Wound Care ADVISOR

Best *of the* Best 2016

Official journal of National Alliance of Wound Care and Ostomy®

PRACTICAL ISSUES IN WOUND, SKIN, AND OSTOMY MANAGEMENT

September/October 2016 • Volume 5 • Number 5

WoundCareAdvisor.com

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Wound Care Advisor (ISSN 2168-4421) is published by HealthCom Media, 259 Veterans Lane, Doylestown, PA 18901. Printed in the USA.

Editorial Mission: ***Wound Care Advisor*** provides multidisciplinary wound care professionals with practical, evidence-based information on the clinical management of wounds. As the official journal of the National Alliance of Wound Care and Ostomy®, we are dedicated to delivering succinct insights and information that our readers can immediately apply in practice and use to advance their professional growth.

Wound Care Advisor is written by skin and wound care experts and presented in a reader-friendly electronic format. Clinical content is peer reviewed.

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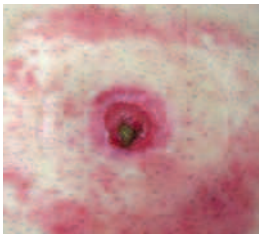
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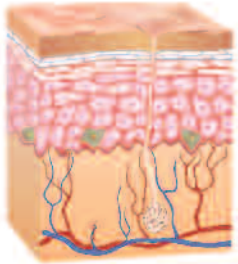
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From the EDITOR

Our gold medal issue: Best of the Best 2016

This issue marks the fourth anniversary of the "Best of the Best" issue of *Wound Care Advisor*, the official journal of the National Alliance of Wound Care and Ostomy. Fittingly, it comes during an Olympics year. Since 1904, the Olympics have awarded gold medals to athletes whose performance makes them the "best of the best." This year, we're proud to present our own "Best of the Best" in print format.

Normally, we come to you via the Internet, so this is most likely the first time you're holding *Wound Care Advisor* in your hands. Using a digital format for our peer-reviewed journal allows us to bring you practical information you can access anytime, anywhere, as well as the chance to view videos and access links to other valuable resources for you and your patients. But sometimes, it's nice to hold the print version of a journal. We hope that this annual compilation of our most popular articles will be a resource you can turn to again and again.

If you're new to *Wound Care Advisor*, this issue gives you an opportunity to see what you've been missing. If you're a regular reader, it lets you revisit some of our best articles. We've selected articles our readers have awarded "gold medals" by viewing them frequently online.

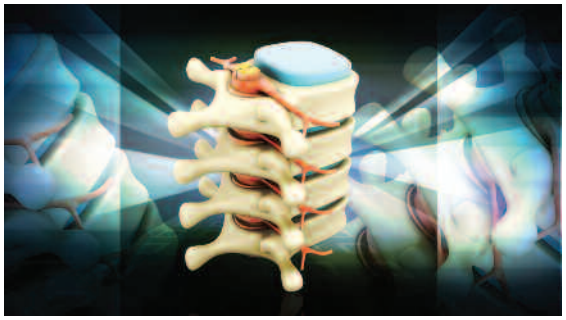
Within these pages, you'll find feature articles, best practices, step-by-step procedures, clinical resources, and news. Along with wound-related topics—including pediatric pressure ulcers, medications and wound healing, epibole, and support surfaces—you can read up on other topics, including peristomal skin problems, skin tears, and cutaneous candidiasis.

This special issue also includes the *2016 Wild on Wounds Exhibitors Guide*. Wild on Wounds (WOW) is an annual multidisciplinary national wound conference presented by the Wound Care Education Institute. The exhibitors guide features names, products, and contact information for manufacturers and companies that offer solutions to help you care for your patients. The guide is also available digitally on our website, **woundcareadvisor.com**, where can you download resources and access links to instructional and informational videos, clinical resources, and much more.

We appreciate your support and look forward to bringing you many more articles designed to help you "go for the gold" in your clinical practice.

Donna Sardina

Donna Sardina, RN, MHA, WCC, CWCMS, DWC, OMS
Editor-in-Chief
Wound Care Advisor



Electrical stimulation and pressure ulcer healing in SCI patients

A systematic review of eight clinical trials of 517 patients with spinal cord injury (SCI) and at least one pressure ulcer indicates that electrical stimulation increases the healing rate of pressure ulcers. Wounds with electrodes overlaying the wound bed seem to have faster pressure-ulcer healing than wounds with electrodes placed on intact skin around the ulcer.

"**A quantitative, pooled analysis and systematic review of controlled trials on the impact of electrical stimulation settings and placement on pressure ulcer healing rates in persons with spinal cord injuries**[A]," published in *Ostomy Wound Management*, states that the overall quality of the studies was "moderate" and that future trials "are warranted."

Effect of antiseptics on maggot viability

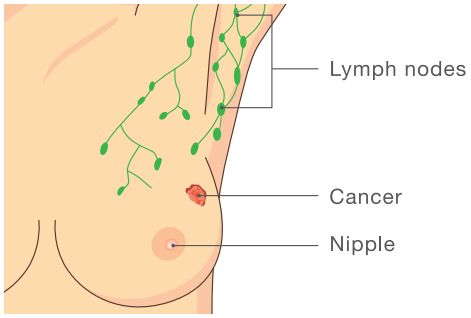
The short-term application of wound antiseptics on wound beds does not impair the viability of maggots, according to a study in *International Wound Journal*.

"**Viability of *Lucilia sericata* maggots after exposure to wound antiseptics**[B]" reports that the maggots can survive up to 1 hour of exposure to antiseptics, such as octenidine, povidone-iodine, or polyhexanide.

Global impact of diabetes underestimated

The prevalence of global diabetes has been seriously underestimated by at least 25%, according to a study published in *Nature Reviews Endocrinology*.

"**Diabetes mellitus statistics on prevalence and mortality: facts and fallacies**[C]" indicates that there may be more than 100 million people with diabetes globally than previously thought.



Axillary evaluation and lymphedema

A retrospective cohort study in *Epidemiol-*

ogy reports that women with ductal carcinoma in situ who receive an axillary evaluation have higher rates of lymphedema, without breast cancer-specific or overall survival benefit.

"**Axillary evaluation and lymphedema in women with ductal carcinoma in situ**[D]" included 10,504 women.

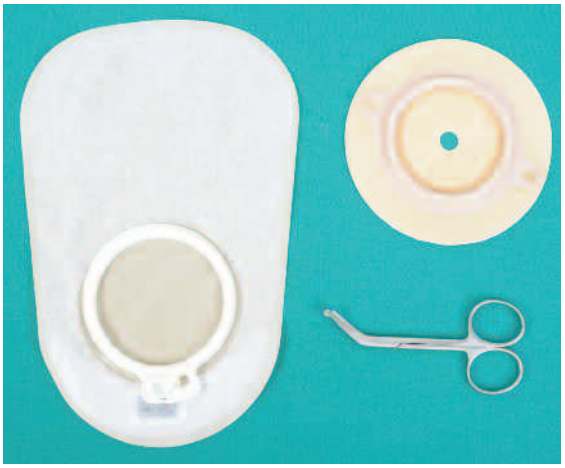
Topical insulin and pressure ulcers

"**A randomized, controlled trial to assess the effect of topical insulin versus normal saline in pressure ulcer healing**[E]" concludes that topical insulin is safe and effective in reducing the size of pressure ulcers compared to normal saline-soaked gauze.

Participants of the study, published in *Ostomy Wound Management*, received either normal saline dressing gauze or insulin dressing twice daily for 7 days. The insulin was sprayed over the wound surface with an insulin syringe, allowed to dry for 15 minutes, and then covered with sterile gauze.

Sexual function and ostomy

"**Sexual function and health-related quality of life in long-term rectal cancer survivors**[F]" reports that long-term sexual dysfunction is common in patients who have undergone surgery for rectal cancer, with more problems seen in patients who have a permanent ostomy.



The study, published in the *Journal of Sexual Medicine*, included 181 patients with an ostomy and 394 patients with anastomosis.

Effect of venous leg ulcers on body image

Many patients with venous leg ulcers have low self-esteem and negative feelings about their bodies, according to a prospective study published in *Advances in Skin & Wound Care*.

"**The impact of venous leg ulcers on body image and self-esteem**[G]" included 59 participants. The mean score on the Rosenberg Self-esteem Scale was 22.66, indicating low self-esteem. ■

Online Resources

A. o-wm.com/article/quantitative-pooled-analysis-and-systematic-review-controlled-trials-impact-electrical

B. onlinelibrary.wiley.com/doi/10.1111/iwj.12637/abstract

C. nature.com/nrendo/journal/vaop/ncurrent/full/nrendo.2016.105.html

D. link.springer.com/article/10.1007/s10549-016-3890-0

E. o-wm.com/article/randomized-controlled-trial-assess-effect-topical-insulin-versus-normal-saline-pressure

F. jsm.jsexmed.org/article/S1743-6095(16)30220-X/abstract

G. journals.lww.com/aswcjournal/Abstract/2016/07000/The_Impact_of_Venous_Leg_Ulcers_on_Body_Image_and.7.aspx

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How to manage peristomal skin problems

Proper peristomal skin care and interventions for skin problems can improve patient outcomes.

By Armi S. Earlam, DNP, MPA, BSN, RN, CWOCN

For an ostomy pouching system to adhere properly, the skin around the stoma must be dry and intact. Otherwise, peristomal skin problems and skin breakdown around the stoma may occur. In fact, these problems are the most common complications of surgical stomas. They can worsen the patient's pain and discomfort, diminish quality of life, delay rehabilitation, increase use of ostomy supplies, and raise healthcare costs.

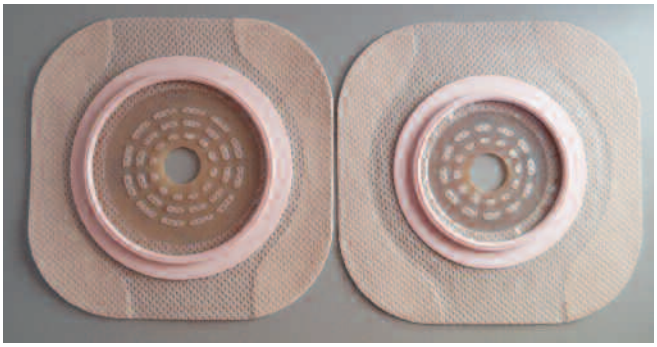
Peristomal skin problems also perpetuate a vicious cycle in ostomy patients: They impair adhesion of the pouching system, which in turn exacerbates the skin problem. That's why maintaining peristomal skin integrity and addressing skin problems promptly are so crucial.

This article focuses on three peristomal skin problems common in both inpatients and home healthcare patients—allergic contact dermatitis, irritant dermatitis, and fungal infection. It describes how to perform routine peristomal skin care; identifies the causes, clinical features, and prevention of these problems; and discusses appropriate interventions.

Types of skin barriers

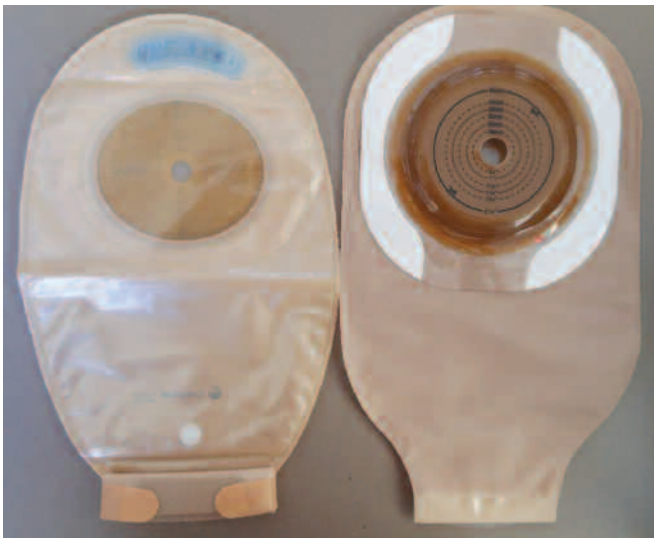
Skin barriers (the wafers that adhere to the skin where the ostomy pouch attaches) come in two common types—two-piece and once-piece systems.

The barrier shown at top right is a two-piece system; the ostomy pouch attaches to the barrier. To attach the pouch, snap it on just as you'd snap on the lid of a food storage container.



Two-piece skin barrier

In the one-piece barrier pouching system shown below, the ostomy pouch and barrier are integrated as a single unit.



One-piece skin barrier with adhesive barrier on side and front

Removing the skin barrier and locating leakages

The proper way to remove the skin barrier is to gently peel it while pressing down on or supporting the skin. To locate a leak, examine the removed skin barrier by as-

sessing the part that adhered to the skin.

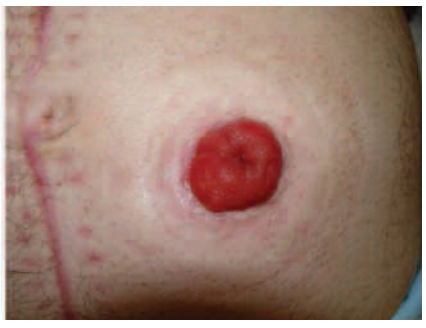
Cleaning around the ostomy

To clean around the ostomy, use warm water. Avoid routine use of soap or baby wipes; both may leave residue that can cause dermatitis or impede barrier adhesion. If you must use soap, avoid soap that contains oils and be sure to rinse the skin thoroughly. If the patient insists on using products other than water for cleaning, advise him or her to use skin wipes specially made for peristomal skin care.

If skin around the ostomy is hairy, shaving helps prevent folliculitis and painful skin-barrier removal. An electric shaver is preferable to a safety razor. But if your patient wants to use a safety razor, teach him or her to shave away from the stoma and use either a wet lubricant (mild soap) or a dry lubricant (for example, shaving cream or an ostomy barrier powder, which must be rinsed well after shaving). Advise the patient to rinse and dry the skin after shaving. Some patients prefer laser hair removal, although this can be expensive.

Normal peristomal skin

Ideally, skin around the ostomy should look like that in the image below, with no breakdown, redness, or lesions.

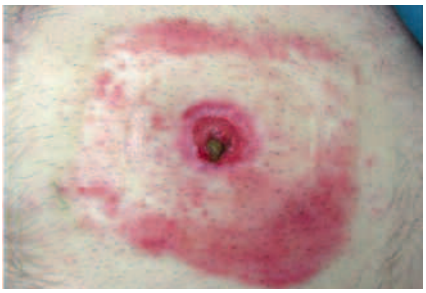


*Viable budded stoma**

Allergic contact dermatitis

Allergic contact dermatitis is an immunologic response to an irritant or allergen. This condition may be hard to prevent unless the patient has a known history of allergy to the offending item. Unfortunately, many patients don't find out about the allergy until they use the product.

On assessment, you may note papules and vesicles, along with redness, discoloration on darker skin, crusting, oozing, or dryness. (See the image below.) The patient may complain of burning or itching. The rash may match or mirror the area of contact with the allergen.



*Allergic dermatitis**

To manage allergic dermatitis, follow these guidelines:

- Remove the irritant or allergen. In some cases, the patient may have to switch to a different brand of ostomy products. Skin-barrier adhesives may vary by brand. However, the patient might want to try another type of skin barrier from the same brand because it may have a different adhesive.
- Eliminate unnecessary ostomy products. Some manufacturers recommend against using skin barrier films or skin sealants, so be sure to check manufacturers' recommendations for products you could eliminate.
- If the patient's skin is denuded, consider using the crusting method, in which ostomy powder and skin prep are combined to form a crust on the affected peristomal skin. Ideally, use a no-sting skin prep instead of a regular one, which can cause pain from the chemical content. For details on the crusting method, **click here**[A]. To watch a video **click here**[B]. Caution: Use the crusting method only if the patient has a peristomal skin problem—not if the skin is intact.

Where to get help

For more help in addressing peristomal skin problems, visit the websites below. The National Alliance of Wound Care and Ostomy and the Wound, Ostomy and Continence Nurses Society can provide a list of certified clinicians in your community. The United Ostomy Associations of America offers information about local ostomy support groups and provides brochures about common ostomy surgeries. Representatives of the manufacturers listed here can answer questions you or your patients might have about their products.

Support and assistance resources

American Cancer Society
www.cancer.org

Crohn's and Colitis Foundation of American
www.ccfa.org

National Alliance of Wound Care and Ostomy
www.nawccb.org

Osto Group
www.ostogroup.org

United Ostomy Associations of America
www.ostomy.org

Wound, Ostomy and Continence Nurses Society
www.wocn.org

Ostomy product manufacturers

Coloplast
www.coloplast.us

ConvaTec
www.convatec.com

Cymed
www.cymedostomy.com

Hollister
www.hollister.com

Marlen
www.marlenmfg.com

Nu-Hope Laboratories
www.nu-hope.com

- Consider a topical or systemic steroid. But be aware that steroid creams or ointments can impede adhesion of the skin barrier.
- For help in addressing a patient's peristomal skin problem, consult a nurse who is certified in ostomy care in your community or in the agency or facility where you work.
- For severe or recalcitrant allergic contact dermatitis, arrange for a dermatology consult.
- Inform the patient and caregiver that allergic dermatitis usually presents as skin irritation that mirrors the size and shape of the skin barrier or parts of it (such as the tape). If such irritation occurs, advise them to contact the ostomy nurse or product manufacturer, who may suggest they try a different brand or type of skin barrier. (For resources that can help you manage this and other problems discussed in this article, see *Where to get help*.)

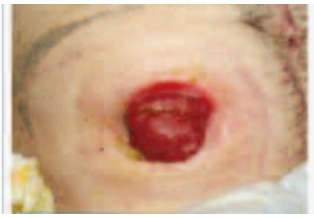
Irritant dermatitis

Irritant dermatitis (sometimes called contact irritant dermatitis) refers to skin damage caused by exposure to fecal or urinary drainage or chemical preparations. In ostomy patients, it usually results from enzymatic drainage. Other common causes include exposure to soaps, solvents, and adhesives. Also, a skin barrier that's cut too large can expose a relatively large area of skin to stool or urine. To improve barrier sealing, you may need to modify the pouching system or add accessories.

As with allergic dermatitis, irritant dermatitis may cause pruritus and present as papules and vesicles, redness, dark discoloration, or crusting, oozing, or dryness, along with well-defined erythema, edema, or epidermal loss. (See the image at right.)

To manage irritant dermatitis:

- Use the correct size opening for the pouching system.

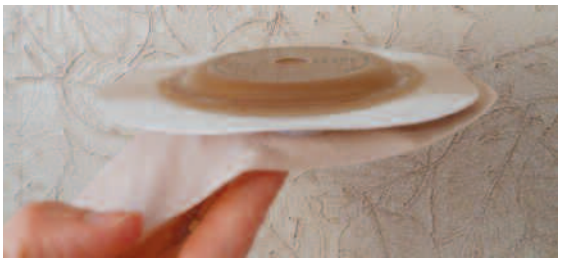


*Denuded peristomal skin**

- Modify the pouching system by using an ostomy belt or a convex skin barri-

er instead of a flat one. (See the images below.)

Ostomy belt



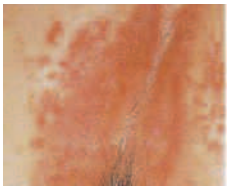
Convex skin barrier

- Try using a convex or flat barrier ring.
- Use the crusting method to create a dry surface for pouch adhesion.
- Use a cyanoacrylate-based product as a protective layer over the skin.
- Educate the patient and caregiver about the interventions described above.
- For persistent cases of irritant dermatitis, arrange for a dermatology consult.

Candidiasis infection

Candidiasis (a fungal infection sometimes called moniliasis or yeast rash) stems from body perspiration, denuded skin, or a leaking pouch system. Predisposing factors include diabetes mellitus, immunosuppression, and use of oral contraceptives, steroids, or antibiotics.

Candidiasis may present as discoloration—specifically, redness or darker pigmentation. Papules, pustules, and pruritus may occur. Satellite lesions may show maceration. (See the image below.)



*Candidiasis skin infection with satellite lesions**

The following actions can help prevent fungal skin infection:

- Eliminate moisture by using a properly fitting pouching system.
- Use a pouch cover or a pouch with a cloth backing.
- Dry the pouching system well after swimming, bathing, showering, or contact with water or steam.
- If the patient has an established pattern of fungal infections—for example, if he or she has a history of developing a fungal rash during antibiotic therapy—prophylactic treatment (as with oral diflucan) may be warranted.

To manage candidiasis, use the crusting method with antifungal powder and skin prep. The powder treats candidiasis and the skin prep helps seal in the powder. If more than one body part is involved, the patient may need systemic treatment. In diabetic patients, blood glucose control can help prevent this infection.

There are three common peristomal skin problems: allergic contact dermatitis, irritant dermatitis, and fungal infection.

Improving patient outcomes

Besides causing pain and discomfort, peristomal skin problems also may impede pouch adherence, which can affect the patient's adjustment to living with an osto-

my. In addition, constant leakage from a nonadherent skin barrier may lead to isolation and other psychological problems. Teaching ostomy patients about proper peristomal skin care and how to address peristomal skin problems can greatly improve their outcomes. ■

*Images of viable budded stoma, allergic dermatitis, denuded peristomal skin, and candidiasis skin infection with satellite lesions courtesy of Wound, Ostomy and Continence Nurses Society. (N.D.) WOCN Image Library. [Image database]. www.wocn.org/page/ImageLibrary

Online Resources

A. http://earlamperistomalskincare.blogspot.com/2014/11/crusting-method.html

B. https://www.youtube.com/watch?v=v83hWZDMpgE

Armi S. Earlam is the lead certified wound, ostomy, and continence nurse at Lutheran Medical Center in Wheat Ridge, Colorado. She recently graduated from the Doctor of Nursing Practice program at Regis University in Denver, Colorado. Ms. Earlam wishes to acknowledge the assistance of Bonnie Sue Rolstad and Debra Netsch for information contained in this article.

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Apple BITES

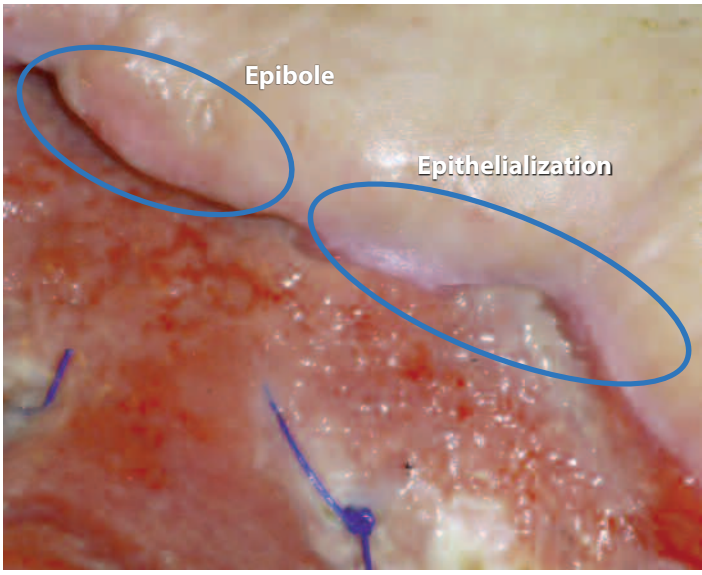
Dose from WCEI

WOUND CARE EDUCATION INSTITUTE®

Causes, prevention, and treatment of epibole

By Nancy Morgan, RN, BSN, MBA, WOC, WCC, DWC, OMS

Each issue, *Apple Bites* brings you a tool you can apply in your daily practice. Here is how to prevent and treat epibole.



In an epibole, the wound edges close prematurely, which halts epithelialization, delays healing, and necessitates additional intervention.

As full-thickness wounds heal, they begin to fill in from the bottom upward with granulation tissue. At the same time, wound edges contract and pull together, with movement of epithelial tissue toward the center of the wound (contraction). These epithelial cells, arising from either the wound margins or residual dermal epithelial appendages within the wound bed, begin to migrate in leapfrog or train fashion across the wound bed. Horizontal movement stops when cells meet (contact inhibition). The ideal wound edge is attached to and flush with the wound bed, moist and open with the epithelial rim thin, and pale pink to translucent.

In many chronic wounds, a problem with slow or absent epithelial edge advancement is caused by a clinical condition known as epibole. Epibole refers to rolled or curled-under closed wound edges that may be dry, callused, or hyperkeratotic. Epibole tends to be lighter in color than surrounding tissue, have a raised and rounded appearance, and may feel hard, rigid, and indurated.

Causes

Epibole results when the upper epidermal cells roll down over the lower epidermal cells and migrate down the sides of the wound instead of across. Edges that roll over ultimately cease migration secondary to contact inhibition once epithelial cells of the leading edge come in contact with other epithelial cells. In other words, the body thinks the wound is healed and epithelial migration across the top of the wound ceases. There are many possible

reasons why the epidermal margin fails to migrate, including hypoxia, infection, desiccation, dressing trauma, overpacking the wound bed, unhealthy wound bed, inability to produce the basement membrane that the epithelial cells adhere to, or cellular senescence.

Epibole results when the upper epidermal cells roll down over the lower epidermal cells and migrate down the sides of the wound instead of across.

Prevention

Follow these tips to help prevent epibole:

- Pack dead or empty space in the wound bed. Packing promotes healing from the bottom up and avoids abscess formation at the wound depth. Fill the depth of the wound to the surface. Do not pack tightly, as this will cause pressure and impair circulation. Wound fillers, hydrogel impregnated gauze, alginates, or fluffed plain-woven moistened gauze can be placed loosely into the space.
- Protect periwound skin with a skin sealant, moisture barrier ointment, or barrier wafer.
- Prevent epidermal stripping by using silicone border dressings or silicone tape; consider tape-free securement strategies.
- Protect the wound from pressure.

Treatment

Treatment for epibole involves reinjuring the edges and opening up the closed tissue, which renews the healing process. Options include conservative or surgical sharp debridement, **treatment with silver nitrate**[A], and mechanical debridement by scrubbing the wound edges with monofilament fiber dressings or gauze. ■

Nancy Morgan, cofounder of the Wound Care Education Institute, combines her expertise as a Certified Wound Care Nurse with an extensive background in wound care education and program development as a nurse entrepreneur.

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Online Resource

A. http://woundcareadvisor.com/how-to-apply-silver-nitrate/

How to apply silver nitrate

By Nancy Morgan, RN, BSN, MBA, WOC, WCC, DWC, OMS

Each issue, *Apple Bites* brings you a tool you can apply in your daily practice. Here is how to safely apply silver nitrate.

Topical application of silver nitrate is often used in wound care to help remove and debride hypergranulation tissue or calloused rolled edges in wounds or ulcerations. It's also an effective agent to cauterize bleeding in wounds. Silver nitrate is a highly caustic material, so it must be used with caution to prevent damage to healthy tissues.

Application method

Silver nitrate applicators are firm wooden sticks with 75% silver nitrate and 25% potassium nitrate embedded on the tip. Moistening the tip sparks a chemical reaction that burns organic matter (skin), coagulates tissue, and destroys bacteria.

Precautions

- Silver nitrate is **very caustic** to skin and clothing. Wear protective equipment as needed.
- Excess silver nitrate can be neutralized with 0.9% or stronger saline and then washed away with water.
- Because silver nitrate is a corrosive substance, apply it only to tissue to be treated. Take care to confine the silver nitrate to the desired area by using a suitable barrier, such as petroleum jelly. Prevent any excess from oozing by covering the application area as necessary.
- Silver nitrate directly reduces fibroblast proliferation, so it is **not** recommended for prolonged or excessive use.
- Some patients report pain or burning during treatment with silver nitrate. Consider the need for medication before the procedure, including use of topical anesthetic, to reduce discomfort.

Procedure

1. Wash your hands and put on gloves.
2. Remove the wound dressing, following dressing-removal procedure.
3. Wash your hands and put on new gloves.
4. Clean the wound with sterile normal saline solution according to wound-cleansing procedure.
5. Remove your gloves, wash your hands,

Because silver nitrate is a corrosive substance, apply it only to tissue to be treated.

and put on new gloves.

6. Confine the area to be treated by encircling it with petroleum jelly or equivalent.
7. Cover the wound base tissue with moistened normal saline gauze to protect it from any spillage. It is important not to allow drips of silver nitrate to settle on any surface, as they will stain and burn.
8. Slightly moisten the caustic tip of the silver nitrate applicator stick by dipping (tip only) in distilled or deionized water.
9. To apply to tissue, rub and rotate the tip of the applicator along the tissue to be debrided. Two minutes of contact time is typically sufficient, keeping in mind that the degree of caustic action depends on the quantity of silver nitrate applied, which in turn is governed by the length of time the moistened tip is left in contact with the tissue. Do not touch any other part of the body, clothing, or furnishings with the tip. Depending on the size of the area to be debrided, more than one applicator may be needed.
10. Monitor the patient closely for response to the procedure, including pain and discomfort. STOP the procedure if the patient complains of pain.
11. Use damp saline gauze to gently clean the treated area after application. Pat dry to avoid trauma to surrounding tissue. Do not rub or apply friction to treated area.
12. Remove gloves and put on new ones.
13. Apply any other prescribed treatment to the wound base as ordered.

Length of treatment

Frequency of application varies based on wound needs. If silver nitrate is being used for hypergranulation, apply it once daily for up to 5 days or until resolution of hypergranulation. In the case of rolled edges/epibole, treatment varies from daily to 3 times a week until the problem is resolved.

Use with care

Silver nitrate can be an effective tool in treating wounds, but, as with many treatments, it must be used with care to obtain the best results for patients. ■

Nancy Morgan, cofounder of the Wound Care Education Institute, combines her expertise as a Certified Wound Care Nurse with an extensive background in wound care education and program development as a nurse entrepreneur.

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(AppleBites continued on page 22)

CASE STUDY:

Peristomal pyoderma gangrenosum

By Susan Lee, BSN, RN, WCC

As a wound care specialist, you have learned about many skin conditions, some so unusual and rare that you probably thought you would never observe them. I've been a nurse for 38 years, with the last 10 years in wound care, and that's certainly what I thought. But I was wrong. Let me tell you about my challenging patient with an unusual skin condition.

A perplexing patient

Mrs. Thompson*, a 77-year-old resident in a long-term care facility where I work, had diabetes, peripheral vascular disease, and a history of a cerebrovascular accident in 1993, which left her with left-sided paralysis.

In February 2010, Mrs. Thompson underwent a colostomy in her left lower abdominal quadrant as a result of a large sigmoid colon volvulus. She was doing well until November 2011, when periostomal skin breakdown began, presumably caused by leakage. Over the course of the next 18 months, her skin breakdown would often improve without any change in treatment, which made subsequent exacerbations frustrating.

Here are the appliance-related adaptations my colleagues and I tried with Mrs. Thompson:

- stoma powders and paste
- wafer adaptations
- plain and medical-grade honey hydrocolloid applied directly to peristomal lesions.

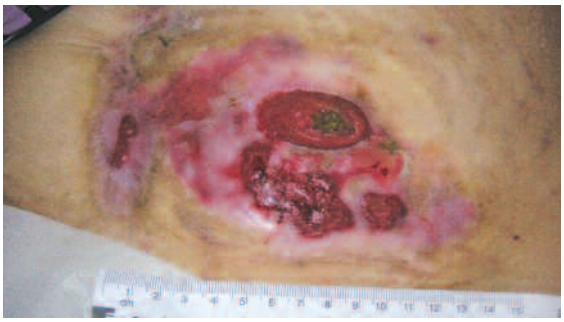
Unfortunately, none of these efforts solved the problem. A March 2013 dermatology consult resulted in no definitive diagnosis or alternative treatment options.

My "Aha" moment came when a computer search for causes of periostomal breakdown revealed illustrations of various conditions. One image, labeled pyoderma gangrenosum (PG), resembled what was occurring with Mrs. Thompson.

About pyoderma gangrenosum

PG, a skin ulceration, was first described in 1930 by Brunsting and colleagues. It's associated with Crohn's or inflammatory bowel disease, cancer, blood dyscrasias, diabetes, and hepatitis.

PG has been described in several forms, but ulceration usually occurs on the abdomen, perineum, and lower extremities. The lesions begin as discrete pustules that erupt and coalesce into a classic painful ulcer with a violaceous border and undermined edge. Multiple lesions are common.



Mrs. Thompson's wound at the time of diagnosis

Diagnosis

The diagnosis of peristomal PG is based on the patient's history and characteristics of skin breakdown because biopsies and cultures can't confirm the diagnosis. The lesions are typically very painful, but Mrs. Thompson didn't experience pain because of the left-sided sensory deficits caused by

her stroke. In one study, the time to onset of periostomal PG after creation of a stoma ranged from 2 months to 25 years; in Mrs. Thompson's case, onset was 20 months. The erratic progression of this rare disease is considered a hallmark of the disorder.

Even though diagnosis of skin conditions can be difficult, it's important not to give up.

My colleagues and I validated the diagnosis of periostomal PG by characteristics of the lesions and exclusion of other skin conditions.

Management

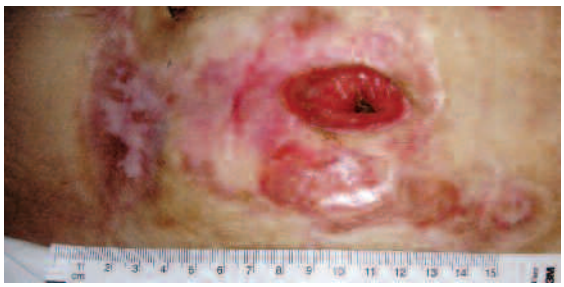
The unknown etiology of the peristomal lesions makes treatment decisions challenging. Because the condition is rare, recent evidence-based practice data are limited, with most reported as part of research trials. When lesions are mild and there is absence of systemic disease, it may be possible to control the condition with topical corticosteroids and dressings.

Based on what we could find in the literature and discussion with the geriatric nurse practitioner and Mrs. Thompson's primary care physician, we decided to start her on high-dose steroid cream.

Positive results

On April 4, 2013, Mrs. Thompson began receiving daily clobetasol propionate 0.05%, a high-dose steroid cream applied to the peristomal area. We gently rubbed in the cream completely, followed by an aerosol skin barrier and a one-piece appliance. The treatment was re-evaluated every 14 days, as recommended by the manufacturer, because of the risk for hyperglycemia, which did not occur.

By June 13, 2013, 72 days later, the lesions had healed and we resumed biweekly appliance changes.

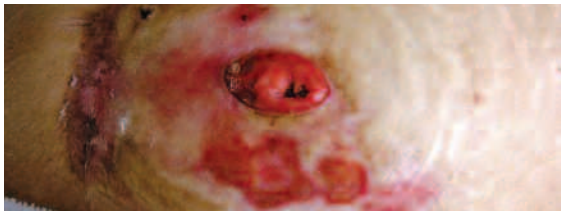


Lesions healed after 72 days of clobetasol propionate 0.05%.

This healing time of about 2.4 months was much faster than what we found in the literature: One study reported an average healing time for periostomal PG of 11.4 months (median, 7.5 months; range 1-41 months).

After the initial PG exacerbation was healed, Mrs. Thompson occasionally experienced minor exacerbations, but not to the extent it was when first diagnosed and treated with clobetasol.

One 60-g tube of clobetasol propionate 0.05% (cost of $328) was required to successfully treat the breakdown.



Complete wound healing at 120 days

Committed to healing

Comorbid conditions play an important role in effectively diagnosing and treating skin breakdown. In Mrs. Thompson's case, sensory deficits from a stroke sustained almost 20 years earlier diminished her ability to feel pain at the stoma site, which is the signature diagnostic characteristic of PG.

I learned that even though diagnosis of skin conditions can be difficult, it's important not to give up. My commitment, along with the commitment of my colleagues, resulted in our ability to find a solution for Mrs. Thompson's condition. ■

*Name is fictitious.

Susan Lee is a wound care provider for two long-term care facilities, Maluhia and Leahi Hospital in the Oahu Region of the Hawaii Health System Corporation in Honolulu, Hawaii.

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Time to select a support surface

By Donna Sardina, RN, MHA, WCC, CWCMS, DWC, OMS

Having the proper support surface for beds and wheelchairs is imperative in preventing pressure ulcers. "Pressure" ulcers are named that for a reason—pressure is the primary cause of interruption of blood flow to the tissue. Unfortunately, guidelines for support surface selection tend to make recommendations for the type of surface to use *after* a pressure ulcer has developed. Another factor that complicates matters is the development of deep-tissue injuries. These injuries start at the bone level, which means that often, tissue damage is extensive before we see visible signs and realize that the support surface we chose might not have been effective enough.

Being proactive in preventing pressure

ulcers requires that a pressure redistribution surface is provided for the bed and wheelchair when the patient is admitted. Even when you decide to apply a support surface early, choosing the specific surface can be difficult.

Choosing a support surface

What makes support surface selection so challenging is that we are all different in body weight, size, distribution of weight, and sensitivity to pressure, humidity, and temperature. What might be cool and comfortable (and prevent a pressure ulcer) for one patient might be too firm and hot for another. Of course, it's not possible to have every type of support surface in stock. Clinicians and administrators should consider the following characteristics when working with manufacturers to determine the options to provide. The products that best fit the following areas should be considered:

- **Microclimate**: Does the product diffuse heat and prevent humidity?
- **Immersion**: What is the immersion capability? Immersion is the ability to "sink" into a support surface. The more a patient can sink into the surface without bottoming out (there should be at least 1" of space between the buttock and the bed frame), the less likely there will be pressure points.
- **Envelopment**: What is the envelopment degree of the surface? Envelopment is the ability of the support surface to conform to body contours. The more the surface can conform to body contours, the more effective it will be in preventing pressure.
- **Shear and friction**: Does the cover of the support surface help reduce shear and friction?

Another important question is, "For up to what stage ulcer is the mattress recommended?"

Following up

Your responsibility doesn't end with the initial application of the support surface on admission. You need to re-evaluate the choice of support surface every time you conduct a risk assessment of skin integrity and when any of the following occurs:

- decline in mobility status
- decline in activity level. This factor is of-

ten overlooked in patients who are independent in their mobility. Even though they are independent, they may choose to sit for prolonged periods or prefer to stay in the same positon.
- acute illness or injury that may render patients bedbound or decrease their activity level
- change in weight; weight loss may accentuate a bony prominence or weight gain can affect the ability to move.
- development of a pressure ulcer.

Taking prompt action

Support surfaces can be expensive, but selecting the right support surface early and changing it as needed is more cost effective in the long run if pressure ulcers are prevented or a current pressure ulcer heals more quickly. You also need to consider that to prove a pressure ulcer was unavoidable, the care setting needs to show that interventions were in place before its development. Choosing—and documenting—appropriate support surfaces will help provide that proof.

For more information on support surface selection, refer to the National Pressure Ulcer Advisory Panel's "Prevention and Treatment of Pressure Ulcers: Clinical Practice Guideline." You can **order the guidelines online**[A] and **download a copy**[B] of the Quick Reference Guide. Another resource is the **evidence-based support surface algorithm**[C] available from the Wound, Ostomy and Continence Nurses Society. ■

Donna Sardina is editor-in-chief for *Wound Care Advisor*.

Online Resources

A. npuap.org/resources/educational-and-clinical-resources/prevention-and-treatment-of-pressure-ulcers-clinical-practice-guideline/

B. puap.org/wp-content/uploads/2014/08/Updated-10-16-14-Quick-Reference-Guide-DIGITAL-NPUAP-EPUAP-PPPIA-16Oct2014.pdf

C. algorithm.wocn.org/#home

Apple BITES

Dose from WCEI

WOUND CARE EDUCATION INSTITUTE®

Medications and wound healing

By Nancy Morgan, RN, BSN, MBA, WOC, WCC, DWC, OMS

Each issue, *Apple Bites* brings you a tool you can apply in your daily practice. Here are examples of medications that can affect wound healing.

Assessment and care planning for wound healing should include a thorough review of the individual's current medications to identify those that may affect healing outcomes. Clinicians must then weigh the risks and benefits of continuing or discontinuing the medications. In some cases, the risk of discontinuing the medication outweighs the importance of wound healing, so the goal of the care plan should be adjusted to "maintain a wound" instead of "healing." ■

Nancy Morgan is cofounder of Wound Care Education Institute in Plainfield, Illinois.

Selected reference

Guo S, DiPietro LA. Factors affecting wound healing. *J Dent Res.* 2010;89(3):219-29.

Medication	Effects on wound healing
Corticosteroids Examples: cortisone, hydrocortisone, and prednisone	• Inhibition of epithelial proliferation • Impairment of inflammatory response • Incomplete granulation tissue • Reduced wound contraction • Possible increased risk of wound infection
High doses of nonsteroidal anti-inflammatory drugs (NSAIDs) Examples: ibuprofen, celecoxib	• Decreased tensile strength of wound • Reduced wound contraction • Delayed epithelialization
Antiplatelets Examples: aspirin, clopidogrel	• Decreased platelet adhesion and activation • Inhibition of inflammation phase of healing • Inhibition of epithelial proliferation of keratinocytes
Anticoagulants Example: heparin	• Inhibition of cross linking of collagen and acceleration of its degradation
Vasoconstrictors Examples: nicotine, cocaine, adrenaline (epinephrine), and ergotamine	• Tissue hypoxia by reducing microcirculation
Antineoplastic agents Example: chemotherapy medications	• Delay of cell migration into wound • Lower collagen production • Impaired proliferation of fibroblasts • Inhibition of contraction of wounds • Possible increased risk of wound infection

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1. Ochs RF, Horn SD, et al. Comparison of Air-Fluidized Therapy with Other Support Surfaces Used to Treat Pressure Ulcers in Nursing Home Residents. Ostomy Wound Management, 2005, 51(2):38-68.

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Apple BITES

Dose from WCEI

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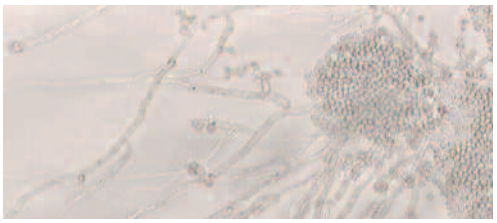
Cutaneous candidiasis

By Nancy Morgan, RN, BSN, MBA, WOC, WCC, DWC, OMS

Each issue, *Apple Bites* brings you a tool you can apply in your daily practice. Here's an overview of cutaneous candidiasis.

Cutaneous candidiasis is an infection of the skin caused by the yeast *Candida albicans* or other *Candida* species. Here's a snapshot of this condition.



Wikimedia Commons, Y tambe

Cause

Yeast fungi, which include the *Candida* species, are normal flora found throughout the human GI tract. These fungi thrive in a warm, moist environment, so certain conditions, such as poor hygiene, tight clothing, moist skin under surgical or wound dressings, high humidity, and constantly moist skin can result in overgrowth. When the overgrowth occurs on skin, it's called cutaneous candidiasis. Other conditions that can contribute to cutaneous candidiasis include compromised immunity, antibiotics, stress, and diabetes.

Characteristics

- **Location**—most commonly found in intertriginous areas, such as in the axillae, groin, body folds, gluteal folds, digital web spaces, and glans penis, as well as beneath the breasts
- **Appearance**—in people with light skin tones: bright- to dull-red central area with peripheral red vesicles (satellite lesions); in people with dark skin tones: darker than surrounding skin, color may vary from dark-red to purple, purple-blue, violet, or eggplant
- **Distribution**—consolidated or patchy
- **Shape**—diffuse differential areas; small round erythematous papules, pustules, plaques, and/or satellite lesions
- **Depth**—partial thickness; superficial epidermal infection
- **Wound bed**—pink or beefy red; associated crusting or scaling with cheesy white exudate
- **Margins**—Diffuse and irregular edges; satellite lesions (outside the advancing edge of candidiasis) are the most important diagnostic feature
- **Key diagnostic indicator**—itching and/or burning.

Management

The first strategy is to remove moisture:

- Place absorptive fabric in skin folds.
- Teach the patient and caregiver(s) meticulous skin care.

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- Change linen and gowns as frequently as needed to keep dry.
- Minimize friction and shear to the skin when cleansing, and use a pH-based, skin-friendly cleanser. No-rinse cleansers are particularly useful.
- Dry the skin well, especially in the skin folds.

At the first sign of redness, itching, or discomfort, apply an over-the-counter (OTC) or prescription antifungal powder or a silver powder/cream to the area daily per package instructions. **Examples**[A] include:

- Nystatin
- Clotrimazole (Lotrimin, OTC)
- Miconazole (Micatin, OTC)
- Econazole (Spectazole)
- Ketoconazole (Nizoral)
- Oxiconazole (Oxistat).

If, after 10 to 14 days of treatment with an antifungal product, the rash is not resolving, consider switching to another preparation because *Candida* resistance can occur. ■

Nancy Morgan, cofounder of the Wound Care Education Institute, combines her expertise as a Certified Wound Care Nurse with an extensive background in wound care education and program development as a nurse entrepreneur.

Online Resources

A. http://www.woundsource.com/product-category/skin-care/antimicrobialsantifungals

B. http://www.wcei.net/

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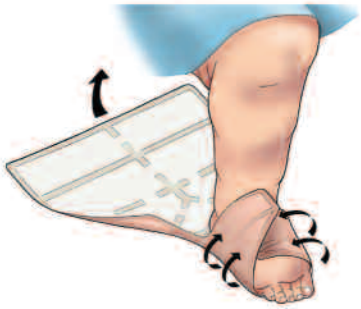

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No more skin tears

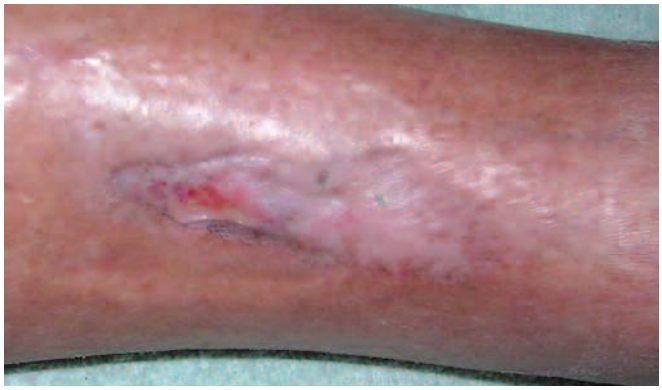
Learn how to prevent, assess, and treat these common injuries.

By Gail R. Hebert, MS, RN CWCN, DWC, WCC, OMS

Imagine watching your skin tear, bleed, and turn purple. Imagine, too, the pain and disfigurement you'd feel.

What if you had to live through this experience repeatedly? That's what many elderly people go through, suffering with skin tears through no fault of their own. Some go on to develop complications.

A skin tear is a traumatic wound caused by shear, friction, or blunt-force trauma that results in a partial- or full-thickness injury. Skin tears are painful because the precipitating injury commonly involves the dermis, which is rich with nerve endings.



Skin tears that lead to complications can exact a toll not just on patients but also on healthcare facilities, whose reputations may suffer if the public believes staff are delivering a poor quality of care. A reported 1.5 million skin tears occur in institutionalized adults each year. And that doesn't include tears that occur at home. The problem isn't going away any time soon.

So what makes skin tears such a frequent occurrence? Who's at greatest risk? How can we better prevent and treat them?

Pathophysiology

With age, our skin undergoes specific, well-documented changes. The epidermis and dermis are joined together by a wave-like basement membrane that prevents sliding. In aging skin, this junction flattens, allowing the skin to slip back and forth. This decreases the surface area between the layers, in turn reducing nutrient transfer and resistance to shearing forces.

Aging also slows epidermal turnover, wound repair, and collagen deposition; impairs vascularity; and causes thinning of the dermal and subcutaneous layers. These changes work in tandem to make the skin much more susceptible to the shearing and friction forces that result in skin tears.

Causes

Common causes of skin tears include:

- applying or removing stockings, particularly over tibial areas and ankles
- removing tape or dressings too often, which can strip the epidermis
- improper patient handling
- handling by caregivers who are wearing jewelry or have long fingernails
- blunt-force trauma, as from a patient fall or wheelchair injury.

In some cases, the cause of a skin tear can't be identified—for example, in patients with cognitive impairment who can't communicate what happened to cause the injury.

Risk factors

Patients who depend on caregiver assistance for activities of daily living are at risk for skin tears. Assistance with bathing, dressing, positioning, and transferring involves significant caregiver handling. Research from across many settings shows that roughly 70% to 80% of skin tears occur on the hands and arms, and most happen during peak activity hours (from 6 to 11 AM and from 3 to 9 PM).

Very young patients with immature skin also are at risk. The dermis doesn't develop fully until after birth; even at full-term, it has reached only 60% of its adult thickness. In neonates, skin tears commonly are linked to device trauma or adhesive use. In many cases, they occur on the head, face, and extremities.

Additional at-risk groups include critically ill patients with multiple risk factors and older adults who ambulate independently, especially those with an unsteady gait. Among these older adults, skin tears are common on the lower extremities. (See *Additional risk factors for skin tears*.)

Risk assessment tool

You can use a risk assessment tool to help identify patients at risk and guide implementation of a prevention protocol. Called the Skin Integrity Risk Assessment Tool by White, Karam, and Colwell, it's the only tool designed specifically to assess skin integrity risk. Although the instrument is somewhat dated and not used widely in clinical settings, clinicians who've adopted it report it helps reduce skin-tear incidence through early identification and immediate targeted prevention. (**Click here**[A] for more information.)

Assessment

The Payne-Martin Classification system provides a common language for assessing and classifying skin tears, promoting better communication among clinicians and helping to guide treatment. Developed in 1990 and updated in 1993, it has three primary classifications based on degree of severity. Besides helping clinicians differentiate full-thickness from partial-thickness tears, it addresses the skin flap (if present). For images of skin tears classified by the Payne-Martin system, **click here**[B].

In addition to identifying the skin-tear classification, also check for and document the following:

- anatomic location and duration of the tear
- dimensions of the tear (length, width, and depth)
- wound bed characteristics and percentage of viable vs. nonviable tissue
- exudate type and amount
- presence of bleeding or hematoma
- periwound skin color and condition; note edema, maceration, and induration
- wound-edge approximation and condition (open vs. closed)
- degree of flap necrosis
- integrity of surrounding skin
- signs and symptoms of infection
- associated pain.

Prevention

Preventing skin tears requires a multifaceted approach, described below. Although not all skin tears are preventable, take all necessary steps to minimize risk. Remember—skin tears are a negative patient out-

Additional risk factors for skin tears

Patients with the following conditions may be at higher risk for skin tears:

- compromised nutritional status
- sensory and cognitive deficits
- visible changes to the skin
- agitated behavior
- incontinence
- cardiac, pulmonary, and vascular disorders
- use of four or more prescribed medications.

come. If your healthcare facility has a high skin-tear incidence, some people may suspect the facility is not doing everything it can to decrease tears or that its caregivers are too rough when providing direct patient care.

Provide an optimal environment
To minimize skin tears, start by providing a safe environment. Remove scatter rugs and unclutter walkways. Pad bedrails, wheelchairs, and sharp furniture corners. Provide support for the patient's dependent limbs and ensure adequate lighting.

Dress at-risk patients in long sleeves, long pants, and knee-high socks to protect the skin below these garments.

Keep room temperature on the cool side, as heat tends to dry the skin. Elderly patients commonly are sensitive to cold, so this isn't always realistic—but you can add moisture to the air by using a humidifier.

Follow bathing guidelines
Too-frequent bathing dries the skin, making it more vulnerable to tearing. The following recommendations help minimize tears.

- Decrease bathing frequency.
- Advise patients to take shorter showers with warm to tepid (not hot) water to help the skin resist tearing.
- Use pH-balanced cleaning products that contain emollients and don't require rinsing. Know that although a bar of soap is inexpensive and removes soil, it also alters the skin's physical and chemical make-up and makes it more vulnerable to tears.
- Pat the patient's skin dry instead of rubbing it.
- Moisturize the patient's skin after bathing while it's still damp. This traps moisture and keeps skin hydrated. The skin's top layer, the stratum corneum, requires at least 10% moisture to maintain its integrity.
- Encourage proper fluid intake to help patients stay hydrated.

Handle patients gently
Learn about the proper way to touch patients to decrease skin trauma risk. Using a practiced, deliberate, gentle touch makes all the difference.

Also, use low-friction repositioning sheets and equipment to decrease skin trauma caused by repositioning. Avoid wearing jewelry, because it can cause skin trauma, and keep your fingernails short.

Dress patients properly
Patient clothing plays a role in preventing skin tears. Dress at-risk patients in long sleeves, long pants, and knee-high socks to protect the skin below these garments. You can use athletic shin guards as protective devices on patients who are willing to wear them. Specialized products, such as the DermaSaver™ Arm Tube, Dermatuff® Protection Socks and Leg Protectors, and Posey® SkinSleeves™ Protectors, also help safeguard the skin. If the budget is tight, you can use tube socks to protect the patient's arms; just cut off the toe section and slip the socks on over your patient's hands.

Management

Despite all of our efforts, skin tears do occur. How we treat them can make a big difference in our patient's pain level, how quickly tears resolve, and whether complications arise. Although we lack gold-standard or clinical practice guidelines to identify the ideal treatment regimen, many

approaches can work well. Choose the one that best fits your individual patient.

Management goals include:

- stopping the bleeding
- reapproximating the edges of the skin flap to maintain integrity without stretching
- providing moisture and protection for the wound
- protecting periwound skin
- minimizing pain and discomfort
- preventing infection.

Also, if possible, try to determine the cause of the skin tear and remove it to help prevent recurrence.

Methods of treating skin tears include skin glue, skin-closure strips, and dressings. (See *Applying skin-closure strips*.)

Skin glue

A specially formulated liquid topical bandage, skin glue creates a clear film that dries in 15 to 30 seconds. It doesn't require secondary dressings and allows for routine inspection. Examples of skin glues include Dermabond®, Surgiseal®, and Octylseal™.

Dressings

The best standard dressing for a skin tear depends on the type of tear, amount of exudate, skin fragility, and other patient factors. In general, hydrocolloids or traditional transparent film dressings aren't recommended, as they may cause skin stripping and injure the healing tear if not removed properly.

To manage a skin-tear dressing, mark the outer dressing with an arrow to indicate the preferred direction of removal; document this to help prevent disturbing the healing wound. Ideally, this step should be included in your facility's policy and procedures to help ensure it's done every time.

When using a dressing over your patient's skin tear, remember these important points:

- Calcium alginates may help control bleeding and exudate.
- Soft silicone or silicone-impregnated dressings promote flap security and aid nontraumatic removal.
- Foam or hydrofiber dressings aid exudate management.
- Hydrogel dressings promote pain relief and a moist wound bed.
- Petroleum-based protective ointments and gauze also may be used.
- Antimicrobial dressings aid infection control.
- If the wound is infected or contaminated, observe it daily.
- Avoid tape whenever possible, because

Applying skin-closure strips

You can use skin-closure strips to keep the wound edges approximated, which promotes healing by primary intention. Remember—the skin flap needs to stay intact with no signs of infection. (Because of fragile surrounding tissues, staples usually aren't recommended.)

To apply skin-closure strips, follow these steps:

- Clean the wound gently and remove excess blood under the skin flap.
- Gently roll the flap back into place using a moistened applicator, making sure not to stretch it.
- To apply a strip, start in the middle of the wound. Apply half of the first strip to the wound margin; press firmly in place without tension. Using your fingers or forceps, approximate the skin edges as closely as possible.
- Press the other half of the strip firmly on the other side of the wound.
- Close the rest of the wound with additional strips spaced approximately ⅛" (3 mm) apart, until the edges are completely approximated.
- If needed, apply additional strips parallel to the wound, approximately ½" in from the ends. This may reduce stress under the ends, decreasing the risk of skin-tension blisters and premature lifting of the strips.
- To allow the skin flap to "take," don't disturb it for approximately 5 days.
- Know that skin sealants (such as benzoin) aren't required or recommended.
- For added protection, you can cover skin-closure strips with a secondary dressing, such as a foam or silicone nonadherent dressing.

it may tear the skin on removal. To prevent this, use an adhesive remover.
- Alternative ways to secure the dressing include gauze netting, stockinette, cohesive bandages, TubiFast™ bandages, and other specialty products, such as TAPEless™ dressings. Be sure to follow the manufacturer's instructions for proper application to protect patients from harm stemming from circulatory compromise.

Education is key

We need more research on skin tears to improve management. Education is the key to preventing skin tears. All caregivers should be well versed in prevention and management strategies and should teach patients about them. ■

Access an audio education program[C] on skin tears.

Gail R. Hebert is a clinical instructor with the Wound Care Education Institute in Plainfield, Illinois.

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Online Resources

A. goo.gl/AhnLFc

B. goo.gl/SHXG0w

C. skintears.org/Education/

WHEN YOU DON'T KNOW WHAT TO SAY, STAND UP.

When someone you love is diagnosed with cancer, you have the power to help. There are many ways you can stand up and show that you care.

THEY TALK, YOU LISTEN. One of the most helpful and important things you can do is listen—without judgment and resisting the urge to give advice.

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LIVE AND LEARN. Educate yourself about your loved one's diagnosis and treatment. When you understand what a cancer patient is going through, you're better able to help keep information clear, track questions, and know how you can be most useful.

STAY CONNECTED. After the initial diagnosis, people tend to drift away. Be someone to count on for the long haul. Check in, send a quick note, or drop off a book. Small gestures go a long way.

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Immobility as the root cause of pressure ulcers

By Jeri Lundgren, BSN, RN, PHN, CWS, CWCN

Many factors can contribute to the formation of a pressure ulcer, but it's rare that one develops in an active, mobile patient. As the National Pressure Ulcer Advisory Panel 2014 guidelines state, "Pressure ulcers cannot form without loading, or pressure on the tissue. Extended periods of lying or sitting on a particular body part and failure to redistribute the pressure can lead to ischemia and therefore tissue damage." Thus, immobility is frequently the root cause of pressure ulcer development.

As clinicians, we need to assess all patients for immobility and address the source. The goal is to modify, stabilize, or eliminate the cause of the immobility.

> The goal is to modify, stabilize, or eliminate the cause of immobility.

Going beyond the basics

Clinicians typically respond to immobility with interventions designed to minimize the pressure. Interventions might include pressure redistribution products for the bed and wheelchair, elevation of the heels off the bed, and an aggressive turning and repositioning program for the patient.

Although these interventions are appropriate and consistent with standards of practice, we must take the next step by ensuring our patients are moving as much as possible. We need to consult with occupational and physical therapists and tap into restorative nursing programs to help keep patients more active. Strategies include an exercise program that promotes strengthening, balance, stability, and endurance through such activities as lifting weights, tai chi, agility courses, pre-Pilates, boxing, walking, and kayaking.

Here are some tips for encouraging mobility.

Have patience.
Allow patients to do tasks for themselves, even if the task takes time. Even the simplest task such as brushing teeth gets the patient moving.

Monitor wheelchair use.
Encourage patients who can walk to use a wheelchair only when absolutely necessary. For those who are wheelchair bound, encourage them to propel themselves as much as possible.

Create a mobile-friendly environment.
An environment that provides safety for mobile patients includes uncluttered hallways; handrails;

adequate lighting; nonslip, nonglare flooring that is even; and contrasting colors from floor to walls to highlight depth.

Use equipment as needed to promote mobility.

Grab bars on the bed help promote movement in the bed as well as safe egress and transfers. Keep the height of the bed at the point where the patient's feet can touch the floor when he or she is sitting on the side of the bed and the bend at the knee is just slightly higher than 90 degrees. Use sit-to-stand or ceiling lifts to promote mobility. And remember the basics, such as properly fitted walkers and canes, grab bars in the bathroom, and an appropriate toilet seat height.

Keep patients active during the day.

Plan activity programs throughout the day. Limit napping to once a day for no more than 20 to 30 minutes.

Promote adequate sleep at night.

Limit noise at night. Use amber lighting in the evening and throughout the night to stimulate melatonin production. Implement interventions, such as pressure redistribution mattress, overnight incontinence products, and heel-lift devices, to prevent pressure ulcers, which can interrupt sleep.

Ensure appropriate footwear at all times.

Be sure socks and shoes fit properly. Socks shouldn't be too tight or too loose, which could lead to slipping and subsequent friction, causing skin injury. Ensure that shoe soles aren't slippery. If the patient shuffles when he or she walks, soles need to accommodate this characteristic without excessive slipperiness.

Encourage facility staff and family members to participate.

Encourage staff and family members to participate in the exercise programs, so everyone benefits.

Going the distance

By keeping patients mobile, we can help reduce the risk of pressure ulcer formation and help our patients achieve better outcomes.

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Jeri Lundgren is president of Senior Providers Resource, LLC, in Cape Coral, Florida. She has been specializing in wound prevention and management since 1990.

Pros and cons of hydrocolloid dressings for diabetic foot ulcers

These occlusive dressings promote a moist healing environment but may increase infection risk.

By Kristine Hoffman, DPM, FACFAS

Diabetic foot ulcers stem from multiple factors, including peripheral neuropathy, high plantar pressures, decreased vascularity, and impaired wound healing. Contributing significantly to morbidity, they may cause limb loss and death. (See *Foot ulcers and diabetes*.)

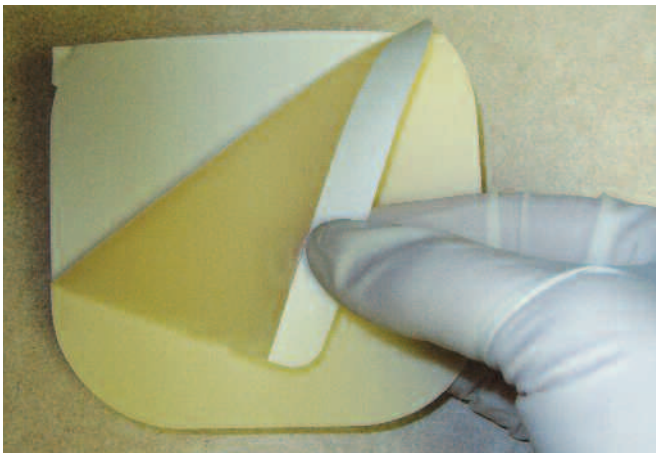
Initially, hydrocolloid dressings were developed to function as part of the stomal flange. Based on their success in protecting peristomal skin, they were introduced gradually into other areas of wound care. They contain wafers of gel-forming polymers, such as gelatin, pectin, and cellulose agents, within a flexible water-resistant outer layer. The wafers absorb wound exudate, forming a gel and creating a moist healing environment.

The wide range of hydrocolloid dressings available include fibrous and matrix dressings. Commercially available products include DuoDerm®, Granuflex®, Comfeel®, Cutimed® Hydro, and CovaWound™.

View: hydrocolloid dressings[A]

Benefits

Hydrocolloid dressings are occlusive, retaining wound exudate and promoting the moist environment that's optimal for wound healing. They also promote autolytic wound debridement, removing



necrotic tissue—a barrier to wound healing—from the wound bed. Wet or moist wound environments promote re-epithelialization, reduce inflammatory reactions, and decrease scar formation. Hydrocolloid dressings also aid wound healing by retaining growth factors in the exudate, promoting granulation tissue formation and epithelialization.

Although these dressings are contraindicated for patients with infected ulcers, they're useful in preventing wound infection, serving as a barrier that prevents bacterial entry into diabetic foot ulcers. In addition, they promote a low pH, which reduces or even eradicates certain bacteria (namely *Pseudomonas aeruginosa*) from the wound bed.

Hydrocolloid dressings are self-adherent and easy to apply. The second most popular dressing for diabetic foot ulcers, they can be left intact up to 7 days, depending

on the amount of wound exudate. The need for less frequent dressing changes can reduce disruption of healing, improve patient compliance, and decrease cost.

Disadvantages

Controversy exists over the use of hydrocolloid dressings for treating diabetic foot ulcers. Many wound care experts suspect they may increase the infection risk because they retain bacteria and purulent wound exudate, create a hypoxic wound environment, and lead to less frequent wound monitoring. Given these concerns, hydrocolloid dressings are contraindicated for infected wounds.

Use these dressing with care in diabetic patients. Make sure to obtain bacterial cultures before starting treatment, and change the dressing more often than in patients without diabetes.

Also, because they're occlusive, hydrocolloid dressings may lead to an overly moist wound environment, with excess moisture causing dressing separation and periwound maceration. Experts recommend using them only for wounds with low to moderate amounts of wound exudate.

In addition, the hypoxic environment created by these dressings may delay and impede wound healing and raise the infection risk. Leukocytes phagocytize bacteria but can't kill them in hypoxic environments because of the low oxygen tension; this significantly increases infection risk. Collagen maturation, endothelium development, keratinocyte migration, and granulation tissue formation depend on oxygen and may be inhibited by hypoxic wound bed conditions. (See *Patient compliance factors*.)

More research needed

Although many studies show hydrocolloid dressings are effective in treating diabetic foot ulcers, a 2012 systematic review by Dumville et al. found no evidence that they're more effective than basic wound contact dressings. Also, according to a 2013 review of randomized controlled trials, hydrocolloid dressings aren't more effective than basic wound contact dressings, foam dressings, alginate dressings, and topical treatments in managing diabetic foot ulcers. However, these studies produced sparse data and included research with risk of bias.

Consequently, proper patient selection is crucial. We need further research to evaluate the safety and effectiveness of hydrocolloid dressings for diabetic foot ulcers and to establish further guidelines for their use. ■

Foot ulcers and diabetes

Patients with diabetes have a 15% to 20% lifetime risk of developing foot ulcers. More than 15% of these ulcers necessitate limb amputation. Diabetes is the leading cause of nontraumatic lower extremity amputations, with most amputations preceded by nonhealing ulcers.

Treatment of diabetic foot ulcers requires a multidisciplinary team approach, including endocrinologists, vascular surgeons, infectious disease specialists, wound care clinicians, and podiatrists. This approach has been shown to improve clinical outcomes and reduce the need for lower extremity amputation.

Patient compliance factors

Patient compliance may be a problem with hydrocolloid dressings. Chronic wounds commonly have an offensive odor, which hydrocolloid and other occlusive dressings may worsen by trapping and containing malodorous exudate and odor molecules. However, cyclodextrin, an oligosaccharide that absorbs adventitious odors, has been added to hydrocolloid products to provide fluid and odor absorbency.

Patients also may have concerns about cost. Hydrocolloid dressings are significantly more expensive than traditional wound dressings, such as wet-to-dry gauze. On the other hand, they require fewer dressing changes, fewer supplies, and less professional time. Also, they cost about the same as advanced wound healing modalities, such as negative pressure wound therapy.

Kristine Hoffman practices podiatry at the Boulder Valley Foot and Ankle Clinic in Boulder, Colorado.

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Online Resource

A. https://www.youtube.com/watch?v=xh3I4eM5rZY

Preventing pressure ulcers in pediatric patients

At one hospital, a multidisciplinary pressure-ulcer prevention program has reduced incidence by two-thirds.

By Roxana Reyna, BSN, RNC-NIC, WCC, CWOCN

As wound care clinicians, we are trained—and expected—to help heal wounds in patients of any age and to achieve positive outcomes. Basic wound-healing principles apply to all patients, whatever their age or size. The specific anatomy and physiology of vulnerable pediatric patients, however, requires detailed wound care. Unfortunately, little evidence-based research exists to support and direct the care of pediatric patients with pressure ulcers. This article describes efforts to reduce pressure ulcers in pediatric patients at Driscoll Children's Hospital (DCH) in Corpus Christi, Texas.

Making a change

DCH began tracking pressure-ulcer incidence and prevalence in 2010. Data collected by the hospital's pressure-ulcer prevention specialists showed a high rate of pressure ulcers in the neonatal and pediatric intensive care units. At that time, the hospital lacked a specific pressure-ulcer prevention plan. When it joined the National Database of Nursing Quality Indicators®, leaders decided to create a time-specific measurable goal—to decrease pressure ulcers by 50% within 18 months of implementing a prevention program.

DCH recruited me as their skin-care and wound-prevention specialist to assist the wound care collaborative team in creating the prevention program. The core of the program is a multidisciplinary team approach. Team members include a nursing administrator, physician, certified wound ostomy nurse, wound-care certified nurses, nurse educators, skin-care champions, physical therapist, occupational therapist, dietitian, and representatives of the materials management, environmental services, and case management departments. Called the SKIN team (short for "Saving Kids' Integument Now"), its motto is "Prevention is critical." The team involves the patient's family member or guardian in developing and implementing the plan of care. The pressure-ulcer prevention program includes a bundle of components that have reduced pressure ulcers in adult populations, along with recommendations from the pediatric sec-

Assessing risk in pediatric patients

To evaluate pressure-ulcer risk in pediatric patients, guidelines from the National Pressure Ulcer Advisory Panel (NPUAP) recommend clinicians perform an age-appropriate assessment that includes:

- activity and mobility levels
- body mass index, birth weight, or both
- skin maturity
- ambient temperature and humidity
- nutritional indicators
- perfusion and oxygenation
- presence of an external device
- duration of hospital stay.

NPUAP also recommends assessing the patient's skin at least daily and after procedures for changes related to pressure, friction, shear, and moisture. Be sure to examine the skin under and around medical devices at least twice daily for signs of pressure injury.

tions of the 2014 guidelines of the National Pressure Ulcer Advisory Panel (NPUAP).

Assessment

As in adults, many factors contribute to skin breakdown and pressure ulcers in pediatric patients—duration and amount of pressure, friction, shear, moisture, perfusion, malnutrition, infection, anemia, and immobility. The 2014 NPUAP guidelines describe risk factors to assess for in pediatric patients. (See *Assessing risk in pediatric patients*.)

Management

The DCH pressure-ulcer prevention program addresses physician, staff nurse, and nurse-technician education; skin-care regimen; nutritional optimization; appropriate support surfaces and patient repositioning; moisture management; and guidelines for implementing care.

Education

Pressure-ulcer prevention education is a mandatory yearly competency for all nursing and clinical staff. Physicians also receive education on pressure-ulcer staging and proper documentation and coding of pressure ulcers. Quarterly skin-care fairs teach staff about skin- and wound-care products used at DCH, including product selection. Staff can view demonstrations on how to apply these products and learn how to document skin care in the electronic health record. Also, they can get troubleshooting tips on stoma care, gastrostomy-tube sites, and diaper care. Home health agencies are invited to attend the fairs as part of an outreach to promote continuity of care.

Skin-care regimen

DCH has standardized its skin-care line for use with patients ranging from the smallest, most fragile neonates in the neonatal intensive care unit to young adults. Product evaluation on our neonatal patients found no adverse reactions over thousands of applications. The skin-care products we use are made for sensitive skin and contain natural oils and botanicals that provide cleansing, nourishment, and moisture.

Optimizing nutrition

Patients at risk for pressure ulcers require adequate nutrition and hydration; the plan of care must address these needs. Nutritional supplements, including parenteral and enteral supplements, are used as needed to meet children's nutritional goals.

Appropriate support surfaces

As part of our pressure-ulcer prevention program, we assessed all mattresses and surfaces in warmers, isolettes, cribs, bassinettes, and standard hospital beds. We found the mattresses in our pediatric intensive care unit (PICU) were years older than manufacturers' recommendations.

In light of the limited sizes available and minimal literature on neonatal and pediatric support surfaces, we asked a

company to make prototypes for neonate and infant surfaces. Before finalizing our purchase decision, we conducted a small study to evaluate the pressure redistribution of support surfaces and outcomes by performing pressure mapping on multiple pressure-redistribution surfaces—standard foam, high-resiliency multilayered pressure redistribution foam, and viscoelastic multilayered pressure-redistribution foam. To determine the effectiveness of each surface, we used pressure mapping with an X3 sensor. A comparison of average pressures (mm Hg) found viscoelastic multilayered surfaces provided the greatest pressure redistribution and had lower average interface pressures.

Based on these results, we chose a true pressure-redistribution mattress for our special populations. All PICU mattresses have been upgraded to a non-powered pressure-redistribution mattress replacement system with self-adjusting technology. Remaining standard beds have been converted to an innovative mattress replacement system. Although the mattresses are made from the best performance materials, repositioning patients every 2 hours and as needed remains an important nursing intervention in preventing pressure ulcers.

Moisture management

DCH replaced cloth pads with disposable underpads manufactured with a new technology that keeps the patient dry by wicking away moisture. Barrier creams are used for the diaper area to help protect skin integrity.

Getting results

Data show that since DCH implemented its pressure-ulcer prevention program, our pressure-ulcer incidence has fallen 66%. These results show pressure ulcers can be prevented by identifying patients at risk and implementing appropriate prevention strategies. At DCH, our ultimate goal is zero hospital-acquired pressure ulcers.

Patients at risk for pressure ulcers require adequate nutrition and hydration.

Roxana Reyna is a skin and wound care specialist at Driscoll Children's Hospital in Corpus Christi, Texas.

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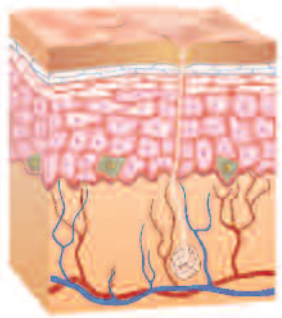
Clinician RESOURCES

Here is a round-up of resources that you may find helpful in your practice.



New illustrations for pressure-injury staging

The National Pressure Ulcer Advisory Panel (NPUAP) has released **new illustrations of pressure injury stages**[A]. You can download the illustrations, which include normal Caucasian and non-Caucasian skin illustrations for reference.

There is no charge for the illustrations as long as they are being used for educational purposes, but donations to support the work of NPUAP are appreciated.

Ostomy self-advocacy resource

Download the most recent version of the **ostomy self-advocacy checklist**[B] from the United Ostomy Associations of America. This resource for patients with new ostomies details action steps and provides valuable information. The checklist can be customized with the name and contact information for the local ostomy support group.

Lymphedema webinars

Ready to boost your knowledge about lymphedema? Consider watching a free, on-demand webinar from the Lymphatic Education & Research Network's **symposium series**[C].

Sample topics include:

- current and emerging surgical approaches in lymphedema
- an overview of normal lymphatic anatomy and ultrastructure
- genetics and lymphedema.

Delirium resource

Patients with delirium present many challenges for clinicians. You can get help at a special section of the American Nurses Association's website dedicated to the topic. **The section**[D] includes:

- statistics about delirium
- links to many resources for clinicians and families
- delirium primer for nurses. ■

Online Resources

A. npuap.org/resources/educational-and-clinical-resources/pressure-injury-staging-illustrations/

B. ostomy.org/uploaded/files/ostomy_info/Ostomy_Self_Advocacy_Checklist.pdf?direct=1

C. lymphaticnetwork.org/symposium-series

D. nursingworld.org/Delirium-Prevent-Identify-Treat

Note from Executive Director

By Cindy Broadus, RN, BSHA, LNHA, CLNC, CLNI, CHCRM, WCC, DWC, OMS

National Alliance of Wound Care and Ostomy®

Here we are again. As I write this, it's already been a year since the 2015 Wild On Wounds (WOW) conference. As I look back over the past year, I'm excited about the growth and changes that have taken place at NAWCO. Since the inception of the WCC credential in 2002, we have certified more than 20,000 clinicians. What a phenomenal accomplishment. I write that number with a big smile on my face, not because our numbers are so large, but because of what that number signifies. It means that there are more than 19,000 more educated, knowledgeable clinicians taking care of a unique and complex group of patients who do not always experience the easiest path to recovery or healing.

To better oneself through education takes determination and dedication. To make a difference isn't as difficult as many may think. Each year at WOW, we recognize individuals who have set themselves apart from their peers by going above and beyond. These clinicians are nominated by the people they work with side by side, day after day. When we notify the award winners, some are surprised by the glowing comments that had been submitted about their involvement in education, in the community, and in improving the lives of their patients. The commitment to the provision of excellent care is the first and foremost intent of these clinicians. I found a quote that suits them: Auliq Ice once said, "Naturally have a belief that you can make a difference and you will make it unknowingly."

That is exactly what these clinicians have done. By doing what they do best and striving to better themselves, the care they provide, and the knowledge they share, they have unknowingly made a difference not only in the lives of their patients, but also in the lives of family members, colleagues, and employers.

I'm pleased to have the opportunity to recognize the 2016 award winners. They are excited to be attending WOW, where they will receive their award and earned recognition during the Pay it Forward Session. At this session, which has become a tradition at the conference, we recognize the contributions our certified clinicians have made in the field of wound care. These clinicians have the opportunity to share the differences they are making in others' lives each and every day. We always close the conference with the message about the impact we make when we pay it forward.

With statements from those who nominated the winners including "goes the extra mile," "never gives up," "puts the patient first and is a staunch patient advocate," "mentors others so they too can feel as comfortable at the bedside," "loves being a wound care nurse," and "volunteers endless hours to the local wound clinic," it's clear why these individuals were chosen.

Outstanding WCC® of the Year
Jessica Mayfield, RN-BC, WCC

Outstanding Work in Diabetic Wounds
Katherine Broze, BA, RN, WCC, DWC, CFCN

Outstanding Research in Wound Care
Carol Johnson McGregor, ARNP, MSN, MBA, EdD, WCC

Outstanding Work in Ostomy Management
Zoe White, RN, WCC, OMS

I would like to personally thank our readers, including members and those who are (or aren't) certified, for all the work you do with wound care patients across the country. Never think for one moment that your patients and their families don't appreciate what you do. I'd like to leave you with one last thought:

"Go the extra mile…it's never crowded."
— Unknown.

New certificants

Below are WCC, DWC, and OMS certificants who were certified from June to July 2016.

Alane Ahlers
Alecia Harris
Alfredo Salcedo
Allison Phillips
Allison Fauver
Amanda Smith
Amanda Carter
Amber Miller
Amber Garner
Amy Pavelchak
Amy Nichols
Andrea Stevens
Angela Plumbo
Anita Butler
Anne McBride
Ashley Santopietro
Ashley Harvey
Barbara Jackson
Bella Fe Ambubuyog
Brenda Lucas
Brenda Lawson
Carla Chitwood
Carol Hamlin
Carolyn Stacy
Carri Rejonis
Cassandra Przepiora
Catherine Sheahan
Cathy Laubenthal
Centra Meyer
Chelsea Carter
Christina Starnino
Christopher Baranyk
Claudette Nelson
Consuelo Fuentes
Cynthia Douglas
Cynthia Levering
Dana Almonrode
Davette Bowden
Dean Abustan
Debbie Burnside
Deborah Myette
Deborah Dunning
Deborah Finch
Deborah Young
Deborah Vasel
Deborah Diana
Denise Haynes
Dominique Azarcon
Donna Patrick
Elizabeth Treaster
Emily Harvey
Emily Stewart
Faisal Ijaz
Fatou Kebe
Gary Tennant
Hayley Marks
Heidi Gordon
Holly Turbak
Ikeoluwapo Agboola
Jacqueline Hall
James Martin
James Gray II
Jamie Shatto
Jean Campbell
Jeffrey Keddie
Jennifer Graber
Jennifer Osborn
Jennifer Ulma
Jennifer Cauchi
Jennifer Barga
Jennifer Mason
Jennifer Ryals
Jennifer Harris
Jessica Chase
Jessica Garver
Jessica Braithwaite
Jill Strickland
Jillian Hart
Jimmy Ramirez
Jodi Clark
Jody Liggett
Johnny Johnson, DO
Joni Brinker
Joseph Brenes
Judith Numon
Judith Flanagan
Juliana Linderman
Kaitlin Swanger
Karen Fowler
Karen Fricke
Katherine Belk
Katherine Elrod
Kathryn Hudson
Kathy Hildebrecht
Katie Giunta
Kelly Carrigan
Kelly Toporek
Kelly Koch
Kenyatta Roundy
Kim McDaniel
Kristin Harper
Kristin Ellington
Kristina Richmond
Larry Lawrence
Latisha Pappas
Linda Pitts
Lindsey Wilkes

Lori Colvin
Lori Limchayseng
Lori Patterson
Lori Evans
Lucille Gariepy
Lynette Rennecker
Lynn Haga
Lynne Soto
Mandi Dangler
Marcia Tucker
Margaret Eberl
Maria Carozza
Maria Sayson-Soroten
Maricon Abello
Marisa Medina
Martha Pimentel
Marti DeGange
Mary Fabian
Mary Whipple
Mary Long
Mary Nhar-DaSilva
Mary-Lou Jackson
Mayelangela Linares-Norwood
Megan Eakins
Melissa Rollenhagen
Melissa Molnar
Melissa Gambini
Melissa Martin
Melissa Yeamans
Melodee Curry
Meredith Thompson
Michelle Green
Michelle Stewart
Michelle Cashen
Michelle Stayner
Miriam Nganga
Nichole Pierce
Nicole Borger
Nicole Dappert
Nicole Currier
Nina Mills
Ottamissiah Moore
Patricia Monty
Patrick Shannon
Paul Peters
Paula Dugdale
Phillip Naylor
Phillip Kemmler
Phyllis Abrahamson
Randi Peters
Rebecca Burdick
Rebecca Barlow
Rebecca White
Rebecca Engleka
Renee Browder
Robert Brenes
Sandra Alua
Sarah Lanoue
Sarah Higley
Scarlett Virden
Scott Sabourin
Sean Olumstad
Shannon Rodorigo
Shannon Carani
Sharon O'Neil-Doyle
Sherry Hamman
Sonja Alexander
Stephanie Majewski
Suzanne Fain
Theresa Flowerette
Theresa Szparagowski
Therese Gamble
Tracy Rhone
Tracy Vorshak
Trevor Moreland
Valentyna Oleksyuk
Vickie Blevins
Virginia Andriola
Wendy Lynch
Wendy Miles
Widline Hilaire
William Tillery
Yolanda Jefferson
Zenna Clarke

Recertified certificants

Below are WCC, DWC, and OMS certificants who were recertified from June to July 2016.

Alice Bergfalk Gunter
Alicia Carroll
Amy Davis
Andrea Farley
Angela Bagg
Ann Marie Santoyo
April Ostovich
Barbara Gember
Beverly Hunt
Brenda Shelden
Brenda Cunnien
Calvin Dull
Cammie McDaniel
Catherine Perez
Cecilia Haston
Celeste Hudson
Chanathip Mason
Charles Blake
Cheryl Krause
Cheryl Ajax
Cheryl Ross
Christa Brown
Claudia Alexander
Cristian Arcilla
David Sam Tavera
Donna Spencer
Elisan Fitch
Elizabeth Zito
Elizabeth Denton
Elizabeth Cusano
Fely Pula
Gayle Nourse
George Arguilla
Georgina Cabrera
Irene Sours
Janet Morgan
Jean Brown
Jeanne Ozinga
Jennifer Hulsey
Jennifer Cordray
Jennifer Corbett
Jessi Geisbauer
Jewel Chase
Joan Farinacci
Karen Miller
Kathleen Jordan
Katrina Green
Kim Cygan
Kimberly Whitener
Kimberly Holland
Kimberly Harris
Kristin Abernathy
Kristina Garza
Lacy Genovese
Laura Dedig
Laura Chauvin
Lauren Barnett
Lauren Jacobs
Lawrence Higoy
Linda Myers-Kalb
Linda Blakesley
Marguerite Donius
Maria Gaines-Onwukwe
Maria Jacenko
Maricel Gonzalez
Marie Sainte
Marne Sterzing
Martin Centeno
Mary Bussey
Mary Harjes
Megan Mustachio
Melissa Hill

Micaella Kim
Michele Verbrugge
Michelle Sheehan
Molly Larson
Mona Buffum
Nanette Jamora
Pamela Hovatter
Rachael Dipardo
Rachel Pitot
Rebecca Stempien
Rhonda McCoy
Robin Bennett
Robyn Montgomery
Sandra Axelrod
Shannon Rosinski
Shelly Samples
Shelly Ford
Sheri Nichols
Sigita Skauda
Susan Brown Goebeler
Susan Tower, MD
Susan Baze
Susan Wood
Tamara Kerby
Tammie Mason
Teresa Hudec
Theresa Szczygiel
Theresa Hart
Theresa Bennett
Tia Hudon
Tonya Presswood-Grady
Vernell Green
Vickie Denisi
Victoria Harmelink
Yuriy Mirochnik

Consider writing an article

Wound Care Advisor invites you to consider submitting articles for publication in the new voice for wound, skin, and ostomy management specialists.

As the official journal of WCC®s, DWC®s, OMSs, and LLE℠s, the journal is dedicated to delivering succinct insights and pertinent, up-to-date information that multidisciplinary wound team members can immediately apply in their practice and use to advance their professional growth.

We are currently seeking submissions for these departments:

- ***Best Practices*, which includes case studies, clinical tips from wound care specialists, and other resources for clinical practice**
- ***Business Consult*, which is designed to help wound care specialists manage their careers and stay current in relevant healthcare issues that affect skin and wound care.**

If you're considering writing for us, please click here to review our author guidelines. The guidelines will help you identify an appropriate topic and learn how to prepare and submit your manuscript. Following these guidelines will increase the chance that we'll accept your manuscript for publication.

If you haven't written before, please consider doing so now. Our editorial team will be happy to work with you to develop your article so that your colleagues can benefit from your experience.

For more information, click here to send an email to the managing editor.

EXHIBITORS GUIDE

NATIONAL WOUND CONFERENCE

Rio Hotel, Las Vegas, Nevada
August 31 – September 3

www.WoundSeminar.com

Presented By

WOUND CARE EDUCATION INSTITUTE®

2016 WILD ON WOUNDS EXHIBITORS GUIDE

Wild on Wounds WELCOME

Dear Colleagues,

We're thrilled to have you at this year's WILD ON WOUNDS℠ (WOW) National Conference!

Being wound care clinicians ourselves, we understand the unique challenges that you face, especially when reimbursement policies require you to provide quality care with fewer resources.

The WOW conference is designed to provide you with information on current standards of care, new prevention and treatment ideas, and tools that you can use to spread your knowledge.

One component of being current with wound care is your familiarity with new technologies and devices that prevent wounds or heal wounds faster. Our industry experts are here to provide you with hands-on training and education about their products so you can make a measurable impact on wound outcomes.

Wound Care Advisor created this useful Exhibitors Guide for you to carry with you during exhibit times. We also suggest that you keep it as a resource tool for future reference.

We hope you enjoy this Exhibitors Guide, and we'll see you at the Exhibitors' Showcase!

Nancy Morgan & Donna Sardina
Wound Care Education Institute

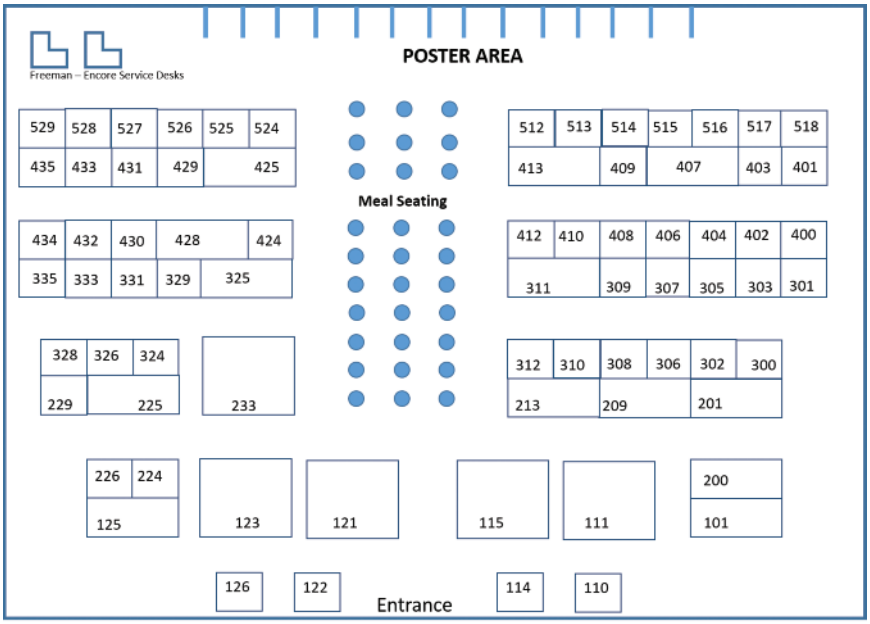
Wild on Wounds
2016 EXHIBITORS

Meet with exhibitors, participate in hands-on labs, and learn about new wound products and enter to win a great prize!

Exhibit hall is located in the Amazon ballroom of the Rio Hotel.

Exhibit hours:
Thursday, Sept. 1
11:30 am to 2:00 pm

Friday, Sept. 2
11:30 am to 2:00 pm



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A Fashion Hayvin, Inc.

AFH is a marketing company that promotes jewelry in over 50 conventions annually. We cater to today's modern, working professional.
conventionjewelry.com
See us at booth 1

Abbott Nutrition

3300 Stelzer Rd
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At Abbott, we understand that proper nutrition is foundational for living the best and fullest lives possible. Whether it's the tiniest of babies or older adults, we work to deliver nutrition products that support health and vitality.
AbbottNutrition.com or call: 614.624.7677.
See us at booth 409

Accelerated Wound Solutions

781 Hillcrest Drive
Basalt, CO 81621
Accelerated Wound Solutions provides negative pressure wound therapy (NPWT) products from Equinox Medical. Visit us to learn more about Cobaltt NPWT and our outpatient services.
acceleratedwoundsolutions.com or call: 800-974-5085.
See us at booth 125

KCI
An Acelity Company

Acelity (KCI, LifeCell)

12930 IH 10 West
San Antonio, TX 78249
KCI is a leading global medical technology company devoted to changing the practice of medicine with solutions that speed healing, reduce complications and improve patient lives. KCI is headquartered in San Antonio, Texas. The V.A.C.Ulta™ Therapy System is an integrated wound therapy system that provides NPWT with an instillation option.
acelity.com or call: 800.275.4524.
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Adele Marketing Inc

Washington, DC
Our company offers discreet tailor made solutions for our clients to maximize their sales productivity while using existing resources. Whether you are currently new to the events industry, want to improve the quality of your current event bookings, or maybe you just have lots of experience, but want to focus on sales, we provide custom made outsourcing solutions for all scenarios.
unoeventconsultants@gmail.com or call: 718-305-7941.
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Advanced Tissue

7003 Valley Ranch Drive
Little Rock, AR 72223
Advanced Tissue is a national company with a singular focus of helping carry out wound treatment plans through the delivery of wound care supplies in unit dose packaging to patient's homes and residents of long term care facilities.
AdvancedTissue.com or call: 866-217-9900.
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Amerx Health Care

1300 S. Highland Ave.
Clearwater, FL 33756
NEW! ADVANCED DRESSING OPTIONS available from AMERX HEALTH CARE! Explore the new AMERX® Wound Care Kits & Dressings. Take advantage of Show Specials on AMERX®, HELIX3® & AMERIGEL® products!
amerxhc.com or call: 800-448-9599.
See us at booth 329

ANACAPA® TECHNOLOGIES

Anacapa Technologies, Inc.

301 E. Arrow Hwy, Suite 106
San Dimas, CA 91773
Anacapa is a veteran-owned, federally-certified small business engaged in the development, manufacturing and marketing of patented broad-spectrum topical antimicrobials; Anasept® Antimicrobial Skin and Wound Cleanser and Gel and SilverSept® Silver Antimicrobial Skin and Wound Gel.
Visit: **ancapa-tech.net** or call: 909-394-7795.
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Andover Healthcare, Inc.

9 Fanaras Drive
Salisbury, MA 01952
Andover Healthcare is a leading manufacturer of cohesive bandages, committed to innovative technology. CoFlex TLC–2 Layer Compression is available in a variety of options; Standard, Lite, XL, Calamine or Zinc.
andoverhealthcare.com or call: 800-432-6686.
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ANGELINI

Angelini Pharma Inc.

8322 Helgerman Court
Gaithersburg, MD 20877
Angelini Pharma supports the medical community through education and innovative skin cleansers, disinfectants, hand sanitizers and medical devices. Our core products are electrolytically-produced sodium hypochlorite-based solutions and a 100% pure native equine type I collagen wound dressing for hard-to-heal wounds.
Angelini-us.com or call: 800-726-2308.
See us at booth 229

Argentum Medical, LLC (Silverlon)

2571 Kaneville Court
Geneva, IL 60134
silverlon.com or call: 888-551-0188.
See us at booth 225

B Braun Medical

824 12th Avenue
Bethlehem, PA 18017
B. Braun is a leading manufacturer of infusion therapy and chronic care products with an environmental & personal focus. B. Braun's Wound Care products are designed to be cost effective, and easy to use for clinicians and patients.
bbraunusa.com/prontosanwoundcare.html or call: 610-691-5400.
See us at booth 430

Boemba by The Buddyguard Corporation

8800 Newcastle Ave.
Northridge, CA 91325
This product, which is ergonomically designed, assists caregivers in the repositioning and ambulation of patients. Boemba allows for free movement and the feeling of independence by the patient while at the same time securing and preventing the growth of bed sores and pressure ulcers.
thebuddyguard.net or call: 818-987-4700.
See us at booth 518

Bridan Healthcare

695 Main Street, Building B
Lumberton, NJ 08048
Bridan Healthcare provides both continence and wound management services in long-term care, assisted living, and independent (including in-home) facilities. Continence and wound management has the potential to dramatically improve the quality of life for those patients and their caregivers who are impacted by incontinence and/or alterations in skin integrity.
bridanhc.com or call: 856-638-5658
See us at booth 303

BSN Medical

5825 Carnegie Blvd
Charlotte, NC 28209
BSN medical, a global medical device manufacturer of JOBST® Compression Therapy and Cutimed® wound management products, provides solutions for the treatment and management of venous leg ulcers, diabetic foot ulcers, chronic wounds, CVD and lymphatic disease.
bsnmedical.us or call: 704.554.9933.
See us at booth 406

Calmoseptine, Inc.

16602 Burke Lane
Huntington Beach, CA 92647
calmoseptine.com or call: 714-840-3405.
See us at booth 529

Coloplast

1601 West River Road
Minneapolis, MN 55411
Coloplast develops products and services that make life easier for people with very personal and private medical conditions. Our business includes ostomy care, urology, continence care, and wound & skin care.
coloplast.us or call: 800-533-0464.
See us at booth 432

Crawford Healthcare

2005 South Easton Rd. Suite 203
Doylestown, PA, 18901
Crawford Healthcare is a rapidly growing international company dedicated to developing innovative wound and skin treatments that advance clinical practice while being gentle on budgets.
crawfordhealthcare.com/us or call: 855-522-2211.
See us at booth 525

Darco International, Inc.

810 Memorial Blvd.
Huntington, WV 25701
Darco is a world leader in the manufacture and distribution of post operative and offloading footwear.
darcointernational.com or call: 800-999-8866.
See us at booth 309

Derma Sciences, Inc.

214 Carnegie Center, Suite 300
Princeton, NJ 08540
Derma Sciences, a tissue regeneration company focused on advanced wound care, is commited to clinicians' needs throughout the continuum of care. Our full portfolio of products include TCC-EZ®, AMNIOEXCEL®, AMNIOMAT
Dermasciences.com or call: 800-825-4325.
See us at booth 400

DermaRite Industries LLC

7777 West Side Avenue
North Bergen, NJ 07047
DermaRite supports "Healing in DEPTH" through a full line of skin & wound care products, nutritional supplements, clinical tools, education and a new interactive dressing guide app. Healing in DEPTH: DermaRite Educate-Prevent-Treat-Heal.
dermarite.com or call: 800-337-6296.
See us at booth 101

DeRoyal®

200 DeBusk Lane
Powell, TN 37849
DeRoyal's Wound Care product line features proprietary wound care technologies that can help heal even the most difficult wounds. Our products provide you with advanced, easy-to-use, affordable solutions for all phases of acute, chronic, and burn wound care.
deroyal.com or call: 800-DEROYAL.
See us at booth 428

DM Systems Inc

1316 Sherman Ave.
Evanston, IL 60201
Combining unmatched clinical evidence with the comfort, convenience and variety that todays' healthcare marketplace demands, Heelift offloading boots prevent and treat heel pressure ulcers like no other. Joining the Heelift lineup this year is the new Heelift Glide Ultra and Heelift AFO Ultra, which have a new Ultra-Grip inner lining that provides our most comfortable boot ever while maintaining clinical superiority.
heelift.com or call:
800-254-5438.
See us at booth 122

DUKAL Corporation

2 Fleetwood Court
Ronkonkoma, NY 11779
The DUKAL woundcare platform provides new, unique, and innovative products to healthcare clinicians and a wide breadth of products for all stages of wound healing. Contact your DUKAL sales representative or visit our website, **dukal.com** or call:
800-243-0741.
See us at booth 123

EHOB

250 N. Belmont Ave.
Indianapolis, IN 46222
ehob.com or call:
800-899-5553.
See us at booth 331

Encompass Home Health & Hospice

6688 N. Central Expy, St. 1200
Dallas, TX 75206
We're Hiring RN's! Now seeking Full Time, Part Time and PRN Registered Nurses.We offer a generous benefits package which includes: 30 days paid vacation, Health & Dental Insurance, Continuing Education, Flexible Scheduling and much more!
ehhi.com/careers or call:
208-705-2397.
See us at booth 401

E-Z Graph

6931 Woodway Dr.
Waco, Texas 76712
The E-Z Wound Assessment System has been used to assess patients with ostomies, skin irritations, and chronic or draining wounds related to incontinence, immobility, radiation, traumatic injuries, surgery, diabetes, or burns.
e-zgraph.com/ or call:
800 975-9528.
See us at booth 402

Ferris Mfg. Corp. (Polymem)

5133 Northeast Parkway
Fort Worth, TX 76106-1822
PolyMem drug-free dressings help reduce swelling, bruising and pain in open and closed wounds. PolyMem helps localize the inflammatory reaction to the zone of injury, reducing the spread into surrounding tissues.
polymem.com or call:
800-765-9636.
See us at booth 126

Fortis Medical Products, Inc.

10216 Werch Dr., Suite 110
Woodridge, IL 60517
Our product line includes advanced wound care dressings, ostomy appliances and negative pressure wound therapy kits. We work exclusively through our distributor partners to ensure innovative and reliable product with unparalleled logistics.
fortismp.com or call:
855-550-2600.
See us at booth 516

Healogics, Inc.

5220 Belfort Rd., Suite 300
Jacksonville, FL 32256
Operating through various partnership models, Healogics provides a comprehensive wound care solution by building and leading integrated wound care communities spanning inpatient, outpatient and post-acute care venues.
www.healogics.com or call:
800-379-9774.
See us at booth 413

Hill-Rom

Hill-Rom

1069 State Route 46 East
Batesville, IN 47006
Hill-Rom is a leading worldwide manufacturer and provider of medical technologies and related services for the health care industry, including patient support systems, safe mobility and handling solutions, non-invasive therapeutic products for a variety of acute and chronic medical conditions, medical equipment rentals, surgical products and information technology solutions. Through our unique combination of people, process and technology, Hill-Rom can help you achieve positive safe skin outcomes for you and your patients in hospitals, long-term care facilities and in the home.
hill-rom.com or call:
(812) 934-7777.
See us at the show – booth 111

HOMELINK

1111 West San Marnan Drive
Waterloo, IA 50701
Homelink, a national ancillary service network, in partnership with Eo2 Concepts is marketing the TransCu O2 wound device. A low dose tissue oxygenation system for the treatment of difficult to heal wounds.
vgmhomelink.com or call:
800-482-1993.
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Hy-Tape International

P.O. Box 540
Patterson, NY 12563-0540
Hy-Tape International produces waterproof, zinc oxide-based adhesive tape. Patches and strips. Hy-Tape delivers its unique qualities and benefits in both critical care and everyday situations, when it counts most.
hytape.com or call: 800.248.0101.
See us at booth 312

INVACARE

1 Invacare Way
Elyria, OH 44035-4190
The global leader in the manufacture and distribution of innovative home and long-term care medical products that promote recovery and active lifestyles.
invacare.com/ or call: 800 333-6900.
See us at booth 431

Joerns Healthcare

2430 Whitehall Park Dr,
Suite 100
Charlotte, NC 28273
joerns.com or call: 800-826-0270.
See us at booth 311

JUZO

3690 Zorn Dr.
Wyahoga Falls, OH 44223
juzousa.com or call: 800-222-4999.
See us at booth 226

Keneric Healthcare

8925 Sterling Street, Ste. 100
Irving, TX 75063
Keneric Healthcare is the manufacturer and distributor of the RTD® Wound Care Dressing.This proprietary highly absorbent antimicrobial foam dressing is the only product available with three active ingredients integrated into the foam matrix; Methylene Blue, Gentian Violet and Silver.
kenerichc.com or call: 855-872-2013.
See us at booth 110

Kiss Healthcare

13089 Peyton Drive #C212
Chino Hills, CA 91709
kisshealthcare.com or call: 909-632-1361.
See us at booth 114

Kyoui Health

3107 Rue des Hotels Quebec, QC G15 4W5, Canada
Kyoui™ is an innovative manufacturer of oral care products that are simply effective.™ Kyoui™ owns numerous oral care patents, including the Kyoui™ angle-neck toothbrush.
kyoui.com or call: 855-465-9684.
See us at booth 404

LINET Americas, Inc.

10420-R Harris Oaks Blvd.
Charlotte, NC 28269
Global leader in healthcare innovation, manufacturing hospital beds that help safely reposition patients and improve caregiver safety.
linetamericas.com or call: 704-941-3301.
See us at booth 434

Lippincott Williams & Wilkins

2 Commerce Sq.,
2001 Market St.
Philadelphia, PA 19103
lww.com or call: 215-521-8300.
See us at booth 2

L&R USA, Inc.

3880 W Wheelhouse Road
Milwaukee, WI 53208
With establishing the Debrisoft® Difference for wound debridement, our Suprasorb® portfolio for advanced wound care and our complete compression range, L&R USA INC. is your trusted partner in wound care and compression.
lohmann-rauscher.us or call: 855-892-4140.
See us at booth 425

ManukaMed USA, LLC

9160 Carothers Parkway
Franklin, TN 37067
ManukaMed, the world leader in wound care science. Its high potency Manuka honey wound dressings are effective in assisting with autolytic debridement.
ManukaMeds.com or call: 800-881-3654.
See us at booth 515

McKesson Medical-Surgical

9954 Mayland Dr., Suite 4000
Richmond, VA 23233
McKesson Medical-Surgical works with extended care providers, in-home patients, payers and others across the spectrum of care to build healthier organizations that deliver better care to patients in every setting. McKesson Medical-Surgical helps its customers improve their financial, operational, and clinical performance with solutions that include pharmaceutical and medical-surgical supply management, healthcare information technology, and business and clinical services.
mckesson.com or call: 877.611.0081.
See us at booth 233

Medela, Inc.

1101 Corporate Drive
McHenry IL 60050
Medela Healthcare optimizes patient care through pioneering and intelligent, mobile, digital chest drainage therapy and advanced wound management with NPWT.
medela-healthcare.us or call: 877-735-1626.
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medi USA/circaid

6481 Franz Warner Parkway
Whitsett, NC 27377
medi…I feel better! medi is committed to helping people all around the world live a more independent, productive and satisfying life while managing circulatory issues. Medi takes its position as global leader in medical compression seriously by investing in research, education and innovation providing the latest technologies in compression therapy enabling our patients to not only manage their disease but to enjoy life to its fullest.
mediusa.com or call: 800-633-6334.
See us at booth 325

Mission® PHARMACAL

Dr. Smith's Adult Barrier Spray/Mission Pharmacal

10999 11-1-10 West, 10th Flr.
San Antonio, TX 78230
Dr. Smith's® Adult Barrier Spray provides a touch-free way to treat and prevent incontinence Associated Dermatitis. The zinc oxide 10% spray provides a safe and discreet alternative to traditional creams and ointments.
adultbarrierspray.com/ or call: 210-696-8400.
See us at booth 328

Molnlycke Healthcare

10999 11-1-10 West, 10th Flr.
5550 Peachtree Pkwy., St. 500
Norcross, GA 30092 USA
Mölnlycke Health Care is a world-leading provider of single-use surgical and wound care products for customers, healthcare professionals and patients.
molnlycke.com/ or call: 210-696-8400.
See us at booth 526

Monarch Labs

17875 Sky Park Circle, Suite K
Irvine, CA 92614
Monarch Labs develops, produces, and distributes "Living Medicine": maggots, leeches, fish, and other medicinal animals. Clinical and technical support available 24/7.
MonarchLabs.com or call: 949-679-3000.
See us at booth 410

MPM MEDICAL, INC.

MPM Medical, Inc.

2301 Crown Ct.
Irving, TX 75038
MPM Medical, Inc. has been in the Advanced Skin and-Wound Care market for more than 20 years. MPM provides products to clinicians and patients to help facilitate wound healing and increase better outcomes.
mpmmed.com or call: 800-232-5512.
See us at booth 335

ROSIE™ WOUND CARE SOLUTIONS

Nurse Rosie Products

7320 Central Ave
Savannah, GA 31406
Nurse Rosie has the most affordable, effective and innovative advanced wound care products on the market.

Our Rosie Wound Care division will provide you with exceptional service and support on our best wound healing products.
nurserosie.com or call: 800-841-1109.
See us at booth 326

Nutricia

9900 Belward Campus Drive, Suite 100
Rockville, MD 20850
Nutricia is a global health company that leads the development & use of advanced medical nutrition for specialized care. Our Specialized Adult Nutrition products include Pro-Stat®, UTI-Stat®, Fiber-Stat®, Diff-Stat®, and Nutilis®
SpecializedAdultNutrition.com for information. Or call: 800-221-0308.
See us at booth 306

Organogenesis, Inc.

150 Dan Road
Canton, MA 02021
Having pioneered the field, Organogenesis Inc. is a commercial leader in regenerative medicine, focused in the areas of bio-active wound healing and soft tissue regeneration.
apligraf.com
dermagraft.com or call: 888-HEAL-2DAY.
See us at booth 514

Osiris Therapeutics, Inc.

7015 Albert Einstein Drive
Columbia, MD 21046
Osiris Therapeutics, Inc., is a leader in researching and developing regenerative medicine products that improve lives. Osiris has achieved commercial success with products in orthopaedics, sports medicine and wound care.
osiris.com or call: 888-674-9551.
See us at booth 305

Precision Fabrics Group, Inc.

301 N Elm St, Suite 600
Greensboro, NC 27406
PFG & partner Standard Textile Co, have developed the next generation of healthcare linens that improve patient comfort; prevent, reduce & promote healing of pressure ulcers; eliminate a source of potential airborne contamination; & lower overall healthcare costs.
therapeuticbedding.com or call: 800-999-0400.
See us at booth 513

Principle Business Enterprises, Inc.

20189 Pie Lake Rd.
Bowling Green, OH 43402
PBE's strength is in the design and development of high performance absorbent niche products for special applications in the areas of healthcare, consumer and engineered products.
principlebusinessenterprises.com or call: 419.352.1551.
See us at booth 407

Puracyn Plus by Innovacyn

3546 N. Riverside Ave.
Rialto, CA 92377
Innovacyn offers Puracyn Plus Professional Formula, the next-generation wound irrigation and management solution designed to improve the most essential part of the wound treatment process: preparation of the wound bed.
puracyn.com or call: 866.318.3116.
See us at booth 412

Safe n Simple

4786 Oakhurst Ridge
Clarkston, MI 48348
Safe n Simple provides high quality, cost effective wound care and ostomy products. Covered by medicare and most insurances.
sns-medical.com or call: 844-767-6334 (Toll free).
See us at booth 435

SANTUS

5550 W. Executive Dr. Ste. 230
Tampa, FL 33609
Our total Skin Care Regimen includes a full line of products that clean, moisturize, protect and treat skin problems, preventing wounds from becoming a liability..
Lantiseptic.com or call: 8447santus.
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27911 Franklin Parkway
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Shield Healthcare has been a leader in medical supplies for care at home since 1957. Count on Shield Healthcare to provide you the brand-name supplies you know and trust, shipped discreetly to your door.
shieldhealthcare.com/ or call: 800.765.8775.
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Innovative products for nursing and therapy. Designed and manufactured with a difference.
skil-care.com or call: 914-963-2040.
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Smith & Nephew

3909 Hulen St.
Fort Worth TX 76107
Come see us at our booth!
santyl.com or call: 800-441-8227.
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Southwest Technologies, Inc., Wound Care Products

1746 Levee Rd.
North Kansas City, MO 64116
Southwest Technologies, Inc. offers innovative technologies (glycerine-based gel sheets, highly absorbent fillers, several forms of collagen products and our newly added honey sheets) for simple wound management solutions.
elastogel.com or call: 816-221-2442.
See us at booth 524

Stratus Pharmaceuticals Inc.

12379 SW 130th Street
Miami, FL 33186
Stratus offers a wide variety of economical wound care, dermatological and podiatric products. We are easily accessible to our customers in pharmacies and physician offices.
stratuspharmaceuticals.com or call: 800 442-7882.
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Supreme Medical

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Mobile, AL 36685
As featured in the Buzz Report, Supreme Medical is now integrated with the WCEI Wound Central App. Download and register today to receive medical supply pricing based on our membership buying power of 20,000 Strong!
SupremeMedical.com or call: 800-461-1370.
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81 Thompson Street
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Avadim Technologies features its patented safe, low pH topical barrier preservation product, Theraworx Technology, which has demonstrated unprecedented results in preventing, and addressing existing incontinence-associated demititis (IAD) in fecal and/or urine incontinent patients.
www.theraworx.com or call: 877-677-2723.
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Tissue Analytics, Inc.

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Baltimore, MD 21202
Standardized wound measurements are key to monitoring healing and selecting appropriate dressings. Our HIPAA-compliant app automatically measures wound length, width, and area—eliminating the error of ruler measurements. Visit Booth #200 to see how!
tissue-analytics.com
or call: 443-491-8241.
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Total Wound Care Solutions

547 Long Point Road #100
Mount Pleasant, SC 29464
TWS is an industry leading DME company specializing in the home-delivery of wound care, ostomy, and urology supplies.
tws.net or call: 888-858-9988.
See us at booth 429

United Ostomy Associations of America, Inc.

PO Box 525
Kennebunk, ME 04043
United Ostomy Associations of America (UOAA) offers advocacy, education, and peer support for people who have or will have an intestinal or urinary diversion. Visit us to learn more about receiving free materials to support your patients.
ostomy.org or call: 800-826-0826.
See us at booth 517

WCEI®

25828 Pastoral Drive
Plainfield, IL 60585
WCEI provides comprehensive online and onsite courses in the fields of Skin, Wound, Diabetic and Ostomy Management. Health care professionals who meet the eligibility requirements may sit for the prestigious WCC®, DWC® and OMS national board certification examinations through the National Alliance of Wound Care and Ostomy® which is the largest group of multidisciplinary certified wound care professionals in the United States.
wcei.net or call: 877-462-9234
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Winchester Laboratories (Saljet)

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Suite B-106
Riviera Beach, FL 33404
Saljet® a 30ml, one time use, sterile saline, designed for wound care. It is easy to use, is sterile every use, saves nursing time and helps to achieve better outcomes.
saljet.com or call: 630-561-4977.
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Wound Care Advantage

304 W. Sierra Madre Blvd.
Sierra Madre, CA 91024
Wound Care Advantage provides cost effective services to hospitals, because we believe every patient deserves comprehensive wound care.
thewca.com/ or call: 888.484.3922.
See us at booth 308

WoundSource

PO Box 189
Hinesburg, VT 05461
WoundSource is the definitive source for wound care and product information in the world. Our mission for the past 19 years has been to provide independent information to help clinicians make informed choices about wound care products.
WoundSource.com or call: 800-787-1931.
See us at booth 403

Wound Zoom

2916 Borham Ave.
Stevens Point, WI 54481
WoundZoom Inc is committed to making advanced, intuitive, & affordable technology for better wound care & patient outcomes. Our new Wound Management System provides hardware & software solutions allowing clinicians to streamline workflows & evaluate treatment effectiveness.
woundzoom.com or call: 888.237.0546.
See us at booth 301

Vendor Showcase Exhibits

Meet with exhibitors, participate in hands-on labs at their booths and learn about new industry products. Each attendee has a chance to win a great prize just by attending exhibit hall presentations!

Thursday
September 1, 2016
11:30 a.m. – 2:00 p.m.

Friday
September 2, 2016
11:30 a.m. – 2:00 p.m.

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Anasept® Antimicrobial Skin & Wound Products

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*J. Lindfors, Ostomy/Wound Management. 2004; 50 (8): 28-41.

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800-489-2591
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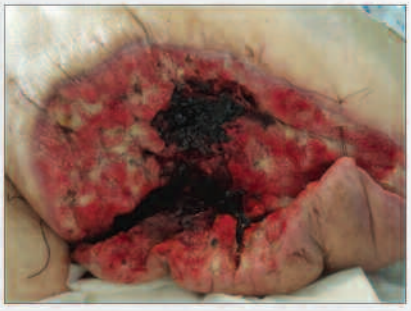
v.a.c. veraflo™

AN EPIPHANY IN WOUND MANAGEMENT

WHY HAVEN'T YOU TRIED

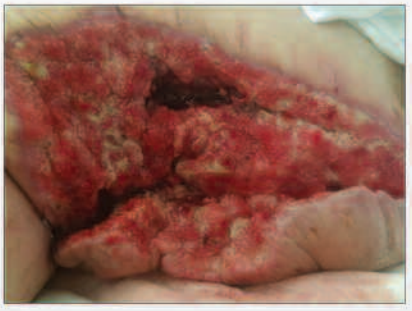
V.A.C. VERAFLO™ INSTILLATION THERAPY YET?

A 63-year-old morbidly obese female admitted to an in-patient nursing unit with an infected right thigh lobule excision of a massive localized lobule (MLL) that inhibited her ability to ambulate.



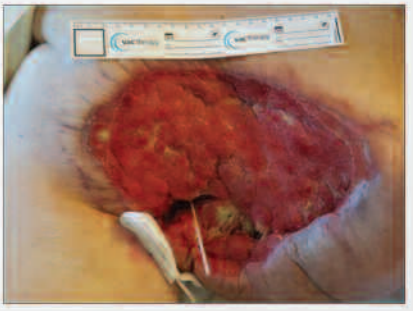
Post-op Day 21 prior to V.A.C. VERAFLO™ Therapy

- 34.5cm x 15cm x 14.5cm
- Dwell Time: 5 minutes
- Cycle Frequency: 6 hours
- Solution: 0.25% acetic acid



Post-op Day 24 prior to V.A.C. VERAFLO™ Therapy

- One dressing change
- Dwell Time: 5 minutes
- Cycle Frequency: 4 hours
- Solution: Normal saline



Post-op Day 28 with V.A.C. VERAFLO™ Therapy

- 23cm x 14cm x 9.5cm
- Patient discharged to rehab facility on V.A.C.® Therapy

Patient data and photos courtesy of Elizabeth McElroy, CRNP, CWS, CWOCN; West Reading, PA

* V.A.C.® Therapy (KCI, an Acelity Company, San Antonio, TX) was initiated with continuous negative pressure at -125mmHg for 3 weeks. On postoperative Day 48, the patient underwent a split-thickness skin graft (STSG) for wound closure. V.A.C.® Therapy was used to bolster the STSG for 1 week, and the patient was discharged home from the rehabilitation facility with a healed wound.

The Certainty of Acelity™

acelity.com

As with any case study, the results and outcomes should not be interpreted as a guarantee or warranty of similar results. Individual results may vary depending on the patient's circumstances and condition.

For more information, contact your Acelity representative or visit **VERAFLO.com**

NOTE: Specific indications, contraindications, warnings, precautions and safety information exist for KCI products and therapies. Please consult a physician and product instructions for use prior to application. Rx only.

KCI
An Acelity Company

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