



# Pressure Ulcers: Assessment & Treatment



**Sunnybrook**

HEALTH SCIENCES CENTRE

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when it matters  
**MOST**



# Learning Objectives

- Understand physician responsibilities for assessment and management
- Accurately stage and describe pressure ulcers
- Prescribe topical treatments

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# Pressure Ulcer Definition

A pressure ulcer is localized injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure, or pressure in combination with shear and/or friction.

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# Physician Responsibilities

- Recognition
- Identify and treat the cause
- Assess the wound
- Address patient concerns
- Prescribe local wound care
- Monitor results

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# Recognition

As part of initial medical assessment, document the presence of ulcers (including Stage I areas), other skin breakdown, and other significant skin abnormalities

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# Identify and Treat the Cause

History of previous ulcers

Targeted physical examination – vascular status, bony/structural deformities, sensation, ankle-brachial pressure index (ABPI)

Treat underlying cause and contributing factors



# Ankle Brachial Pressure Index



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# Identify and Treat the Cause

Contributing factors – immobility,  
moisture, anemia, poor nutritional status

Identify pressure, friction and shear  
factors

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# Assess the Wound

- Type : arterial, venous, diabetic/neuropathic
- Stage
- Wound parameters

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# Venous



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# Compression therapy



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# Arterial



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# Diabetic/neuropathic



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# National Pressure Ulcer Advisory Panel (NPUAP) Staging

- Suspected deep tissue injury
- Stage 1
- Stage 2
- Stage 3
- Stage 4
- Unstageable

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# Suspected Deep Tissue Injury

Purple or maroon localized area of discolored intact skin or blood-filled blister due to damage of underlying soft tissue from pressure and/or shear. The area may be preceded by tissue that is painful, firm, mushy, boggy, warmer or cooler as compared to adjacent tissue.

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# Stage 1

Intact skin with non-blanchable redness of a localized area usually over a bony prominence. Darkly pigmented skin may not have visible blanching; its color may differ from the surrounding area.

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## Stage 2

Partial thickness loss of dermis presenting as a shallow open ulcer with a red pink wound bed, without slough. May also present as an intact or open/ruptured serum-filled blister.

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# Stage 2



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## Stage 3

Full thickness tissue loss.  
Subcutaneous fat may be visible but bone, tendon or muscle are not exposed. Slough may be present but does not obscure the depth of tissue loss. May include undermining and tunneling.

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# Stage 4

Full thickness tissue loss with exposed bone, tendon or muscle. Slough or eschar may be present on some parts of the wound bed. Often include undermining and tunneling.

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# Stage 4



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# 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 (tan, brown or black) in the wound bed.

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# Unstageable



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# Wound Parameters

- Size – length, width and depth
- Wound base colour
- Drainage
- Odour
- Margins
- Undermining
- Inflammation

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# Address Patient Concerns

- Realistic expectations for healing
- Education regarding cause and treatment
- Appropriate pain management
- Referral for home care support
- Authorize appropriate pressure reduction devices and dressings

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# Treatment

- Clean and moist
- Wound bed preparation
- Exception – peripheral non-healing wounds such as dry gangrene – keep dry and do not debride to bleeding wound bed

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# Debridement

- Sharp debridement (scalpel, toothed forcep, & iris scissor)
- Autolytic (intrasite gel)
- Enzymatic (collagenase)
- Mechanical (saline wet to dry)

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# Wound infection

- Remove necrotic tissue and excess fluid
- Apply antimicrobial to clean wound bed
- Iodosorb paste, metronidazole gel, flamazine cream, acticoat (silver) dressings
- Do not use polysporin ointment (polymyxin & bacitracin)

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# Moist Interactive Dressings

- Absorbent (mepilex, allevyn)
- Calcium alginate (kaltostat, megasorb)
- Hydrogels (intrasite gel)
- Hydrocolloids (duoderm CGF, tegasorb)
- Wound Fillers (ribbon gauze, kling)
- Membranes (tegaderm, opsite)

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# Pre Printed Orders (I)

- Site and frequency
- Cleanse
- Irrigate
- Compress
- Pack
- Apply to ulcer

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# Pre Printed Orders (II)

- Apply to surrounding intact skin
- Cover
- Secure
- Consult nutrition
- Vacuum Assisted Therapy

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# Monitor

1. Document wound parameters
2. Debride eschar, as needed
3. Evaluate/treat for infection
4. Re-evaluate co-existing medical conditions
5. Document unavoidable factors that prevent healing

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# Drainage: Choice of Dressing

Wound Drainage Wound stage	Low	Moderate	Heavy
Stage 1	Film or thin hydrocolloid	n/a	n/a
Stage 2	Hydrocolloid	Hydrocolloid or foam	Alginate plus film
Stage 3 or 4 not infected	Hydrogel plus gauze	Alginate plus film	Alginate or pad
Stage 3 or 4 infected	n/a	Silver dressing or iodisorb paste	Silver dressing or iodisorb paste



# References

- Canadian Association for Wound Care  
[www.cawc.net](http://www.cawc.net)
- American Medical Directors' Association Clinical Practice Guidelines for Pressure Ulcers 2004  
[www.amda.com](http://www.amda.com)
- National Pressure Ulcer Advisory Panel  
[www.npuap.org](http://www.npuap.org)
- GERI Pearls. Vandenberg, Ed, University of Nebraska Medical Center  
<http://webmedia.unmc.edu/intmed/geriatrics/reynolds/pearls/skin/instructions.htm>

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