



Pressure Injuries

Mostly preventable, routinely mis-staged · the one wound where the instinct to clean things up can do harm

Stages never run backwards
and stable heel eschar stays

STAGING NPIAP 2016: "pressure INJURY", not ulcer, because Stage 1 and DTPI occur under INTACT skin

Stage	Defining feature	The distinction that gets missed
Stage 1	INTACT skin, non-blanchable erythema	Blanchable redness is NOT Stage 1 -it is normal reactive hyperemia. Δ In darkly pigmented skin the color change may not be visible at all: compare temperature, firmness and tenderness to surrounding skin, which is why these are systematically underdetected
Stage 2	Partial thickness, exposed dermis -shallow pink/red moist bed, or intact/ruptured serum blister	Slough and eschar are NEVER present in Stage 2. If you see either, it is deeper. Heavily over-used: moisture damage, skin tears and tape injuries all get miscalled Stage 2
Stage 3	Full thickness, subcutaneous FAT visible; slough/eschar may be present but not obscuring	Depth varies hugely by site because it tracks how much fat is there -shallow on the nose or ear, deep on the buttock. Probe the edges for undermining and tunneling
Stage 4	BONE, tendon, muscle, cartilage or ligament exposed or directly palpable	Exposed bone means osteomyelitis is on the table until excluded, not a note to move past
Unstageable	Base OBSCURED by slough or eschar	Unstageable because you cannot see the bottom , not because it is a different injury. Debride and a Stage 3 or 4 is revealed -it always was one
Deep tissue pressure injury	Persistent non-blanchable DEEP RED, MAROON or PURPLE discoloration, or blood-filled blister	Damage starts at the bone-muscle interface and works outward , so the surface badly understates it. May deteriorate rapidly to Stage 3/4 despite optimal care -tell families in advance, not after

THE TWO RULES THAT REVERSE THE USUAL INSTINCT

Δ NEVER REVERSE-STAGE

A granulating Stage 4 does **NOT** become a Stage 3, then 2, then 1. It is a "healing Stage 4" permanently. The reason is biological: **full-thickness loss fills with granulation tissue and scar -it does NOT regenerate the fat, muscle and bone that were destroyed.**

Reverse staging claims a recovery that did not happen and corrupts the record the next clinician relies on.

Track healing with measurements and tissue description, not by walking the stage backwards.

Δ STABLE HEEL ESCHAR: LEAVE IT

Dry, adherent, intact, no erythema, fluctuance, drainage or odor = a biological cover. It protects a wound in poorly perfused tissue, and **removing it opens an ulcer that cannot close.** Offload, keep dry, inspect daily. Debride **only if it destabilizes** (erythema, fluctuance, drainage, odor), which is then urgent.

Assess perfusion before debriding ANY lower-limb wound -one that cannot heal for vascular reasons needs a vascular assessment, not a sharper instrument.

Δ PRESSURE vs MOISTURE DAMAGE

The commonest misclassification. **PRESSURE sits over a BONY PROMINENCE** (sacrum, coccyx, ischial tuberosity, trochanter, heel, occiput), **distinct edges**, may be necrotic. **MOISTURE damage is diffuse with irregular edges, in skin folds and perianally, NOT over bone, usually blanchable, never necrotic** -treated with barrier products and continence management.

Miscalling it Stage 2 **misdirects treatment AND misreports a preventable harm.** They often coexist, so **trust the location relative to bone.**

PREVENTION, WHERE NEARLY ALL THE BENEFIT IS

Intervention	Detail, and why
Δ Float the heels	Second commonest site after the sacrum, with almost no protective tissue over the calcaneus. Lift the heel entirely off the bed with a pillow under the CALF or an offloading boot, knee slightly flexed (full extension compresses the popliteal vein). Δ A pillow directly under the heel does NOT offload it
Repositioning	Regular turns individualized to risk, tissue tolerance and support surface rather than fixed at 2 hours for everyone. Document it -an undocumented turn schedule is indistinguishable from none
Head of bed ≤ 30°	Where medically permissible. Sitting up slides the skeleton down while the skin grips the sheet: that is SHEAR , and shear damages deep tissue at the bone interface where you cannot see it. Balance against aspiration and VAP precautions
Δ What NOT to use	NEVER ring or donut cushions -they concentrate pressure in a circle around the very area they are meant to protect and cause ischemia. Do NOT massage or rub over bony prominences -it does not improve perfusion and damages compromised tissue
Braden risk score	Δ LOWER = HIGHER RISK , the opposite direction to most scores. Six subscales: sensory perception, moisture, activity, mobility, nutrition, friction/shear. Use the SUBSCALE to pick the intervention -identical totals can need entirely different plans. Reassess when the condition changes, not just on admission
Inspect under devices	Device-related injuries from oxygen tubing, cervical collars, tube ties, casts and compression sleeves occur in non-standard sites (ears, nose, neck) and are missed because nobody looks there
Nutrition & mobility	Adequate protein and calories -healing a full-thickness wound is a major anabolic demand. Albumin and prealbumin are inflammation markers more than nutrition markers , so a low value is not a simple protein deficit. Mobilize early

WOUND CARE & INFECTION

THE WOUND BED

Keep the wound bed MOIST and the surrounding skin DRY -that single principle drives dressing choice more than any product feature. **Match absorbercy to exudate:** hydrogel for dry, foam or alginate for heavy exudate, hydrocolloid or film for minimal.

Fill dead space LOOSELY -tight packing creates pressure inside the wound; record tunnel depth and clock position. **Debride** sharp/surgical (fastest), enzymatic, autolytic (gentlest), mechanical or biologic -**subject to the eschar exception above.** **NPWT after adequate debridement, but NEVER instead of offloading.** Treat procedural pain, or the patient refuses the next dressing change.

Δ INFECTION & OSTEOMYELITIS

Every open wound is colonized, so a positive swab is the EXPECTED finding and not a reason to treat. Culture only with signs of infection (spreading erythema, warmth, increasing pain, purulence, odor, sudden deterioration, systemic features), and **sample deep tissue or bone, not the surface.** **Suspect osteomyelitis** with exposed or palpable bone, a **positive probe-to-bone**, or **failure to progress despite genuinely optimized care** -non-healing is the commonest presentation, not fever. **MRI is the imaging test of choice** (plain films are insensitive early); **bone biopsy with culture is the standard**, because a surface swab reflects colonization and will treat the wrong organism for the wrong duration.

PEARLS & PITFALLS

- **Not every wound is a healing wound.** With limited perfusion or prognosis, the honest goal may be **comfort, odor control and preventing further injury** rather than closure -and saying so explicitly changes the dressing, the debridement decision and the family conversation.
- **A wound not improving after weeks of genuinely optimal care needs the plan re-examined, not repeated.** That is the moment to reconsider perfusion, offloading adequacy, nutrition and osteomyelitis.

References: National Pressure Injury Advisory Panel pressure injury staging system (2016 revision, including the terminology change and the deep tissue pressure injury category) · NPIAP/EPUAP/PPPIA international guidance on prevention and treatment of pressure ulcers/injuries · CMS guidance on documenting healing pressure injuries without reverse staging.

Educational aid; verify against current guidance, local wound-care protocol and patient factors.

