Triad®
Hydrophillic wound dressing

Case Studies
Impact of Difficult-to-Dress Wounds

On wet or irregular surfaces, wound dressings may not always stay in place. Frequent dressing replacements could lead to:

- **Avoidable costs** related to using extra dressings
- **Increased workload** for nurses replacing dressings
- **Delayed wound healing** impacting the total cost of care

A unique approach

**Triad** Hydrophilic Wound Dressing is a sterile coating that offers a unique approach to wound management.

- **Apply anywhere**
  Triad is easy to apply, directly from the tube onto the wound or peri-wound skin, anywhere on the body.

- **Adheres to wet skin**
  Triad adheres to wet or dry skin and consistently stays in place, even in the presence of incontinence or maceration.

- **Keeps the wound covered**
  Triad creates a moist wound environment that facilitates healing and autolytic debridement.
How Triad® Works

Wounds on irregular surfaces
Triad is designed to be applied directly from the tube onto the wound without the need for a secondary dressing.

Irregular surfaces could include the gluteal cleft, coccyx, perineum, buttocks, groin, face, hands, feet, and other areas.

Triad is easy to apply, and can be used on the wound or peri-wound skin.

Broken skin in the presence of incontinence
Triad is a sterile coating that can be used on broken skin.

CMC allows Triad to adhere to wet skin, keeping the wound covered and protected from incontinence.

Triad contains dimethicone to moisturize the skin and petrolatum and zinc oxide to reduce skin irritation.

Maceration of peri-wound skin
Triad is easy to use on larger surfaces and can be used on the wound and peri-wound skin.

CMC allows Triad to adhere to macerated skin, keeping it covered and protected from wound exudate.

Triad contains dimethicone to moisturize the skin and petrolatum and zinc oxide to reduce skin irritation.

Necrotic tissue such as slough or eschar
Triad is hydrophilic, which means that natural moisture spreads evenly across the wound surface, maximizing contact and creating a moist environment.

A moist wound environment facilitates autolytic debridement, where the body’s own enzymes break down necrotic tissue.

CMC allows Triad to absorb low to moderate levels of wound exudate or broken-down tissue.
**Triad: For Challenging Difficult-to-Dress Wounds**

Management of wounds with a hydrophilic wound dressing in locations not easily managed with conventional dressings

**Author:** Denice R. Taylor, MSN, CNP, CWOCN; Columbus, Ohio

Presented at the SAWC® Fall Conference; Las Vegas, NV, October, 2014

Sponsored by Coloplast

**Clinical problem**

There are a variety of conventional dressings available for the management of wounds. In some cases the use of conventional dressings in areas exposed to moisture (i.e., urine and stool) or in areas with irregular wound borders and surfaces are not always easy to maintain. The following case series demonstrates how these wounds can be managed with the use of a zinc oxide-based hydrophilic wound dressing.

**Conclusion**

The use of a zinc oxide-based hydrophilic dressing is cost-effective, easy-to-use, and highly effective in promoting wound healing in wounds where conventional dressings are not easy to maintain.

**CASE 1**

57-year-old, morbidly obese, male with a six-day-old scrotal wound secondary to surgery for hidradenitis.

Prior treatment: Normal saline moistened gauze with peripads.

**DAY 1**  
Hydrophilic dressing applied

**DAY 30**  
Unroofing of skin flap/fold

**DAY 69**  
99% closure
Past management/current clinical approach/outcomes

CASE 2
76-year-old, male with scrotal and perianal wound secondary to necrotizing fasciitis. History includes end-stage renal disease and loose stools. Prior treatment: Wound spray, oil emulsion dressing, gauze, and absorbent pad.

DAY 1
Hydrophilic dressing, oil emulsion dressing, absorbent pad

DAY 15
Hydrophilic dressing, oil emulsion dressing; discontinued absorbent pad

DAY 69
100% closure

CASE 3
86-year-old, female with a chronic ulcer right nasolabial fold extending into the right nostril, secondary surgery for trigeminal trophic syndrome, right lateral facial wound and contact dermatitis of the cheek, tissue beneath the nose (philtrum) and upper lip secondary to uncontrolled drainage. Oxygen via nasal cannula in place. Prior treatment: Amorphous gel, alginate dressing, hydrocolloid dressing, and absorbent foam.

DAY 1*
Hydrophilic dressing applied nasolabial fold, upper lip and lip, absorbent foam/nostril

DAY 22*
Absorbent foam discontinued; hydrophilic paste nasolabial fold and cotton ball/nostril

DAY 36*
75% wound progression and improvement of appearance

*Patient gave consent for photos of her face to be used.
**Triad: For Autolytic Debridement**

Using a hydrophilic wound dressing for autolytic debridement

Author: Marilyn Boyle, RN, BSN, CWOCN; Select Specialty Hospital Pontiac, Pontiac, MI

Presented at the SAWC® Fall Conference; Anaheim, CA, September 2010

Sponsored by Coloplast

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**Introduction**
A key factor in wound healing is the removal of devitalized tissue from a wound. Established methods for wound debridement include: autolytic, enzymatic, high pressure fluid irrigation, mechanical, maggot therapy, surgical and ultrasonic mist. Not all the debridement methods listed are suitable and/or available within the different healthcare settings. To complicate matters, the FDA has halted the sale of papain-urea enzymatic debriding agents in the United States. As a result, a Long Term Acute Care (LTAC) facility turned to autolytic debridement as their primary method for removing devitalized tissue by using a unique hydrophilic wound dressing. Autolytic debridement is a highly selective, yet natural process, where endogenous proteolytic enzymes break down devitalized tissue.

**Objective**
To demonstrate the effectiveness of a hydrophilic wound dressing in removing devitalized tissue from chronic wounds through autolytic debridement.

**Methodology**
Devitalized tissue was removed from three chronic wounds with different etiologies by using a hydrophilic wound dressing. This clinical case series evaluated the effect of a hydrophilic wound dressing in removing devitalized tissue thereby producing a clean wound bed. Other evaluation parameters in this clinical case series included ease-of-use, patient comfort and cost-effectiveness.

**Results**
Using a hydrophilic wound dressing to promote autolytic debridement resulted in rapid removal of devitalized tissue. Additionally, the hydrophilic wound dressing proved to be an easy-to-use, pain-free and cost-effective alternative to other debridement methods.

**Conclusion**
This hydrophilic wound dressing proved to be an efficient and effective method to remove devitalized tissue from a wound.

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**Triad® Hydrophilic Wound Dressing**

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**References**
CASE STUDY 1
67-year-old, male, status post ankle/foot surgery was admitted for osteomyelitis due to an infected diabetic foot ulcer. Two pressure ulcers with 100% thick, black eschar on the left lower leg were discovered upon cast removal. Day 1: Small ulcer measured 1.5cm x 2.5cm and large ulcer measured 2.5cm x 5.5cm. Autolytic debridement was initiated using Triad® Hydrophilic Wound Dressing, a zinc oxide-based paste instead of a once-a-day enzymatic debriding agent. A thin layer of Triad was spread directly onto the eschar, then to absorb the liquefied necrotic tissue Biatain® Foam Dressing was used as the secondary cover dressing. Prior to securing the dressings with a gauze bandage roll, Sween® 24 Cream was applied to manage the severe xerosis. Wound dressings initially were changed three times a week, and then decreased to twice a week. Throughout the dressing changes the patient offered no complaints of pain. Within a week the smaller ulcer was 100% debrided and fully resolved at three weeks. The larger ulcer, after three weeks, reduced in size to 1.7cm x 4cm, the eschar was 100% debrided and the severe xerosis had resolved.

CASE STUDY 2
63-year-old, male, with numerous conditions including peripheral vascular disease, diabetes mellitus and a previous below-the-right-knee amputation was admitted with a necrotic wound on his left forefoot, status post amputation for osteomyelitis. On admission, 60% of the wound was covered with black eschar, 20% covered with yellow slough and 20% covered with red granulation tissue. Lab work: Albumin - 1.6 and prealbumin - 16. A combination of autolytic debridement and low frequency ultrasound were used to prepare the wound for further surgery. Triad Hydrophilic Wound Dressing was impregnated into an antimicrobial gauze dressing. The Triad impregnated dressing was lightly fluffed and then applied over the wound. The dressings were secured with a gauze bandage roll and changed daily. Three times a week, the wound was treated with low frequency ultrasound. Within two weeks the wound was 50% debrided. At Day 28, with 90% of the wound covered with red granulation tissue, the patient was evaluated by the vascular surgeon for future skin grafting.

CASE STUDY 3
87-year-old, female, was admitted with an unstageable pressure ulcer on the sacrum, which was surgically debrided ten days prior to admission. On admission the ulcer measured 8cm x 8.5cm x 0.5cm and was covered with 90% eschar/slough and 10% red granulation tissue. Lab work: Hemoglobin - 7.9, albumin - 1.8 and prealbumin - 14. Rather than sending patient back to the operating room, a less aggressive form of debridement was selected. Autolytic debridement was initiated using Triad Hydrophilic Wound Dressing. Triad was impregnated into an antimicrobial gauze dressing and then applied over the wound. Dressings were secured with an ABD bandage and changed daily. The patient offered no complaints of pain during the dressing changes. By Day 11 the sacral pressure ulcer fully opened up, demonstrating the “tip of the iceberg” effect and the hard, dry eschar had softened. By Day 26, the wound was covered with 70% red granulation tissue and 30% yellow slough. Autolytic debridement continued through Day 26 when remaining slough still attached by a thick band was conservatively sharp debrided at the bedside.
Triad: A Cost-effective Solution

A comparison of wound management cost and outcomes with a hydrophilic wound dressing* versus a clostridial collagenase ointment† (CCO)

Author: Denice R. Taylor, MSN, ET, CNP, CWOCN, Columbus, OH

Sponsored by Coloplast

Clinical problem
It is well documented that the presence of devitalized tissue in a wound interferes with wound healing and requires debridement. Enzymatic debridement is an effective method of debridement, but in some cases it can be cost-prohibitive. In addition to the cost, the accessibility of this form of debridement can affect timely application for those residing in alternate care settings or at home. The following case series compares the cost and effectiveness of debriding a wound with a clostridial collagenase ointment† (CCO) compared to a zinc oxide-based hydrophilic wound dressing.*

Conclusion
The use of a zinc oxide-based hydrophilic wound dressing* is both cost-effective and highly effective in promoting a moist wound environment to facilitate autolytic debridement.

Product notation:
* Triad® Hydrophilic Wound Dressing, Coloplast Corp.
† Collagenase SANTYL Ointment®, Smith & Nephew, Inc.

CASE 1
56-year-old African-American male with a right posterior calf venous stasis ulcer. Prior medical history: Lower extremity peripheral vascular disease (mixed disease; venous and arterial), and type 2 diabetes. Ulcer present for 5 months. Resides at home. Prior treatment: Clostridial collagenase ointment† (CCO) with normal saline-moistened gauze every 12 hours x10 weeks. Hydrophilic wound dressing* implemented on 09/15/15. Admitted to an extended care facility and lost to follow up.

<table>
<thead>
<tr>
<th>Day</th>
<th>Measurements</th>
<th>Treatment</th>
<th>Dressing change frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAY 1</td>
<td>Initial assessment</td>
<td>9.4 x 6.4 x 0.01 cm</td>
<td>CCO,† normal saline-moistened gauze covered with ABD pad</td>
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<tr>
<td>DAY 24</td>
<td>Measurements</td>
<td>7.0 x 3.5 x 0.1 cm</td>
<td>CCO,† normal saline-moistened gauze covered with ABD pad</td>
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<tr>
<td>DAY 71</td>
<td>Measurements</td>
<td>10.7 x 4.5 x 0.1 cm</td>
<td>CCO,† normal saline-moistened gauze covered with ABD pad discontinued. Hydrophilic wound dressing,* gauze covered with ABD pad initiated</td>
</tr>
<tr>
<td>DAY 85</td>
<td>Measurements</td>
<td>11.5 x 4.0 x 0.025 cm</td>
<td>Hydrophilic wound dressing,* gauze covered with ABD pad</td>
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</tbody>
</table>

Cost comparison for 15 days

<table>
<thead>
<tr>
<th>Dressing</th>
<th>Amount needed</th>
<th>Cost per tube</th>
<th>Total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clostridial collagenase ointment† (CCO)</td>
<td>120 gms/Four 30-g tubes $290.25</td>
<td>$290.25 x 4 = $1,161.00</td>
<td></td>
</tr>
<tr>
<td>Hydrophilic wound dressing*</td>
<td>One 6 oz. (170 gm) tube $23.71</td>
<td>$23.71 x 1 = $23.71</td>
<td></td>
</tr>
</tbody>
</table>

Amount of CCO† determined by entering wound length, wound width and duration of therapy into dosing calculator found at HYPERLINK "http://www.santyl.com/hcp/dosing-calculator" (accessed on May 30, 2019). Use of CCO† should be terminated when debridement is complete and granulation tissue is well established. Found at HYPERLINK "http://www.santyl.com/hcp/application" (accessed on May 30, 2019). Retail costs determined from local pharmacy. Prices may vary.
**CASE 2**

65-year-old white male with a sacral pressure injury, present for 3 ½ months. Prior medical history: Peripheral vascular disease, fecal incontinence, indwelling catheter secondary to urinary incontinence, limited mobility. Resides at an ECF. Prior treatment: Clostridial collagenase ointment† (CCO) with normal saline-moistened gauze daily x9 days. Hydrophilic wound dressing* implemented on 12/09/15.

**Cost comparison for 22 days**

<table>
<thead>
<tr>
<th>Dressing</th>
<th>Amount needed</th>
<th>Cost per tube</th>
<th>Total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clostridial collagenase ointment† (CCO)</td>
<td>150 gms/Five 30-g tubes</td>
<td>$290.25</td>
<td>290.25 x 5 = $1,451.25</td>
</tr>
<tr>
<td>Hydrophilic wound dressing*</td>
<td>One 6 oz. (170 gm) tube</td>
<td>$23.71</td>
<td>23.71 x 1 = $23.71</td>
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</table>

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**DAY 1, initial assessment**

Measurements: 9.4 x 6.4 x 0.01 cm

Treatment: CCO†, normal saline-moistened gauze covered with ABD pad

Dressing change frequency: Every 12 hours

**DAY 22**

Granulation tissue present.

Measurements: 7.4 x 4.5 x 1.6 cm

Undermining: 2.9 cm @ 9 o’clock

Treatment: Hydrophilic wound dressing,* antimicrobial gauze covered with ABD pad

Dressing change frequency: 3x /week

**DAY 112**

Greater than 90% closure.

Measurements: 4.0 x 0.3 x 0.4 cm

Undermining: 0.1 cm @ 12 o’clock

Treatment: Hydrophilic wound dressing,* antimicrobial gauze covered with ABD pad

Dressing change frequency: 3x /week
CASE 3

<table>
<thead>
<tr>
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<th>Amount needed</th>
<th>Cost per tube</th>
<th>Total cost</th>
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<tr>
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DAY 1, initial assessment
Covered with 100% necrotic tissue.
Measurements: 2.5 x 12.8 x 5.0 cm
Sinus tract: 6.9 cm @ 9 o’clock and 15 cm @ 3 o’clock
Treatment: Hydrophilic wound dressing,* antimicrobial gauze covered with ABD pad
Dressing change frequency: 3 to 4x /week

DAY 26
Granulation tissue present.
Measurements: 4.0 x 6.9 x 2.5 cm
Sinus tract: 3.0 cm @ 9 o’clock and 7.5 cm @ 3 o’clock
Treatment: Hydrophilic wound dressing,* antimicrobial gauze covered with ABD pad
Dressing change frequency: 2 to 3x /week

DAY 54
Granulation tissue well established.
Sinus tract and undermining: resolved
Measurements: 2.0 x 3.6 x 0.1 cm
Treatment: Hydrophilic wound dressing,* covered with ABD pad
Dressing change frequency: 2 to 3x /week
**Triad: A Cost Effective Solution**

An examination of a hydrophilic zinc oxide-based paste dressing for use in difficult-to-dress wounds

Author: Lori Morrow, BSN, RN, CWOCN; North Shore Medical Center, Boston, MA
Presented at the 47th WOCN® Society Annual Conference; San Antonio, TX, June 2015

**Patient-centered focus**
Pressure ulcers and incontinence associated dermatitis (IAD) are costly to both patients and healthcare systems and are associated with significant human suffering. While the etiology of IAD differs from pressure ulcers, both frequently co-exist. Often these wounds are present in difficult-to-dress areas such as the buttocks or gluteal cleft. Studies of hospitalized patients found a 42% prevalence rate of urinary incontinence and 33% of fecal incontinence.

**Problem statement**
Silicone foam border dressings are a conventional intervention for pressure ulcer treatment. However, in patients who are incontinent, or have wounds in difficult-to-dress areas, a zinc oxide-based paste dressing could offer improved wound healing by reducing necrotic material in wounds, providing a moist wound environment, and protecting the periwound skin. Significant cost savings and reduced inefficiency can be realized.

**Aim statement & scope**
The purpose of this study was to evaluate the efficacy of a zinc oxide-based hydrophilic paste dressing for the treatment of skin damage due to moisture and Pressure located in the buttocks and gluteal cleft.

<table>
<thead>
<tr>
<th>Time</th>
<th>Admission</th>
<th>Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.85</td>
<td>0.2583</td>
</tr>
<tr>
<td>StDev</td>
<td>0.2468</td>
<td>0.2922</td>
</tr>
<tr>
<td>N</td>
<td>12</td>
<td>12</td>
</tr>
</tbody>
</table>

In a trial on 12 patients, Triad® was evaluated as an alternative to silicone foam dressings in difficult-to-dress areas. By staying in place, Triad was able to create a moist wound environment, promoting autolytic debridement, and thereby reducing necrotic tissue. On average, the amount of necrotic tissue in the wound bed was reduced from 85% on admission to 25% on discharge.
Case study
- 65-year-old, male, malnutrition, *C. difficile* colitis, type II diabetic, sigmoid colon adenocarcinoma, acute kidney injury, smoker, failure to thrive, history of fall
- Chronic sacral ulcer over two years’ duration
- Nutrition - NPO on TPN; hemoglobin 8.6; total protein 4.6; albumin 1.8
- Unable to maintain dressing due to multiple bloody stools and urinary incontinence
- Treatment included nutrition consult, standard pressure ulcer preventative measures and application of zinc oxide-based hydrophillic paste to unstageable sacral and ischial pressure ulcers
- April 2015: Left ischial ulcer with epithelial tissue and coccyx epithelial tissue with 1 cm opening

Impact
North Shore Medical Center
6 months
July - December 2014
At a minimum of 30% of patients with incontinence and/or difficult-to-dress wounds

Actions
Patients were sequentially identified with wounds located in difficult-to-apply areas, require debridement, minimal to moderate drainage, and used with or without a cover dressing. Wounds were assessed for visual determination of percentages of necrotic tissue versus granulation tissue and wound pain. Additionally, staff nurses were asked to rate the ease of application.

Conclusion
The zinc oxide-based hydrophillic paste effectively reduced the level of necrotic tissue and promoted wound healing. The use of a hydrophilic paste dressing is cost-effective, demonstrates efficacy and is easily applied by nursing staff. The hydrophilic paste dressing is a valuable option for providing a moist wound environment and promoting autolytic debridement delivering desired results.

Projected savings
936 dressings

Number of Wound RN visits for sacral pressure ulcers = 485

145 pts
936 dressings

Number of sacral border foam dressings used = 3120
**Triad: Various Applications**

Management of wounds with various etiologies using a hydrophilic wound dressing

Authors: Janet Mullen, BSN, BEd, RN, CWOCN, CFCN; Carol Mathews, BSN, RN, CWOCN; Cecilia Zamarripa, MSN, RN, CWON; Eugenia Mangel, BSN, RN, CWOCN; Jessica Johnston, BSN, RN, COCN; University of Pittsburgh Medical Center, Pittsburgh, PA

Presented at the 45th WOCN® Society Annual Conference; Seattle, WA, June 2013

Sponsored by Coloplast

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**Clinical problem**

The scope of practice for WOC nurses includes managing wounds caused by various etiologies, such as pressure, shear, friction, and moisture. This series of clinical cases focused on topical wound treatment, specifically use of a zinc oxide-based hydrophilic wound dressing (Triad®).

**Conclusion**

A zinc oxide-based hydrophilic wound dressing (Triad) is a viable option for the management of wounds with multiple etiologies.

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**Past management/current clinical approach/outcomes**

**CASE 1: GLUTEAL CLEFT**

49-year-old, morbidly obese male, admitted to CVICU from ER. Placed on bi-level ventilator and bariatric rotational low air loss bed. Open area on gluteal cleft noted.


Day 12: Open gluteal cleft area had closed.
CASE 2: MACERATION — VENOUS LEG ULCER
60-year-old, male, admitted with wounds on left leg due to lymphedema. Staff nurse applied petrolatum dressing. Upon removal extensive periwound maceration noted. Within 48 hours after using a hydrophilic dressing, maceration had resolved.

CASE 3: DEBRIDEMENT — DIABETIC FOOT ULCER
68-year-old, male, two days post heart transplant with diabetic foot ulcer. Due to anticoagulant therapy sharp debridement was not an option. To promote autolytic debridement and soften the periwound callous a hydrophilic dressing covered with a transparent hydrocolloid was applied. Day 22: Granulation tissue well-established and periwound callous softened.

CASE 4: DEBRIDEMENT — SUSPECTED DEEP TISSUE INJURY (SDTI)
62-year-old, female, status post tumor debulking and hypothermic chemo perfusion for appendiceal carcinomatosis, admitted to SICU. Bordered silicone sacral dressing was applied preoperatively. Upon removal a SDTI ulcer was noted on sacrum. Placed on rotational low air loss therapy and TPN started. Due to the wound location and etiology (pressure/shear) a hydrophilic dressing was applied. SDTI ulcer evolved into an unstageable ulcer. Day 10: Returned to OR. Post surgery, topical therapy remained the same. Day 29: Wound 100% debrided. Day 43: Complete wound closure.
Indications and Contraindications

Triad® hydrophilic wound dressing is indicated for the local management of pressure and venous stasis ulcers, dermal lesions/injuries, superficial wounds, scrapes, first-and-second-degree burns, partial-and-full-thickness wounds.

Triad® is contraindicated for third degree burns or infected wounds. See device label for complete information including warnings and precautions.

For further information call Coloplast Corp. at 1-800-533-0464 and/or consult the company website at www.coloplast.us

Triad is only sterile on first application.

Ostomy Care / Continence Care / Wound & Skin Care / Interventional Urology

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Coloplast Canada
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