Wound Care Guidance by Type of Wound

Wound care may be guided by the characteristics and type of wound. The following pages contain charts and algorithms to give guidance on wound care based on wound type. Follow the chart through each step or consideration for maintaining the physiologic local wound environment. If debridement is necessary and appropriate, a debridement algorithm provides options for removal of necrotic tissue to aid in wound healing. These steps can also be used to assist in developing and documenting the wound care plan.

These key components are addressed:
- Cleansing
- Debridement
- Dressing selection
- Support surfaces
- Wound symptom management (pain, odor, bleeding, etc)

Note: with any intervention, if improvement is not seen within two weeks consider a change in therapy.
## WOUND TREATMENT GRID: Pressure Ulcers Stage 1 & 2

<table>
<thead>
<tr>
<th>Wound Care Need</th>
<th>Pressure Ulcer Stage 1 or 2</th>
<th>Comments</th>
</tr>
</thead>
</table>
| **Description** | Stage 1: Localized reddened area, non-blanchable  
Stage 2: Partial thickness loss of dermis, open/broken blister | Stage 1 may be difficult to detect in patients with darker skin tones |
| **Cleanse** | Normal saline or commercial wound cleanser | Irrigate using 4-15 psi:  
- Spray bottle: 1.2 psi (inadequate)  
- Piston syringe: 4.2 psi  
- Squeeze bottle with irrigation cap: 4.5 psi  
- 35 ml syringe and 18 gauge needle: 8 psi
  - Proper sharps precautions required if using this method |
| **Debridement** | Stage 1 or 2: N/A | No debridement necessary |
| **Dressing** | Stage 1: Moisturizer, barrier ointment or cream.  
Transparent film, thin hydrocolloid, foam.  
Stage 2: Barrier ointment, Xenaderm® or Granulex®, alginate  
Transparent film, thin hydrocolloid, foam  
Contact layer to protect wound bed | • Protect periwound area with a skin barrier film if an adhesive is used  
• Do not use hydrocolloid if infection is present |
| **Infection** | Stage 1: N/A  
Stage 2:  
- Honey  
- Mupirocin (Bactroban®) ointment  
- Silver dressing  
- Antiseptics*  
- Use topical antibiotic ≤ 14 days to reduce colonization  
*Rinse wound bed with normal saline after using any antiseptic cleanser to minimize toxic effects of the antiseptic. | See Antimicrobials on Wound Care Products chart, page 42.  
May treat empirically:  
- MRSA: cadexomer iodine, mupirocin ointment, silver dressing  
- Pseudomonas: acetic acid 0.25% topical gentamicin  
- VRE: hydrofera blue (PVA+methylene blue+gentian violet), silver dressing  
- MSSA: cadexomer iodine, chlorhexidine, hydrofera blue, mupirocin, silver dressing^2 |
| **Malodour** | Stage 1: N/A  
Stage 2:  
- Metronidazole crushed tabs (Flagyl®) to wound bed with dressing changes; use gel (Metrogel®) only if wound bed is dry  
- Charcoal dressings  
- Honey  
- Cleanse with ½ strength (0.25%) sodium hypochlorite (Dakin’s 0.25%)  
- Change hydrocolloid dressing every 24-48 hours. | • Wound cleansing & debridement aid odor control  
• Change dressing more often to manage odor and/or exudates.  
• Hydrocolloid dressing tend to create odor (doesn’t mean infection is present)  
• Environmental strategies:  
  - In room: kitty litter, vanilla extract, coffee grounds, dryer sheets  
  - On dressing: essential oils (wintergreen or lavender) |
| **Dead Space** | N/A | N/A |
| **Pruritus** | Not usually associated with wound, assess surrounding skin. | If patient reports pruritus, evaluate for contact dermatitis, hypersensitivity, or yeast dermatitis |
## WOUND TREATMENT GRID: Pressure Ulcers Stage 1 & 2

<table>
<thead>
<tr>
<th>Wound Care Need</th>
<th>Pressure Ulcer Stage 1 or 2</th>
<th>Comments</th>
</tr>
</thead>
</table>
| **Bleeding**    | Dressing strategies:        | • Not applicable to Stage 1; skin is intact  
|                 | • Calcium alginate (silver alginate is not hemostatic) | • Consider checking: platelet count, PT/INR, vitamin K deficiency  
|                 | • Non-adherent dressing     | • Ask: Is transfusion appropriate? Is patient on warfarin?  
|                 | • Coagulants: gelatin sponge, thrombin | |
|                 | Topical/local strategies:   | |
|                 | • Sclerosing agent: silver nitrate | |
|                 | • Antifibrinolytic agent: tranexamic acid | |
|                 | • Astringents: Alum solution, sucralfate | |
| **Support Surface** | Float heels  
|                   | Group 1: Support Surface (prevention)  
|                   | Group 2: Support Surface (stage 2 ulcers present) | • Group 1: Static. Mattress, pressure pad or foam or gel overlays.  
|                   |                                         | • Group 2: Dynamic. Alternating and low air loss mattress |
| **Pain**        | Topically:                  | • Allow procedural time-outs.  
|                 | • 2% lidocaine or EMLA cream 30-60 minutes before dressing change; ³ | • Use moisture-balanced dressing  
|                 | • Morphine in hydrogel (only for open/inflamed wounds)⁴ | • Avoid adherent dressings  
|                 | Systemically:               | • Use warm saline irrigation to remove dressing  
|                 | • Pre-medicate 30-60 minutes prior to dressing change with appropriate agent for anxiety and/or for pain. | • Use contact layer to protect wound bed  
|                 | • Neuropathic pain (burning, stabbing, stinging, shooting pain): tricyclic, antidepressant, anticonvulsant. | • Complementary therapies, such as music, relaxation, aromatherapy, visualization, medication, can be helpful  
|                 | • Nociceptive pain: appropriate opioid or corticosteroid | |
## WOUND TREATMENT GRID: Pressure Ulcers Stage 3 & 4

<table>
<thead>
<tr>
<th>Wound Care Need</th>
<th>Pressure Ulcer Stage 1 or 2</th>
<th>Comments</th>
</tr>
</thead>
</table>
| **Description** | Stage 3: Full thickness ulcer with subcutaneous tissue visible  
Stage 4: Full thickness ulcer with exposed muscle, tendon, and/or bone | Stage 3 and 4 ulcers have highest infection risk  
Osteomyelitis risk if bond is exposed |
| **Cleanse**     | Normal saline or commercial wound cleanser,  
*Antiseptics: acetic acid 0.25%, chlorhexidine, hydrogen peroxide, povidone-iodine (Betadine®), ½ strength sodium hypochlorite (Dakin’s® solution 0.25%)  
*Rinse wound bed with normal saline after using any antiseptic cleanser to avoid toxic effects. | Irrigate with 4-15 psi to remove debris:  
• Spray bottle: 1.2 psi (inadequate)  
• Piston syringe: 4.2 psi  
• Squeeze bottle with irrigation cap: 4.5 psi  
• 35 ml syringe and 18 gauge needle: 8 psi³  
  – Proper sharps precautions required if using this method |
| **Debridement** | • Autolytic: transparent dressing, hydrocolloid, alginate; hydrogel if wound is dry  
• Chemical: collagenase (Santyl®) (change 1-2 times per day); Full-strength sodium hypochlorite (Dakin’s® solution, 0.5%)⁵ applied to gauze and packed in wound  
• Biosurgical: Larval therapy⁵ | • See Debridement Algorithm  
• Silver inactivates collagenase; do not use silver dressing and collagenase together  
• Only leave full-strength Dakin’s®, solution in contact with wound bed if intent is debridement |
| **Dressing**    | • Hydrocolloid (do not use if infection is present), alginate, foam  
• Contact layer to protect wound bed | • Protect periwound area with a skin barrier film if an adhesive is used |
| **Infection**   | • Silver dressing  
• Honey  
• Antiseptics²  
• Cleanse with ½ strength sodium hypochlorite (Dakin’s® solution 0.25%), then rinse with normal saline  
• Use topical antibiotics ≤ 14 days to reduce colonization | See Antimicrobials on Wound Care Products chart, page 42.  
May treat empirically.  
• MRSA: cadexomer iodine, mupirocin ointment, silver dressing  
• Pseudomonas: acetic acid  
• VRE: hydrofera blue, silver dressing  
• MSSA: cadexomer iodine, chlorhexidine, hydrofera blue, silver dressing²  
*Rinse wound bed with normal saline after using any antiseptic cleanser to minimize toxic effects of the antiseptic. |
| **Malodor**     | • Metronidazole crushed tabs (Flagyl®) to wound bed with dressing changes; use gel (Metrogel®) only if wound bed is dry  
• Charcoal dressings  
• Honey  
• Cleanse with ½ strength Dakin’s® solution, then rinse with normal saline  
• Change hydrocolloid dressing every 24-48 hours. | • Wound cleansing & debridement aid in odor control  
• Change dressing more often to manage odor and/or exudate.  
• Hydrocolloid dressings tend to create odor (doesn’t mean infection is present)  
• Don’t use hydrocolloid if infection is present  
• Environmental strategies:  
  – In room: kitty litter, vanilla extract, coffee grounds, dryer sheets  
  – On dressing: essential oils (wintergreen or lavender) |
| **Dead Space**  | Alginate roping; foam; wound fillers; collagen; hydrogel | Dressing materials placed into open wounds to eliminate dead space, absorb exudate, or maintain moisture |

---

<table>
<thead>
<tr>
<th>Wound Care Need</th>
<th>Pressure Ulcer Stage 1 or 2</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pruritus</td>
<td>Not usually associated with wound, assess surrounding skin.</td>
<td>If patient reports pruritus, evaluate for contact dermatitis, hypersensitivity, or yeast dermatitis</td>
</tr>
</tbody>
</table>
| Bleeding         | Dressing strategies:  
- Calcium alginate (silver alginate is not hemostatic)  
- Non-adherent dressing  
- Coagulants: gelatin sponge, thrombin  
Topical/local strategies:  
- Sclerosing agent: silver nitrate  
- Antifibrinolytic agent: tranexamic acid  
- Astringents: Alum solution, sucralfate | • Consider checking: platelet count, PT/INR, Vitamin K deficiency  
• Ask: Is transfusion appropriate? Is patient on warfarin?  
• Use topical vasoconstrictors only when bleeding is minimal, oozing, or seeping. |
| Support Surface  | Group 2 Support Surface: Any patient with partial to full thickness ulcers already present  
Group 3 Support Surface: Patient must have large or multiple stage 3 or 4 pressure ulcers on trunk or pelvis, be bedbound, and all alternative measures have failed (criteria to receive Medicare reimbursement) | • Group 2: Dynamic. Powered air flotation beds & pressure reducing air mattress, non-powered advanced pressure reducing mattress  
• Group 3: Dynamic. Air-fluidized bed |
| Pain            | Topically:  
- 2% lidocaine or EMLA® cream 30-60 minutes before dressing change;  
- Morphine in hydrogel (only for open/inflamed wounds)  
Systemically:  
- Pre-medicate 30-60 minutes prior to dressing change with appropriate agent for anxiety and/or for pain.  
- Neuropathic pain (burning, stabbing, stinging, shooting pain): tricyclic, antidepressant, anticonvulsant.  
- Nociceptive pain: appropriate opioid or corticosteroid | • Allow procedural time-outs.  
• Use moisture-balanced dressing  
• Use appropriate irrigation force  
• Avoid adherent dressings  
• Use warm saline irrigation to remove dressing  
• Use contact layer to protect wound bed  
• Complementary therapies, such as music, relaxation, aromatherapy, visualization, medication, can be helpful |
DEBRIDEMENT ALGORITHM: Pressure Ulcers Stage 3 or 4

PRESSURE ULCER

Necrotic Tissue (Slough/Eschar)

No

No Debridement

Yes

Moist?

No

Autolytic
Hydrogel
Transparent Film

Yes

Infection?

No

Autolytic
Alginate
Hydrocolloid

Yes

*Use in conjunction with the appropriate topical antimicrobial

*See Wound Treatment Grid for additional symptom management
*See Types of Debridement Chart for more information
## WOUND TREATMENT GRID: Stable Eschar

<table>
<thead>
<tr>
<th>Wound Care Need</th>
<th>Stable Eschar</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>- Thick, leathery, black or brown crust; nonviable tissue, colonized with bacteria</td>
<td>Stable eschar is defined as firmly adherent, hard, non-infected and dry</td>
</tr>
<tr>
<td><strong>Cleanse</strong></td>
<td>- Paint with antiseptic solution, e.g. povidone-iodine (Betadine®)³</td>
<td>Leave open to air</td>
</tr>
<tr>
<td><strong>Debridement</strong></td>
<td>- Do not debride stable eschar (non-infected, dry)⁵</td>
<td>See Debridement Algorithm</td>
</tr>
<tr>
<td><strong>Dressing</strong></td>
<td>- If on heel, paint with povidone-iodine (Betadine⁴) and leave open to air.</td>
<td></td>
</tr>
<tr>
<td><strong>Infection</strong></td>
<td></td>
<td>Not considered stable if signs of infection are present.</td>
</tr>
<tr>
<td><strong>Malodor</strong></td>
<td></td>
<td>If there’s odor, it’s probably not stable</td>
</tr>
<tr>
<td><strong>Dead Space</strong></td>
<td>N/A</td>
<td>Cannot be determined if eschar is present.</td>
</tr>
<tr>
<td><strong>Pruritus</strong></td>
<td></td>
<td>Not usually associated with wound, assess surrounding skin.</td>
</tr>
<tr>
<td><strong>Bleeding</strong></td>
<td></td>
<td>Not considered stable if bleeding is present</td>
</tr>
</tbody>
</table>
| **Support Surface** | Varies by wound location. If on heel: elevate calves on longitudinal pillows, thereby “floating the heels”, static heel boots or foam boots – not “Moon Boots” | **Group 1:** Static. Mattress, pressure pad or overlay  
**Group 2:** Dynamic. Powered air flotation beds and pressure reducing air mattress, non-powered advanced pressure reducing mattress  
**Group 3:** Dynamic. Air-fluidized bed |
| **Pain**        | Medicate with appropriate agent for anxiety and/or for pain.  
- Neuropathic pain (burning, stabbing, stinging, shooting pain): tricyclic antidepressant, anticonvulsant  
- Nociceptive pain (gnawing, throbbing, tenderness): opioid or corticosteroid |
DEBRIDEMENT ALGORITHM: Eschar

ESCHAR

Stable
Attached
Non-infected
Dry
(e.g. heels, toes, fingers)

No Debridement

Unstable
Wet
Draining
Loose

Follow Wound Specific Algorithm:
- Pressure ulcers
- Radiated skin
- Venous ulcers
- Arterial ulcer
- Malignant wounds

- See wound Treatment Grid for additional symptom management
- See types of Debridement Chart for more information
# WOUND TREATMENT GRID: Arterial or Ischemic Ulcers

<table>
<thead>
<tr>
<th>Wound Care Need</th>
<th>Arterial Ulcer/Ischemic Ulcer</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Shallow well-defined borders, pale wound bed</td>
<td>Usually on tips of toes or between toes but may also be on lateral malleolus</td>
</tr>
</tbody>
</table>
| **Cleanse** | Normal saline or commercial wound cleanser If stable eschar is present, paint with povidone-iodine (Betadine®). | Irrigate with 4-15 psi:  
• Spray bottle: 1.2 psi (inadequate)  
• Piston syringe: 4.2 psi  
• Squeeze bottle with irrigation cap: 4.5 psi  
• 35 mL syringe and 18 gauge needle: 8 psi
– Proper sharps precautions required is using this method |
| **Debridement** | Debridement not recommended unless perfusion status is determined, i.e. toe pressures and transcutaneous oxygen measurements.  
• Autolytic: Hydrogel, alginate, hydrocolloid.  
• If dry, intact non-infected eschar do not remove²⁵ | • See Debridement Algorithm |
| **Dressing** | • Hydrogel  
• Hydrocolloid (do not use if infection is present)  
• Foam  
• If stable eschar is present, leave open to air | • Protect periwound area with a skin barrier film if an adhesive is used  
• Usually minimal exudate |
| **Infection** | • Silver impregnated dressing  
• Consider systemic antibiotic therapy⁴  
• Use topical antibiotics ≤ 14 days to reduce colonization risk | See antimicrobials on Wound Care Products chart, page 42  
May treat empirically  
• MRSQA: cadexomer iodine, mupirocin, ointment, silver dressing  
• Pseudomonas: acetic acid  
• VRE: hydrofera blue, silver dressing  
• MSSA: cadexomer iodine, chlorhexidine, hydrofera blue, mupirocin, silver dressing |
| **Malodor** | • Metronidazole crushed tabs (Flagyl®) to wound bed with dressing changes; use gel (Metrogel®) only if wound bed is dry  
• Charcoal dressing  
• Honey  
• Change hydrocolloid dressing every 24-48 hours | • Wound cleansing aids odor control  
• Change dressing more often to manage odor and/or exudate  
• Hydrocolloid dressings tend to create odor (doesn’t mean infection is present)  
• Environmental strategies:  
  – In room: kitty litter, vanilla extract, coffee grounds, dryer sheets  
  – On dressing: essential oils (wintergreen or lavender) |
| **Dead Space** | Alginate roping, pastes or powders, collagen | Dressing materials placed into open wounds to eliminate dead space, absorb exudate, or maintain moisture. |
| **Pruritus** | Not usually associated with wound, assess surrounding skin. | If patient reports pruritus, evaluate for contact dermatitis, hypersensitivity, or yeast dermatitis |
## WOUND TREATMENT GRID: Arterial or Ischemic Ulcers

<table>
<thead>
<tr>
<th>Wound Care Needed</th>
<th>Arterial Ulcer/Ischemic Ulcer</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bleeding</strong></td>
<td>Dressing strategies:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Calcium alginate (silver alginate is not hemostatic)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Non-adherent dressing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Coagulants: gelatin sponge, thrombin</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Sclerosing agent: silver nitrate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Antifibrinolytic agent: tranexamic acid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Astringents: Alum solution, sucralfate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Consider checking: platelet count, PT/INR, vitamin K deficiency.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Ask: Is transfusion appropriate? Is patient on warfarin?</td>
<td></td>
</tr>
<tr>
<td><strong>Support Surface</strong></td>
<td>N/A. Only pressure ulcers determine use of support surfaces</td>
<td>Medicare reimbursement is based on presence of pressure ulcers, not other wound types.</td>
</tr>
<tr>
<td><strong>Pain</strong></td>
<td>• Pain is often severe-even at rest</td>
<td>Allow procedural time-outs</td>
</tr>
<tr>
<td></td>
<td>• Elevation of extremity may increase pain; dangling legs over side of bed may relieve pain</td>
<td>Use moisture-balanced dressing</td>
</tr>
<tr>
<td></td>
<td>• Consider antiplatelet agents: cilostazol (Pletal®)</td>
<td>Avoid adherent dressings</td>
</tr>
<tr>
<td></td>
<td>• Pre-medicate with appropriate agent for pain and/or anxiety prior to dressing change</td>
<td>Use warm saline irrigation to remove dressing</td>
</tr>
<tr>
<td></td>
<td>• Neuropathic pain (burning, stabbing, stinging, shooting pain): tricyclic antidepressant, anticonvulsant</td>
<td>Complementary therapies, such as music, relaxation, aromatherapy, visualization, meditation, can be helpful.</td>
</tr>
<tr>
<td></td>
<td>• Nociceptive pain (gnawing, throbbing, tenderness): opioid or corticosteroid</td>
<td>Cilostazol (Pletal®) is contraindicated in patients with heart failure – any level of severity.</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>• Characteristics: minimal exudates; infection common, including gangrene</td>
<td>Do not use hot water bottles, heating pads or other thermal devices.</td>
</tr>
<tr>
<td></td>
<td>• Pulses may or may not be present</td>
<td>These ulcers are also known as LEAD-Lower Extremity Arterial Ulcers</td>
</tr>
<tr>
<td></td>
<td>• Thin, fragile skin⁹</td>
<td>Calciphylaxis associated with end stage renal disease (ESRD) see Special Topics, page 47.</td>
</tr>
<tr>
<td></td>
<td>• Ulcer is due to occlusion of one or more arteries</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Use lamb's wool or foam toe sleeves to prevent interdigital friction</td>
<td></td>
</tr>
</tbody>
</table>
DEBRIDEMENT ALGORITHM: Arterial Ulcer

ARterial Ulcer

Do not debride without knowing perfusion status

Necrotic Tissue?

(Slough/Eschar)

No

No Debridement

Yes

Moist?

No

No

Yes

Infection?

No

Yes

Autolytic Hydrogel

Autolytic Hydrocolloid

Autolytic Alginate

*Use in conjunction with the appropriate topical antimicrobial

- See wound Treatment Grid for additional symptom management
- See Types of Debridement Chart for more information
### WOUND TREATMENT GRID: Venous Ulcers

<table>
<thead>
<tr>
<th>Wound Care Need</th>
<th>Arterial Ulcer/Ischemic Ulcer</th>
<th>Comments</th>
</tr>
</thead>
</table>
| Description     | • Usually shallow with irregular edges; often heavy exudates  
                  • 70-90% of leg ulcers are venous ulcers | Characteristics:  
                  • Usually lower legs between ankles and knees  
                  • Ruddy skin; edema; pulses usually present |
| Cleanse         | Normal saline or commercial wound cleanser | Irrigate with 4-15 psi:  
                  • Spray bottle: 1.2 psi (inadequate)  
                  • Piston syringe: 4.2 psi  
                  • Squeeze bottle with irrigation cap: 4.5 psi  
                  • 35 mL syringe and 18 gauge needle: 8 psi1  
                  – Proper sharps precautions required is using this method |
| Debridement     | • Autolytic: alginate if wound is moist; hydrogel if wound is dry  
                  • Sharp debridement  
                  • Enzymatic debridement8: collagenase (Santyl®) | • See Debridement Algorithm  
                  • Consider checking an ankle brachial index (ABI) for chronic, non-healing leg ulcers.  
                  • Silver inactivates collagenase; therefore, do not use silver and collagenase together. |
| Dressing        | • Foam, alginate®, hydrogel  
                  • Contact layer to protect wound bed | • Protect periwound area with a skin barrier film if an adhesive is used, otherwise protect periwound area from maceration with barrier cream or ointment  
                  • All lower extremity wounds should be bandaged due to heavy exudates, to minimize infection  
                  • Usually moderate to heavy exudate |
| Infection       | • Topical: Silver dressing, antiseptics  
                  • Use topical antibiotics ≤ 14 days to reduce colonization risk  
                  • Systemic antibiotics | See antimicrobials on Wound Care Products chart, page 42  
                  May treat empirically  
                  • MRSA: cadexomer iodine, mupirocin, ointment, silver dressing  
                  • Pseudomonas: acetic acid 0.25%  
                  • VRE: hydrofera blue, silver dressing  
                  • MSSA: cadexomer iodine, chlorhexidine, hydrofera blue, mupirocin, silver dressing10 |
| Malodor         | • Metronidazole crushed tabs (Flagyl®) to wound bed with dressing changes; use gel (Metrogel®) only if wound bed is dry  
                  • Charcoal dressing  
                  • Honey  
                  • Increase frequency of dressing change | • Wound cleansing aids odor control  
                  • Change dressing more often to manage odor and/or exudate  
                  • Hydrocolloid dressings tend to create odor (doesn’t mean infection is present)  
                  • Environmental strategies:  
                      – In room: kitty litter, vanilla extract, coffee grounds, dryer sheets  
                      – On dressing: essential oils (wintergreen or lavender |
| Dead Space      | Alginate roping, pastes or powders, collagen |                         |
# WOUND TREATMENT GRID: Venous Ulcers

<table>
<thead>
<tr>
<th>Wound Care Need</th>
<th>Arterial Ulcer/Ischemic Ulcer</th>
<th>Comments</th>
</tr>
</thead>
</table>
| **Pruritus**    | Topical:                      | • Due to skin changes with chronic venous insufficiency, dermatitis and pruritus are common  
• Skin changes may mimic cellulitis. Avoid antibiotics unless known bacterial infection is present  
• Stasis dermatitis usually responds to moisturizer  
• Corticosteroids may be needed to reduce pruritus, usually topical. May use burst of oral corticosteroids if severe |
|                 | • Apply unscented, lanolin-free hydrophilic moisturizers: Lubriderm®, Eucerin®, Keri®, Aquaphor®  
• Corticosteroid creams (start with OTC first): Cortaid®, Kenalog® |

| **Bleeding**    | Dressing strategies:          | • Consider checking: platelet count, PT/INR, Vitamin K deficiency  
• Ask: is transfusion appropriate? Is patient on warfarin? |
|                 | • Calcium alginate (silver alginate is not hemostatic)  
• Non-adherent dressing  
• Coagulants: gelatin sponge, thrombin  
Topical/local strategies:  
• Sclerosing agent: silver nitrate  
• Antifibrinolytic agent: tranexamic acid  
• Astringents: Alum solution, sucralfate |

| **Support Surface** | N/A. Only pressure ulcers determine use of support surfaces | • Medicare reimbursement is based on presence of pressure ulcers, not other wound types |

| **Pain** | • Usually a dull aching pain or heaviness that is relieved as edema decreases  
• Elevation of the extremity may decrease pain even without presence of edema  
• Pre-medicate with appropriate agent for pain and/or anxiety prior to dressing change  
• Neuropathic pain (burning, stabbing, stinging, shooting pain): tricyclic antidepressant, anticonvulsant  
• Nociceptive pain (gnawing, throbbing, tenderness): opioid or corticosteroid | • Allow procedural time-outs  
• Use moisture-balanced dressing  
• Use appropriate irrigation force  
• Avoid adherent dressings  
• Use warm saline irrigation to remove dressing  
• Complementary therapies, such as music, relaxation, aromatherapy, visualization, meditation, can be helpful. |

| **Other** | • Shallow wound base with granulation tissue—rarely necrotic  
• Edema is one of the early signs  
• Hyper pigmentation of calves | • Compression therapy is usually part of venous ulcer management. For additional information see Special Topics, page 52 |
DEBRIDEMENT ALGORITHM: Venous Ulcer

VENOUS ULCER

Necrotic Tissue? (Slough/Eschar)

- No
  
  No Debridement

- Yes

Moist?

- No
  
  Autolytic Hydrogel

- Yes

Infection?

- No
  
  Autolytic Alginate

- Yes
  
  Autolytic* Alginate
  Sharp
  Enzymatic
  Collagenase

*Use in conjunction with the appropriate topical antimicrobial

- See wound Treatment Grid for additional symptom management
- See Types of Debridement Chart for more information
## WOUND TREATMENT GRID: Radiated Skin

<table>
<thead>
<tr>
<th>Wound Care Need</th>
<th>Arterial Ulcer/Ischemic Ulcer</th>
<th>Comments</th>
</tr>
</thead>
</table>
| **Description** | • Damaged by radiation therapy; appears burned, crusty, peeling, or friable  
• Usually fairly superficial, but is possible for the wound to be deeper | • Any radiated area of body  
• May include hair loss to the area, decreased perspiration, superficial changes to blood vessels, edema, and scarring<sup>12</sup> |
| **Cleanse** | Use lukewarm water and mild non-alkaline soap: baby soap, Dove<sup>®</sup>, or Ivory<sup>®</sup><sup>11</sup> | • Hydrogel for desquamation (removal of scaling)  
• Normal saline soaks to loosen crusting  
• Do not rub skin-pat dry |
| **Debridement** | • Don’t usually debride | • See Debridement Algorithm  
• Consult physician re: surgical debridement if appropriate |
| **Topical Treatment** | • Apply unscented, lanolin-free hydrophilic moisturizers: Lubriderm®<sup>®</sup>, Eucerin®<sup>®</sup>, Keri®<sup>®</sup>, Aquaphor®<sup>®</sup><sup>11</sup> | • Protect periwound area with a skin barrier film if an adhesive is used  
• Cover wound to minimize evaporation, pain, and risk of infection  
• Apply moisturizer 2-3 times/day  
• Protect from sun with SPF 15 or higher  
• Protect from friction, rubbing, or tight clothes  
• Protect from extreme heat/cold, cuts, and scrapes |
| **Infection** | • Topical antibiotics helpful as this damaged tissue is less able to resist or fight infection<sup>12</sup>  
• Use topical antibiotics ≤14 days to reduce colonization risk | See antimicrobials on Wound Care Products chart, page 42  
May treat empirically  
• MRSA: cadexomer iodine, mupirocin, ointment, silver dressing  
• Pseudomonas: acetic acid 0.25%  
• VRE: hydrofera blue, silver dressing  
• MSSA: cadexomer iodine, chlorhexidine, hydrofera blue, mupirocin, silver dressing<sup>10</sup> |
| **Malodor** | • Honey  
• Topical metronidazole (Flagyl®) | |
| **Dead Space** | N/A | |
| **Pruritus** | • Topical corticosteroid creams  
• Normal saline compresses  
• Cool mist humidifier  
• Cooled hydrogel sheets | If patient reports pruritus, evaluate for contact dermatitis, hypersensitivity, or yeast dermatitis |
| **Bleeding** | • Not likely, but may occur | Encourage gentle cleansing and moisturizers |
| **Support Surface** | N/A. Only pressure ulcers determine use of support surfaces | Medicare reimbursement is based on presence of pressure ulcers, not other wound types |
| **Pain** | • Aloe Vera gel may soothe and cool radiated skin  
• Morphine in hydrogel (only for open/inflamed wounds)<sup>4</sup> | • Allow procedural time-outs  
• Use moisture-balanced dressing  
• Use appropriate irrigation force  
• Avoid adherent dressings or clothing  
• Complementary therapies, such as music, relaxation, aromatherapy, visualization, meditation, can be helpful. |
| **Other** | • Do not use petroleum-based products, products with perfumes or alpha-hydroxy acids<sup>11</sup> | |

DEBRIDEMENT ALGORITHM: Radiated Skin

RADIATED SKIN

Dry Tissue? (crusting)

Yes

Lanolin-free cream
NS soaks
Lukewarm water
Mild soap

No

No Debridement

Sharp
Consult Physician

- See wound Treatment Grid for additional symptom management
- See Types of Debridement Chart for more information
# WOUND TREATMENT GRID: Fungating/Malignant Wounds

<table>
<thead>
<tr>
<th>Wound Care Need</th>
<th>Fungating/Malignant</th>
<th>Comments</th>
</tr>
</thead>
</table>
| **Description** | • May be primary cutaneous tumor, metastatic disease, or malignant transformation of wound<sup>13</sup> | • Exudate, odor, and bleeding often contribute to psychosocial issues  
• Healing is rare  
• Marjolin ulcer: malignant transformation of a chronic wound, occurs in 2% of chronic wounds<sup>13</sup> |
| **Cleanse** | Normal saline or commercial wound cleanser  
Irrigate instead of swabbing to minimize bleeding | Irrigate with 4-15 psi:  
• Spray bottle: 1.2 psi (inadequate)  
• Piston syringe: 4.2 psi  
• Squeeze bottle with irrigation cap: 4.5 psi  
• 35 mL syringe and 18 gauge needle: 8 psi<sup>1</sup>  
– Proper sharps precautions required is using this method |
| **Debridement** | • Autolytic: transparent dressing, alginate; hydrogel if wound is dry  
• Enzymatic: collagenase (Santyl<sup>®</sup>) | See Debridement Algorithm |
| **Dressing** | • Foam, alginate, hydrofiber based on wound need  
• Moisturizer is usually contraindicated  
• Avoid hydrating gels & hydrocolloids<sup>14</sup> | Protect periwound area with a skin barrier film if an adhesive is used |
| **Infection** | • Topical:  
• Mupirocin ointment  
• Silver dressing  
• Antiseptics*  
• Use topical antibiotics ≤ 14 days to reduce colonization risk | See antimicrobials on Wound Care Products chart, page 42  
May treat empirically  
• MRSA: cadexomer iodine, mupirocin, ointment, silver dressing  
• Pseudomonas: acetic acid 0.25%  
• VRE: hydrofera blue, silver dressing  
• MSSA: cadexomer iodine, chlorhexidine, hydrofera blue, mupirocin, silver dressing<sup>10</sup>  
• Rinse wound bed with normal saline after using any antiseptic cleanser to minimize toxic effects |
| **Malodor** | • Metronidazole crushed tabs (Flagyl<sup>®</sup>) to wound bed with dressing changes; use gel (Metrogel<sup>®</sup>) only if wound bed is dry  
• Charcoal dressings  
• Honey  
• Increase frequency of dressing change | • Wound cleansing & debridement aid odor control  
• Change dressing more often to manage odor and/or exudate  
• Environmental strategies:  
• In room: kitty litter, vanilla extract, coffee grounds, dryer sheets  
• On dressing: essential oils (wintergreen or lavender) |
| **Dead Space** | N/A | |
| **Pruritus** | • Not usually associated with wound, assess surrounding skin | • If patient reports pruritus, evaluate for contact dermatitis, hypersensitivity, or yeast dermatitis |
## WOUND TREATMENT GRID: Fungating/Malignant Wounds

| Bleeding | Radiation therapy (short course) may be appropriate for bleeding tumors of the breast or skin  
Dressing strategies:  
- Calcium alginate (silver alginate is not hemostatic)  
- Non-adherent dressing  
- Coagulants: gelatin sponge, thrombin  
- Acute event dressing: Quikclot®, Celox®  
Topical/local strategies:  
- Sclerosing agent: silver nitrate  
- Antifibrinolytic agent: tranexamic acid  
- Astringents: Alum solution, sucralfate  
- Epinephrine (1:1000) spray  
- Topical Thrombin  
- Oxymetazoline (Afrin®) spray  
- Oral: Tranexamic acid  
| Tissue is friable and predisposed to bleeding  
- Prepare patient/caregivers for possible hemorrhage (dark towels & bed linens)  
- Consider checking: platelet count, PT/INR, vitamin K deficiency  
- Ask: Is transfusion appropriate? Is patient on warfarin? |
| Support Surface | N/A. Only pressure ulcers determine use of support surfaces  
| Medicare reimbursement is based on presence of pressure ulcers, not other wound types |
| Pain | Topical  
- 2% Lidocaine or EMLA® cream 30-60 min before dressing change³  
- Ketamine (see Other Therapies, p 53)  
- Morphine in hydrogel (only for open/inflamed wounds)⁴  
Systemic:  
- Pre-medicate with appropriate agent for pain and/or anxiety prior to dressing change  
- Neuropathic pain (burning, stabbing, stinging, shooting pain): tricyclic antidepressant, anticonvulsant  
- Nociceptive pain (gnawing, throbbing, tenderness): opioid or corticosteroid  
| Allow procedural time-outs  
- Use moisture-balanced dressing  
- Use appropriate irrigation force  
- Avoid adherent dressings  
- Use warm saline irrigation to remove dressing  
- Contact layer protects wound bed  
- Complementary therapies, such as music, relaxation, aromatherapy, visualization, meditation, can be helpful. |
DEBRIDEMENT ALGORITHM: Fungating/Malignant Wounds

1. **FUNGATING/MALIGNANT WOUND**
2. **Nectrotic Tissue?**
   - **(Slough/Eschar)**
     - No: No Debridement
     - Yes: Moist?
       - No: Autolytic Hydrogel Transparent Film
       - Yes: Autolytic Alginate Enzymatic Collagenase

- See wound Treatment Grid for additional symptom management
- See Types of Debridement Chart for more information
References Chapter 6