**DEFINITION**
Any lesion caused by unrelieved pressure that results in damage to underlying soft tissue when the tissue is compressed between a bony prominence and external surface over a prolonged period of time.

**BACKGROUND**
- Time for development is variable
- Affects 1 million adults annually
- CMS does not pay for hospital-acquired stage III or IV pressure ulcers

**SCREENING**
Examine high-risk sites daily: heels, sacrum, scapular spines

**HPI**
- Inciting event or injury
- Duration
- Pain
- Location
- Drainage
- Treatments to date

**POTENTIAL TRIGGERS OR RISK FACTORS**

<table>
<thead>
<tr>
<th>INTRINSIC RISK FACTORS</th>
<th>EXTRINSIC RISK FACTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physiologic factors or disease states that increase the risk of pressure ulcers</td>
<td>External factors that damage the skin</td>
</tr>
<tr>
<td>Age ≥70</td>
<td>Pressure, friction, shear forces</td>
</tr>
<tr>
<td>Nutritional status</td>
<td>Moisture</td>
</tr>
<tr>
<td>Decreased arteriolar blood pressure</td>
<td>Urinary or fecal incontinence</td>
</tr>
</tbody>
</table>

Resources: Braden (http://www.bradenscale.com) and Norton (www.woundcarehelpline.com/NortonScale.pdf)

**PAST MEDICAL HX**
- Impaired mobility
- Diabetes
- Congestive heart failure
- Anemia
- Tobacco use
- Cognitive impairment
- Fever
- Lymphoma
- Low BMI/malnutrition
- Stroke
- Sepsis
- Hypoalbuminemia
- Restraints
- Pneumonia
- Hypotension
- Dry skin
- Incontinence
- Malignancy
- Renal failure
- History of pressure ulcers
- Impaired mobility
- Malignancy
- Renal failure
- History of pressure ulcers

**SOCIAL HX**
Living situation, caregiver stress, substance abuse, history of abuse or neglect

**MEDICATIONS**
Sedating medications

**PHYSICAL EXAM**
- Location—Describe and pay attention to high-risk sites
- Staging
  - Stage I: Persistent erythema of intact skin. In darker skin tones, may appear with red, blue, or purple.
  - Stage II: Partial-thickness skin loss involving epidermis, dermis, or both. Ulcer is superficial and presents as an abrasion, blister, or shallow crater.
  - Stage III: Full-thickness skin loss involving damage or necrosis of subcutaneous tissue that may extend down to, but not through, underlying fascia.
  - Stage IV: Full-thickness skin loss with extensive destruction, tissue necrosis, or damage to muscle, bone, or supporting structures (eg, tendon, joint capsule). Unstageable: Full-thickness tissue loss in which the base of the ulcer is covered by slough (yellow, tan, gray, green, or brown) and/or eschar in wound bed
- Area—Measure diameter for circular lesions vs. length for irregularly shaped lesions
- Depth—Measure depth from plane of skin and probe for undermining
- Drainage—Describe amount, odor, purulence
- Necrosis—Describe; has it occurred in the presence of a dressing?
- Granulation—Identify areas of granulation or regression, to document healing
- Cellulitis
  - Assess for tenderness, warmth, and redness
  - Differentiate from a thin rim of erythema surrounding most healing wounds
LABS
- Complete blood count with differential
- Pre-albumin
- Possible cultures
- Hemoglobin A1c

MANAGEMENT: DEBRIDEMENT

<table>
<thead>
<tr>
<th>TYPE</th>
<th>METHOD</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical</td>
<td>Wet-to-dry irrigation, hydrotherapy</td>
<td>Removes dead and live tissue; painful</td>
</tr>
<tr>
<td>Surgical/Sharp</td>
<td>Scalpel, scissor, or laser to remove dead</td>
<td>Quick, effective; use for infection; painful</td>
</tr>
<tr>
<td></td>
<td>tissue</td>
<td></td>
</tr>
<tr>
<td>Enzymatic</td>
<td>Topical agent to dissolve dead tissue</td>
<td>Use only if there is no infection; may damage skin</td>
</tr>
<tr>
<td>Autolytic</td>
<td>Allows dead tissue to self-digest</td>
<td>Use if other methods not tolerated and no infection; has a delayed effect</td>
</tr>
<tr>
<td>Biosurgery</td>
<td>Larvae to digest dead tissue</td>
<td>Quick, effective; good option when surgical management is not an option</td>
</tr>
</tbody>
</table>

MANAGEMENT: DRESSINGS

<table>
<thead>
<tr>
<th>NAME</th>
<th>EXAMPLE(S)</th>
<th>INDICATION(S)</th>
<th>CONTRAINDICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transparent film</td>
<td>Tegaderm, Bioclusive</td>
<td>Stages I and II—protects from friction</td>
<td>Skin tears, draining, or suspected infection</td>
</tr>
<tr>
<td>Foam island</td>
<td>Alleyn, Lyofoam</td>
<td>Stages II and III</td>
<td>Excessive exudate; dry, crusted wound</td>
</tr>
<tr>
<td>Hydrocolloid</td>
<td>Duoderm, Tegasorb, Nu-Derm</td>
<td>Stages II and III</td>
<td>Poor skin integrity, infection, wound that needs packing</td>
</tr>
<tr>
<td>Petroleum-based nonadherent</td>
<td>Vaseline-impregnated gauze</td>
<td>Stages II and III, graft sites</td>
<td>---</td>
</tr>
<tr>
<td>Alginate</td>
<td>Sorbsan, Kaltostat, Algosteril, AlgiDerm</td>
<td>Stages III and IV, excessive drainage</td>
<td>Dry or superficial wound with maceration</td>
</tr>
<tr>
<td>Hydrogel, amorphous</td>
<td>IntraSite, SoloSite, Restore gels</td>
<td>Stages II, III and IV, but must combine with gauze dressing</td>
<td>Maceration or excess exudate</td>
</tr>
<tr>
<td>Hydrogel, sheet</td>
<td>Vigilon, Restore impregnated gauze</td>
<td>Stage II or skin tears</td>
<td>Maceration, moderate to heavy exudate</td>
</tr>
<tr>
<td>Gauze packing</td>
<td>Gaue pads, Fluffed Kerlix, plain Nu Gauze</td>
<td>Stages III and IV; deep wounds, especially those with tunneling or undermining</td>
<td>---</td>
</tr>
<tr>
<td>Silver dressing</td>
<td>Silvercel, Silvadene, Aquacel, Acticoat</td>
<td>Malodorous wounds, exudative wounds, and those highly suspicious for critical bacterial load</td>
<td>Systemic infection, cellulitis, fungus, interstitial nephritis, skin necrosis, concurrent use with proteolytic enzymes</td>
</tr>
</tbody>
</table>

MANAGEMENT: INFECTION CONTROL
- Wound cleansing and dressings
- Consider topical antibiotics if there is failure to heal or persistent exudate after 2 weeks
- Avoid routine swabs, but cultures may assess bacterial burden
- If not healing, consider cellulitis or osteomyelitis

MANAGEMENT: OTHER
- Ensure adequate nutrition; weak evidence for supplements
- Minimize mechanical loading using appropriate support surfaces (static vs. dynamic)
- Improve mobility if possible; frequent turning
- Monitoring: No reverse staging; rather, “This is a healing stage___”, use the Pressure Ulcer Scale for Healing or the Pressure Sore Status Tool (http://www.npau.org/PDF/push3.pdf)

REFERRAL
- Surgical repair may be indicated for stage III and IV ulcers


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