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Pressure Injury Assessment and Management

Pressure injuries affect nearly 10% of hospitalized adults, leading to significant pain, infection risk, and unreimbursed costs for Stage 3 and 4 events. Most pressure injuries are preventable through vigilant nursing care and evidence-based bundles. With appropriate care, the majority of pressure-induced skin and soft tissue injuries should heal within an expected timeframe (Berlowitz, 2026b).

Definition and Risk Factors

Changes were made to the National Pressure Injury Advisory Panel (NPIAP) system favoring the use of the term "pressure injury" instead of "pressure ulcer" to recognize the fact that lesser degrees of skin damage due to pressure may not be associated with skin ulceration (stage 1) and that deep tissue pressure injury can occur without overlying skin ulceration (Berlowitz, 2026b). Pressure-induced skin and soft tissue injuries are areas of localized damage to the skin and/or underlying tissue, usually over a bony prominence, as a result of pressure or pressure in combination with shear (e.g., sacrum, calcaneus, ischium) (Berlowitz, 2026b). Superficial moisture-induced lesions, even if located over a bony prominence, should not be labeled as pressure injuries, and neither should skin tears, tape burns, perineal dermatitis, or excoriation (Berlowitz, 2026b).

Risk Factors for Pressure Injuries (Berlowitz, 2026a)	
Risk Factor	**Clinical Considerations**
Immobility	Most important host factor that contributes to pressure injuries
Malnutrition	Assess your patient's dietary intake and weight; lower body mass index (BMI less than 25 kg/m^2) increases risk.
Reduced Perfusion	Due to volume depletion, hypotension, vasomotor failure, and vasoconstriction (shock, heart failure, or medications); pressure applied to skin for less than two hours may cause severe damage.
Sensory Loss	Due to neurologic diseases such as dementia, delirium, spinal cord injury and Neuropathy
Microclimate	Temperature, humidity, and airflow at the skin surface (NPIAP, 2019)
Comorbidities	Cerebrovascular disease, cardiovascular disease, diabetes, and incontinence

Risk Assessment:

- Use a structured risk assessment tool, such as the Braden scale, to identify all patients for their risk of pressure injury as soon as possible after admission.
- Risk assessment, which includes a comprehensive history and physical examination, should identify patients at risk for pressure-induced skin and soft tissue injuries who will benefit from preventive measures as well as potentially correctable factors (Berlowitz, 2025).
- Identify additional risk factors such as (Berlowitz, 2026a):
    - Immobility
    - Malnutrition
    - Decreased skin perfusion with factors include volume depletion, hypotension, vasomotor failure, and vasoconstriction (secondary to shock, heart failure, and medications).
    - Sensory Loss that is accompanied with dementia, delirium, spinal cord injury, and peripheral

neuropathy

- Repeat the risk assessment at regular intervals and with any change in condition.
  - Acute care: every shift
  - Long term care: weekly for 4 weeks, then quarterly
  - Home care: at every nurse visit
- Develop a care plan based on the risk assessment; prioritize and address identified issues.

Pressure Injury Classification

Use the staging system below to categorize the injury appropriately. Wounds should be staged based on the deepest area.
Note: Changing the stage as healing occurs, or reverse staging, is not a recommended practice (Berlowitz, 2023a).

Stage 1 Pressure Injury: Non-blanchable erythema of intact skin

- Intact skin with a localized area of non-blanchable erythema; may look different in dark pigmented skin.
- Blanchable erythema or changes in sensation, temperature, or firmness may precede visual changes.
- Does not include purple or maroon color changes; these may indicate deep tissue pressure injury.

Stage 2 Pressure Injury: Partial-thickness skin loss with exposed dermis

- Wound bed is viable, pink or red, moist, and may be intact or a ruptured serum-filled blister.
- Adipose (fat) and deeper tissues are not visible; granulation tissue, slough and eschar are not present.
- Commonly results from adverse microclimate and shear in the skin over the pelvis and heel.

Note: Do not use this stage to describe moisture associated skin damage (MASD) including incontinence-associated dermatitis (IAD), intertriginous [area where two skin areas may rub] dermatitis (ITD), medical adhesive-related skin injury (MARSI), or traumatic wounds (skin tears, burns, abrasions).

Stage 3 Pressure Injury: Full thickness skin loss

- Adipose (fat) is visible in the ulcer; granulation tissue and epibole (rolled wound edges) are present.
- Slough and/or eschar may be visible; if slough/eschar covers the entire wound base, this is an unstageable pressure injury.
- Undermining and tunneling may be present.
- Depth of tissue damage varies by anatomical location (areas high in adipose may develop deep wounds).
- Fascia, muscle, tendon, ligament, cartilage and/or bone are not exposed.

Stage 4 Pressure Injury: Full thickness skin and tissue loss

- Exposed fascia, muscle, tendon, ligament, cartilage, or bone in the ulcer is present.

- Slough or eschar may be present; if slough/eschar covers the entire wound base, this is an unstageable pressure injury.
- Epibole, undermining, and tunneling often occur which may underestimate the extent of the injury.
- Depth of tissue damage varies by anatomical location (areas high in adipose may develop deep wounds).
- Ulcers located on the bridge of nose, ear, occiput, and malleus may be shallow as these areas do not have subcutaneous tissue.

Unstageable Pressure Injury: Obscured full-thickness skin and tissue loss

- Full thickness tissue loss; extent of tissue damage cannot be confirmed because base of the ulcer is covered by slough and/or eschar.
- If slough or eschar is removed, a Stage 3 or 4 pressure injury will be revealed.
- Stable (dry, adherent, intact) eschar on the heel or ischemic limb should not be softened or removed.

Deep Tissue Pressure Injury (DTPI): Persistent non-blanchable deep red, maroon, or purple discoloration

- Intact or non-intact skin with area of persistent non-blanchable deep red, maroon, purple discoloration, or epidermal separation revealing a dark wound bed or blood-filled blister.
- Pain and temperature change often precede skin color changes.
- Discoloration may appear differently in darkly pigmented skin.
- Injury results from intense and/or prolonged pressure and shear forces between bone and muscle.
- If necrotic tissue, subcutaneous tissue, granulation tissue, fascia, muscle, or other underlying structures are visible, this indicates a full thickness pressure injury (unstageable, stage 3 or stage 4).
- This stage should not be used to describe vascular, traumatic, neuropathic, or dermatologic conditions.
- May be difficult to detect in patients with dark skin; assess for painful, firm or spongy, boggy, warm, or cool skin compared with the surrounding tissue (Berlowitz, 2026b).

Medical Device-Related Pressure Injury

- Results from devices used for diagnostic or therapeutic purposes.
- Injury generally takes the pattern or shape of the device and should be staged using the staging system.

Mucosal Membrane Pressure Injury

- Found on mucous membranes with prior medical device use at the location of the injury.
- Due to the anatomy of the tissue, these ulcers cannot be staged using the NPIAP staging system.

Pressure Injury Prevention

General Skin Care and Assessment (Berlowitz, 2025)

- Obtain patient history: assess for connective tissue disorders and other chronic diseases, previous surgeries, and factors limiting mobility; current medications, allergies, past therapies (radiation or chemotherapy) and tobacco and alcohol use.

- Perform physical examination: inspect all areas of the skin as soon as possible upon admission for signs of pressure injury, especially non-blanchable erythema.
    - Examine entire skin surface for pressure ulcers, epidermal excoriations, rashes, maceration, edema, and old scars.
    - Assess skin temperature, color, turgor, moisture, and integrity. Record any changes as soon as they are identified.
    - In darkly pigmented skin, look for changes in skin tone, skin temperature and tissue consistency compared to adjacent skin.
- Assess pressure points, such as the sacrum, coccyx, buttocks, heels, ischium, trochanters and elbows, and beneath medical devices.
- Subepidermal Moisture (SEM) scanning is an emerging non-invasive technology used to detect microscopic tissue edema and cellular damage up to five days before a pressure injury becomes visible to the naked eye. By providing an objective numerical "Delta" score, it allows for targeted early intervention and overcomes the clinical challenge of identifying Stage 1 erythema on darker skin tones (Moore, 2022).
- Cleanse skin promptly after episodes of incontinence.
- Use skin cleansers that are pH balanced for the skin; avoid hot water.
- Avoid disturbing stable, hard, dry eschar in ischemic limbs or heels unless infection suspected.
- Apply skin moisturizers daily on dry skin.
- Apply a barrier product to protect skin from moisture.
- Avoid vigorous massage over bony prominences.
- Avoid positioning the patient on an area of erythema or pressure injury.

Nutrition (Berlowitz, 2026b)

- Use a valid tool to assess the patient's risk for malnutrition.
- Assess oral, enteral and parenteral intake and refer at-risk patients to a registered dietitian/nutritionist; assessment includes protein and caloric intake, hydration status, serum albumin and/or prealbumin, and total lymphocyte count.
- Support patients with adequate fluid intake and a balanced diet and correct any nutritional deficiencies.
- Assess adequacy of oral, enteral, and parenteral intake. The minimum protein intake target is 1.25 to 1.5 g/kg/day.
- Assess weight changes over time.
- Nutritional supplements are only recommended when deficiencies are present, or if nutritional intake is not optimal.

Repositioning and mobilization (Berlowitz, 2025)

- When possible, encourage mobility.
    - Immobilized patients may benefit from physical therapy.
    - Limit sedatives that contribute to immobility.
    - In critically ill patients, reposition using slow, gradual turns to allow time for stabilization of hemodynamic and oxygenation status.
- Turn and reposition all at-risk patients, unless contraindicated; schedule frequency based on the

support surface in use, the tolerance of skin for pressure and the patient's preferences.
    - General recommendation is to reposition at least every two hours.
    - Chair-bound patients who are weak or immobile should be repositioned every hour.
    - Lengthen the turning schedule at night to allow the patient to sleep.
- When turning, place the patient in a 30-degree (or less) side lying position, and ensure the sacrum is off the bed.
- Assess the level of immobility, exposure to shear, skin moisture, perfusion, body size and weight of the patient when choosing a support surface.
- Continue to reposition the patient when placed on any support surface.
- Use a breathable incontinence pad when using microclimate management surfaces.
- Use pressure redistributing cushions for patients sitting in chairs or wheelchairs.
- If the patient cannot be moved or is positioned with the head of the bed elevated over 30 degrees, place a polyurethane foam dressing on the sacrum.
- Place pillows or foam wedges between the ankles and knees if patients have no mobility in these areas.
- Elevate heels off bed or use polyurethane foam dressings on patients at high-risk for heel ulcers.
- Place thin foam or breathable dressings under medical devices such as percutaneous feeding tube flanges.
- Encourage mobility, provide physical therapy, and limit sedative medications, if possible.

Basic Wound Care (Berlowitz, 2026b)

Wound Care Recommendations by Stage	
Stage	**Dressing and Treatment**
Stage 1	• Cover with transparent film for protection • Stage 1 can easily advance to Stage 2 without intervention. Implement intensive preventative measures to avoid progression of injury.
Stage 2	• For wounds with heavy exudate or chronic fluid build-up, an absorptive dressing (foams and alginates) may help absorb excess fluid and promote wound healing. • For dry wounds, if no infection is present, utilize a dressing that maintains a moist environment to promote wound healing. These include saline-moistened gauze, transparent films, and occlusive dressings such as hydrocolloids, and hydrogels. • Avoid wet-to-dry dressings.
Stage 3 and 4	• Treat infection if present. • Debride necrotic tissue and cover with appropriate dressing. • Non-surgical forms of debridement include mechanical (irrigation), enzymatic, and biologic. • Surgical debridement is needed for extensive necrosis or thick eschar. • Sharp debridement should not be used over the heel due to proximity to the bone. • Discontinue debridement once all necrotic tissue has been removed and granulation tissue is present.

General wound care recommendations

- Change dressings once a day or every other day, as prescribed.
- Document wound size (length, width, and depth) in centimeters or millimeters with dressing changes.
- Assess and document pain using a pain scale such as the 0-10 intensity numeric rating scale.
- Manage pain with oral non-opioid medications for mild pain and opioid analgesics for moderate to severe pain. Administer pain medication prior to dressing changes and debridement.
- Culture wounds and treat infections with antibiotics, as prescribed.
- Evaluate patients with deep wounds for osteomyelitis.
- Monitor patient's progress.
- Provide psychosocial support.
- Consult with wound care department or specialist.
- Repositioning and mobilization as outlined above.

Adjunctive Therapies (Berlowitz, 2026b)

- Negative pressure wound therapy (NPWT) promotes wound healing by increasing blood flow, decreasing edema, and promoting growth of granulation tissue. *(See also: Nursing Pocket Card: Guide to Negative Pressure Wound Therapy)*
- For non-healing pressure injuries, consider collagen dressings, platelet-rich plasma, or platelet-derived growth factor, but evidence is limited.
- Administer pulsed current electrical stimulation to facilitate wound healing in recalcitrant Stage II pressure injuries and Stage III or IV pressure injuries.
- Ultrasound and hyperbaric oxygen therapy (HBOT) may be beneficial, but studies are limited.
- Topical agents, such as becaplermin gel, phenytoin, sucralfate, and medicinal honey, may support healing in stage 2 ulcers, but evidence is limited.
- Surgical wound closure may be appropriate for some patients.
    - Procedures include skin grafts, skin flaps, or myocutaneous flap.
    - Wound should be free of necrotic tissue and infection.

Documentation

Assess skin daily for pressure injuries, rashes, moisture, maceration, edema and changes in temperature and tissue consistency. Documentation of pressure injuries should occur with each dressing change and include the following:

- Location – in relation to bony prominence on the side of the body that is involved
- Category/stage – degree of tissue injury
- Size – measure length, width and depth in centimeters or millimeters
- Presence of sinus tracts/tunneling and undermining
- Tissue types and color
    - Granulation – moist, pink, red healing tissue
    - Slough – moist, fibrinous yellow, tan, or gray tissue

  - Necrotic/eschar – brown/black, dry, thick, and leathery
- Exudate – color, character, odor, amount, and type (serous, sanguineous, or purulent)
- Wound edge and presence of epithelialization (epithelial cell growth across the wound surface)
- Surrounding skin – assess for color changes (erythema, cyanosis, bruising), temperature, induration, tenderness, trauma, irritation, or drainage (redness, maceration, erosion)
- Status of the dressing if present
- Pain – assess using a valid and reliable pain scale
- Complications, such as infection
- Re-positioning and timing schedule

Education (Berlowitz, 2025)

- Teach patients and their family members about the risk for pressure injury and risk reduction interventions.
- Encourage smoking cessation.
- Instruct patients and family members to optimize nutrition. Educate them about the importance of adequate protein intake and maintaining a healthy BMI.
- For diabetic patients, encourage adherence to medications, dietary restrictions, and glucose monitoring.

Pearls (Berlowitz, 2025)

- Sufficient staffing levels are necessary for effective prevention. Prevention requires a coordinated effort of multiple disciplines.
- When an ulcer does occur, problems contributing to its development should be identified and methods for solving these problems implemented.

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