sup> reviewed a skin tear protocol that included use of calcium alginates to control bleeding postinjury, then treatment according to category: Payne-Martin Category I skin tears were treated with adhesive strips anchor, Category II skin tears were treated with 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. Dressings were held in place with stocking-like products or cotton gauze wraps. The review indicated that when using this protocol, skin tears tended to achieve wound closure within 7 to 10 days.<sup>51</sup>

O'Regan<sup>33</sup> reviewed existing literature on the treatment of skin tears and concluded that wounds should be treated in a systematic way to include cleaning with normal saline, control of bleeding, clot removal, and an appropriate dressing to address wound bed characteristics.

Best practice supports that a skin flap (the pedicle) should be approximated if possible, and a hydrogel, alginate, lipido-colloid based mesh and foam dressings, soft silicone, foam, or non-adherent dressing applied depending on wound characteristics.

In more recent literature,<sup>47,48,50</sup> absorbent clear acrylic dressings have been successfully used to treat Payne-Martin Category I to III skin tears with low to moderate exudate. These dressings are semipermeable and can be left in place for up to 21 days. LeBlanc and Christensen<sup>47</sup> and LeBlanc et al<sup>48</sup> examined a convenience sample of 5 patients with Category I to II skin tears who were treated with absorbent clear acrylic dressings and found complete wound closure with no wound infection and minimal reported pain in all 5 patients. Dressings were removed at 21 days, and complete wound closure was seen in all patients.

In treating Payne-Martin Category I and II skin tears with less than 25% of epidermal flap loss that require close approximation of the edges of the skin tear/flap tissue, successful use of 2-octyl cyanoacrylate topical bandage (skin glue) has been reported.<sup>47–50</sup> Milne and Corbett<sup>52</sup> studied a convenience sample of 20 patients with category II to III skin tears who were treated with 2-octyl cyanoacrylate topical bandage. Complete wound closure was seen with one application per skin tear, with no reported wound infection. The average cost was less than US \$1 per application at the time of the study.

Hydrocolloids, or traditional transparent film dressings, are not recommended over skin tears, as they may cause skin stripping and injury to the healing skin tear if not removed properly.<sup>53</sup> If the skin tear is infected or extensive, the wound should be assessed by a physician or a wound care specialist to determine the best treatment options.<sup>54</sup>

When skin tears occur on the lower limb, peripheral edema as a comorbidity is often associated with the elderly. Therefore, it is important to rule out any significant degree of peripheral vascular disease. This should be done prior to the application of compression therapy for edema control and can be established through a clinical history and the use of Doppler ultrasound to determine the ankle brachial pressure index.<sup>55</sup>

## **Statement 10**

*Patients, caregivers, and healthcare providers should be educated regarding prevention and management of skin tears.*

The RNAO,<sup>28,27</sup> Wound Ostomy Continence Nurses Society (WOCN),<sup>31</sup> and NGCH guidelines<sup>30</sup> support the need to educate patients, caregivers, and healthcare professionals

on the prevention and treatment of skin tears. Patients, family, and healthcare professionals require ongoing education and support to ensure current evidence-based practice is being followed.<sup>56</sup>

Education is a key component in any successful prevention or treatment program<sup>26,38</sup> and particularly important in the prevention of skin tears, as little has been written to support universal care strategies. All healthcare providers and caregivers must be made aware of proper lifting/transferring/positioning techniques for providing care without traumatizing the skin. Skin tear education and dressing competency should be part of every annual skin and wound care educational review. A list of recommended education points for preventing skin tears is listed in Table 5.

**Table 5.**

**SUGGESTED EDUCATION POINTS FOR SKIN TEAR PREVENTION<sup>4,23,26,34,36,39,47,48,57</sup>**

- Perform skin hygiene according to individual need using warm/tepid, not hot, water and soapless or pH-neutral cleanser, followed by a hypoallergenic moisturizer. Hygiene frequency is based on personal, cultural, and healthcare organization practices and policies.
- Lubricate the skin by applying hypoallergenic moisturizer at least twice per day. After showering, apply moisturizers while skin is still damp but not wet.
- Provide protection from trauma during routine care, activities of daily living, and from self-injury; ensure proper transfer and moving and handling techniques and equipment are utilized to avoid shear and friction insult when transferring or moving individuals.
- Pad bed rails (where applicable), wheelchair legs, furniture edges, or other objects that may lead to blunt trauma; remove unnecessary equipment from the room or hallway.
- Promote and monitor adequate nutrition and hydration; offer fluids between meals and during rounds.
- Avoid use of adhesive products on frail skin. If dressings or tapes are required, use paper tapes or nonadherent or silicone dressings to avoid skin tears. Use gauze wraps, stockinettes, or other bandages to secure dressings rather than tape.
- Create a safe environment, such as clothing or protective devices that cover the extremities; initiate fall precaution protocol to reduce risk of falls and blunt trauma.
- Caregivers should take caution to ensure that their own nails are kept short and that they are not wearing jewelry that can catch and contribute to skin tear formation.
- Extremes of weight (bariatric, cachectic, or excessively thin) require extra care to prevent skin tears.

It is also 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>4,56</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>4,56</sup>

### Statement 11

*Not all skin tears are preventable.*

The Skin Changes at Life's End<sup>®</sup> (SCALE) consensus document<sup>58</sup> proposes that not all wounds are preventable or healable. Individuals suffering from multiple comorbidities, dementia with aggression, or multiorgan failure are especially at risk for skin tears, which may not be preventable.

As the body's largest organ, the skin can be greatly compromised during multiorgan failure, such as at end of life. Shunting of blood away from the skin in order to support vital organs may result in decreased skin and soft tissue perfusion and reduction of the normal cutaneous metabolic process. Even minor trauma can lead to skin tears.<sup>58</sup> Every effort should be made to prevent skin tears whenever possible and to provide evidence-based, best practice care when they do occur.

### Statement 12

*Further research is needed to expand scientific knowledge to determine best practice in skin tear prediction, prevention, assessment, treatment, and documentation.*

The skin tear consensus panel recommends the following future research and tool development projects in order to fill the gaps in current literature:

- Develop an accepted definition and classification system for skin tears that may be used reliably by individuals in all healthcare settings (prerequisite for any future research).
- Conduct an international prevalence and incidence studies across different healthcare settings.
- Develop a valid and reliable risk assessment tool applicable to skin tears in all healthcare settings.
- Conduct randomized controlled trials to determine best practices for the prevention and treatment of skin tears.
- Identify unpreventable skin tear situations as protective measure to the healthcare systems.

## CONCLUSIONS

The International Skin Tear Panel members were in agreement that skin tears represent a specific and challenging type of

wound. Skin tears affect all ages and continue to be a common problem in all healthcare settings. Prevention of these wounds is the primary focus for managing this growing concern. Although management of skin tears may vary according to institution and product availability, the basic goal remains to control bleeding, prevent infection, control pain, restore skin integrity, and promote a healing environment. Literature pertaining to the prevention and treatment of these wounds is limited. Further research is needed to determine the prevalence and incidence of skin tears across healthcare settings, identify and validate an internationally accepted skin tear classification system, and validate a risk scale or predictive document. Lastly, best practice prevention and treatment guidelines are needed to assist healthcare professionals in managing skin tears and identifying those at risk for these wounds. ●

## GLOSSARY OF TERMS

**Dermis:** lower or inner layer of the main 2 layers of cells that make up the skin; consists of a bed of vascular connective tissue and contains nerves, organs of sensation, hair roots, and sebaceous and sweat glands<sup>4</sup>

**Epidermis:** outermost layer of the skin<sup>4</sup>

**Extrinsic:** from the outside of a body or organ<sup>59</sup>

**Delphi Method:** a structured communication technique, originally developed as a systematic, interactive forecasting method, which relies on a panel of experts.<sup>13</sup>

**Friction:** the resistance to motion in a parallel direction relative to the common boundary of 2 surfaces<sup>32</sup>

**Full-thickness skin loss:** ulceration that extends through the dermis to involve subcutaneous tissue<sup>4</sup>

**Healable:** ability of the individual's body to support the phases of wound healing<sup>4</sup>; the physical capacity to heal, and the system and client can support optimal treatment choices

**Healed:** restoration of tissue/skin integrity after insult<sup>59</sup>

**Intrinsic:** coming from within<sup>59</sup>

**Interprofessional:** collaborative efforts of physicians, nurses, therapists, and all other healthcare providers<sup>59</sup>

**Ischemia:** inadequate tissue perfusion as evidenced by pale, dusky, or darkened tissue<sup>59</sup>

**Nonhealable:** inability of an individual's body to repair/restore a skin/tissue defect due to multiple comorbidities<sup>59</sup>; the patient/client does not have the physical capacity to heal

**Laceration:** a torn or jagged tear of the skin; often used to describe a skin tear<sup>59</sup>

**Partial-thickness skin loss:** skin damage that involves the epidermis and can penetrate into but not through the dermis<sup>29</sup>

**Pedicle:** a flap composed of skin with or without its subjacent subcutaneous tissue, attached to the original site<sup>59</sup>

**Pressure ulcer:** localized injury to the skin and/or underlying tissue over a bony prominence, as a result of pressure, or in combination with friction or shear<sup>29</sup>

**Responsible bathing:** 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 and includes the application of hypoallergenic moisturizers post showering while skin is still damp but not wet<sup>4</sup>

**Risk assessment:** an assessment to determine which, if any, risk factors are present that might contribute to the development of a skin tear<sup>29</sup>

**SCALE<sup>®</sup>:** Skin Changes at Life's End<sup>58</sup>

**Shear:** the force per unit area exerted parallel to the plane of interest.<sup>32</sup>

## INTERNATIONAL LIST OF REVIEWERS

Elizabeth A. Ayello, PhD, RN, ACNS-BC, CWON, MAPWCA, FAAN—USA

Chris Barkauskas, BA, RN, CWOCN, APN—USA

Maureen Benbow, MSc, BA, RGN, HERC—UK

Cathy Boudens, RN, IIWCC—Canada

Sarah Bradshaw, RN—Canada

Jennifer L. Brinkman, BSN, RN, CWON, CCCN—USA

Angela Brown, MS, ANP-BC—USA

Susan Burnell-Jones, BScN, RN—Canada

Michael Byars, BSN, RN, CWOCN—USA

Beverly Cleland, BScN, RN, NCA—Canada

Patricia Coutts, RN, IIWCC—Canada

Bernadette Culhane, RN—Canada

Carol Dealey, PhD, RN, Senior Research Fellow—UK

Tammy Dietrich, RN, CWOCN USA

Richard Dionne, MD, CCFP (EM)—Canada

Jeannie Donnelly—UK

Jeanette Edie, RN, CWOCN—USA

Prof Jacqui Fletcher, MSc, RNUK

Louise Forest-Lalond, RN, Med,ET—Canada

Annick Fournier, MD, FRCSC—Canada

Jennifer Gallant, RN, IIWCC—Canada

Angela Graham, RN, CWOCN—USA

Diane Gregoire, MN, RN, ET—Canada

Mary Hill, MN, BScN, RN, CETN(C)—Canada

Regina F. Holmes, MSN, RN, CWOCN, FNP-BC—USA

Joanne M. Imbrogno Holtz, RN, CWOCN—USA

Val Irving, RN, RM BA(Hons)—UK

Vida Johnston, RN, BScN, CETN(C), CWOCN—Canada

David H. Keast, MD, MSc, FCFP—Canada

Marsha K. Kline, BSN, RN, CWCN—USA

Kathryn Kozell, MScN, BA, RN, APN, CETN(C)—Canada

Janet Kulnke, BScN, RN, ET—Canada

Diane L. Krasner, PhD, RN, CWCN, CWS, MAPWCA, FAAN—USA

Helen LeBlanc, RN—Canada

Elizabeth Lieberman, RN, BSN, CWCN—USA

*continues*



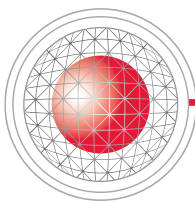
## continued

Joyce McIntyre, RN—USA  
 Mary McLaughlin, BSN, RN, CWOCN—USA  
 Mary McNeil, BS, RN, CWOCN—USA  
 Laurie McNichol, MSN, RN, GNP, CWOCN—USA  
 Mary Mahoney, BSN, RN, CWON—USA  
 Judith Manning, RN, Australia  
 Lina Martins, MScN, BScN, RN, CETN(C)—Canada  
 Mary Montague, MSN, APN, ACNS-BC, CWOCN—USA  
 Pam Morey, RN, NPWM—Australia  
 Zena Moore, PhD, MSc, PG Dip, FFMRCIS, RGN—Ireland  
 Nelly Newall, RN—Australia  
 Cindy Nissen, MSN, APN, CWOCN—USA  
 Linda Norton, OT, Med, IIWCC—Canada  
 Karen Ousey, PhD, RGN, FHEA—UK  
 Nancy Parslow, RN, CETN(C), MCISc—Canada  
 Kathy Porras, MS, RN, APRN, CWOCN—USA  
 Harriet Pilert, MS, RN, COCN—USA  
 Sandy Quigley, CWOCN, CPNP—USA  
 Catherine Ratcliff, PhD, APRN-BC, CWOCN, CFCN—USA  
 Allison Reid, MS, APRN, BC, CWOCN—USA  
 Nancy Rivera, MS, ANP-C, CWON, CFCN—USA  
 Rita Rusenas, BSN, RN, CWOCN—USA  
 Hiske Smart, MA, RN, PG, Dip (UK), IIWC—South Africa  
 Carolyn A. Sorensen, MSN, RN, CRRN, CWOCN—USA  
 Nancy M. Spillo, BSN, RN, CWON—USA  
 Nanci H. Stark, BSN, RN, CWOCN—USA  
 Theresa Swanson, NPWM—Australia  
 Sandra Tramer, BScN, RN, BA—Canada  
 Corinne Ward, MSc—Malta  
 Lynne Watret, CNS, Tissue Viability Nurse—UK  
 Lorne Wiesenfeld, MD, CM, FRCPC—Canada  
 Trudie Young, Tissue Viability Nurse—UK  
 Karen Zulkowski, DNS, RN, CWS—USA

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