

Skin integrity/ Pressure Ulcers

Prevention/Identification/Treatment

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Prevention/Identification/Treatment

NURSES BECOME THE
EXPERTS

BECAUSE THEY HAVE
TO APPLY THE DRESSINGS!

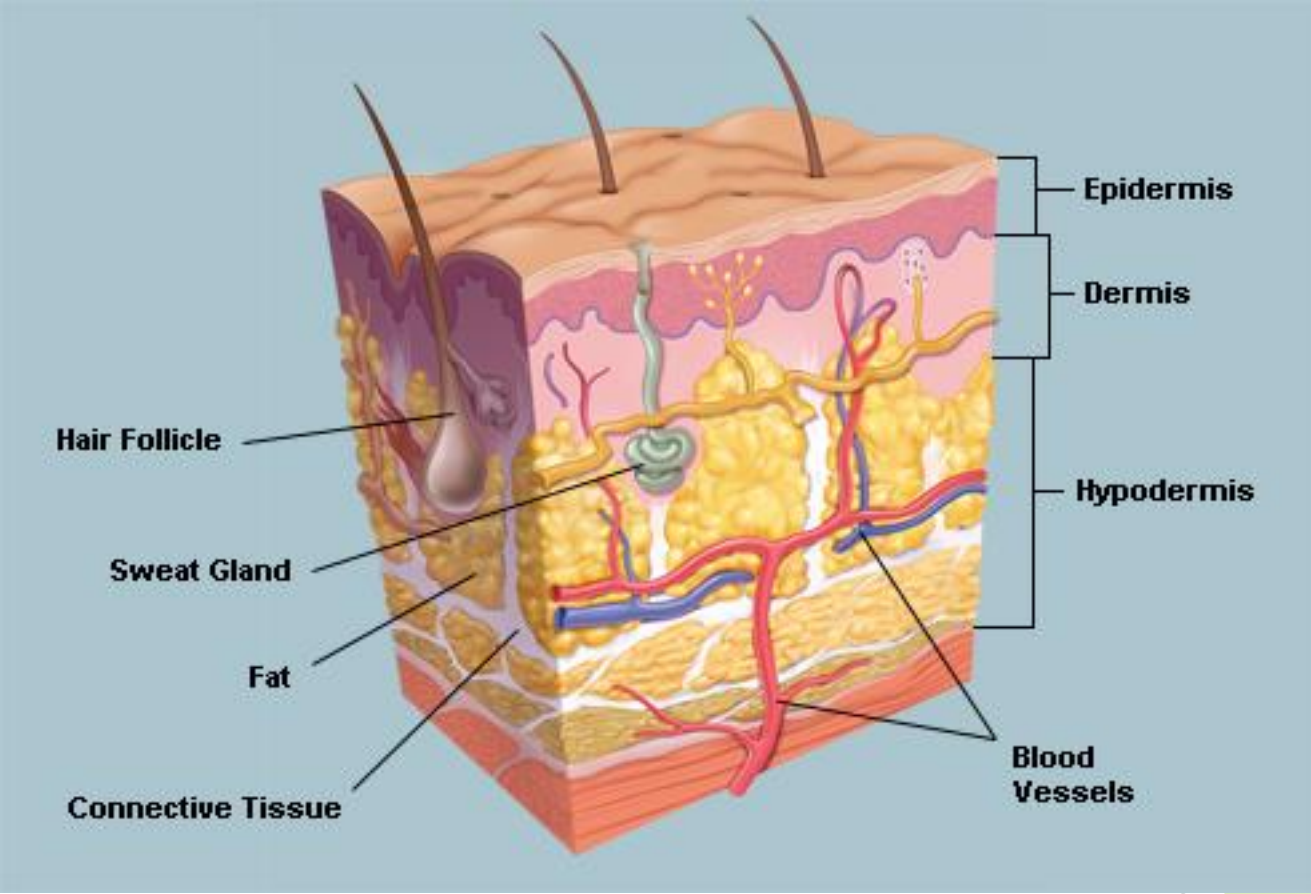


Skin

- ▶ Largest organ of the body
- ▶ Multilayered and covers the body
- ▶ Healthy skin should be soft, flexible, moist and slightly acidic
- ▶ Thickest part of the skin is found on the palms and soles of feet. Thinnest is found on the trunk

Function of the skin

- ▶ Protection
- ▶ Assists in thermoregulation
- ▶ Prevents fluid loss
- ▶ Synthesizes Vitamin D
- ▶ Allows wastes to be excreted
- ▶ Provides a unique identity to an individual



Structure of the skin


- ▶ 3 layers
- ▶ Epidermis (Outer layer of skin, 6 layers, renews itself every 52-75 days)
- ▶ Dermis (thicker portion of skin, 2 layers supports Epidermis , provides blood and lymphatic fluid flow, contains nerves, smooth muscle and vasculature)
- ▶ Hypodermis (Inner layer of skin, composed of fat and connective tissue, provides cushioning, separates skin from rest of body,

What is a Pressure Ulcer

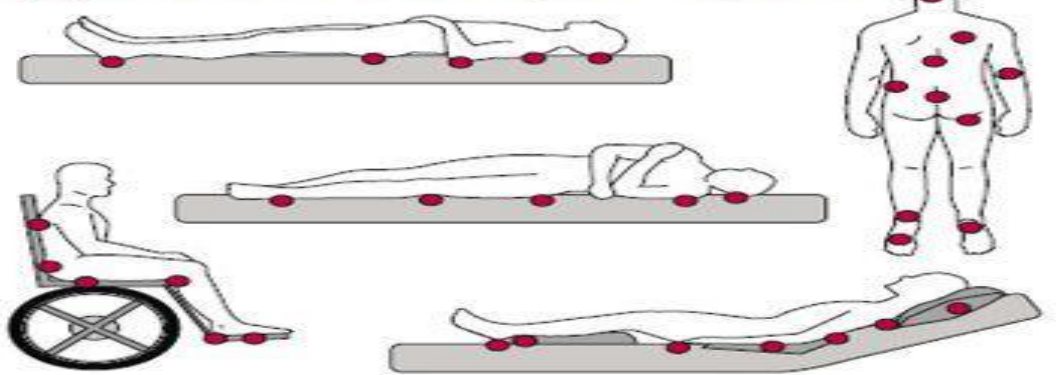
- ▶ A localized injury to the skin and/or underlying tissue usually over a boney prominence, as a result of pressure, or pressure in combination of shear.
- ▶ Shear - a strain in the structure of a substance produced by pressure, when its layers are laterally shifted in relation to each other

Boney Prominences

Pressure Points



Red circles indicate pressure points



REMEMBER:

- Find out who's at risk and why
- Keep pressure off the pressure points
- Make sure pressure is off the heels
- Remember to keep the skin dry
- Help resident eat right and drink fluids
- Inspect the skin daily

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What can we do to help prevent pressure ulcers in our residents?

- ▶ Turn and position per care plan
- ▶ Provide prompt incontinence care
- ▶ Proper detection (skin assessments)
- ▶ Provide proper nutrition
- ▶ Reporting all unusual skin findings to Wound team/MD
- ▶ Utilize pressure relieving devices

PRESSURE ULCER STAGING

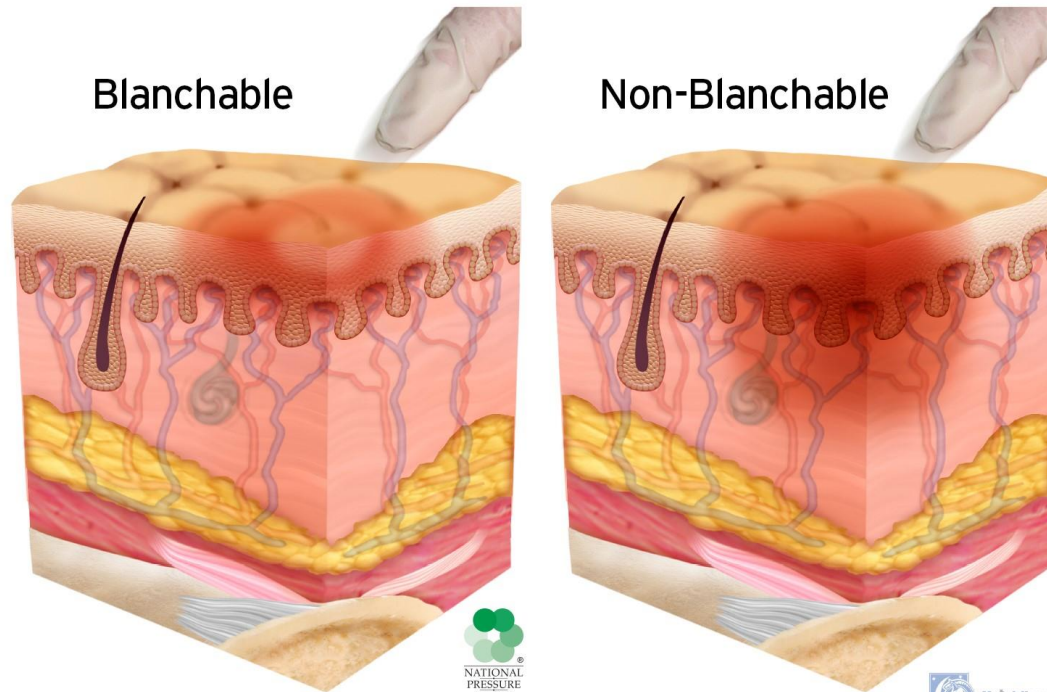
- ▶ Stage I
- ▶ Intact skin with non-blanchable redness of a localized area usually over a boney prominence. Dark pigmented skin may not have visible blanching; color differs from the surrounding area -Area may be painful, firm, soft, warmer or cooler as compared to surrounding skin

Stage I



Blanchable vs. Unblanchable

Blanchable vs Non-Blanchable



PRESSURE ULCER STAGING

- ▶ Stage II
- ▶ Partial thickness skin loss involving epidermis, dermis or both. The ulcer is superficial and may present clinically as an abrasion, blister or shallow crater.

Stage II

Stage II



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PRESSURE ULCER STAGING

- ▶ Stage III
- ▶ Full thickness tissue loss. Fat may be visible (bone, tendon or muscle are not exposed). May include undermining and tunneling.
- ▶ Depth varies by anatomical location.

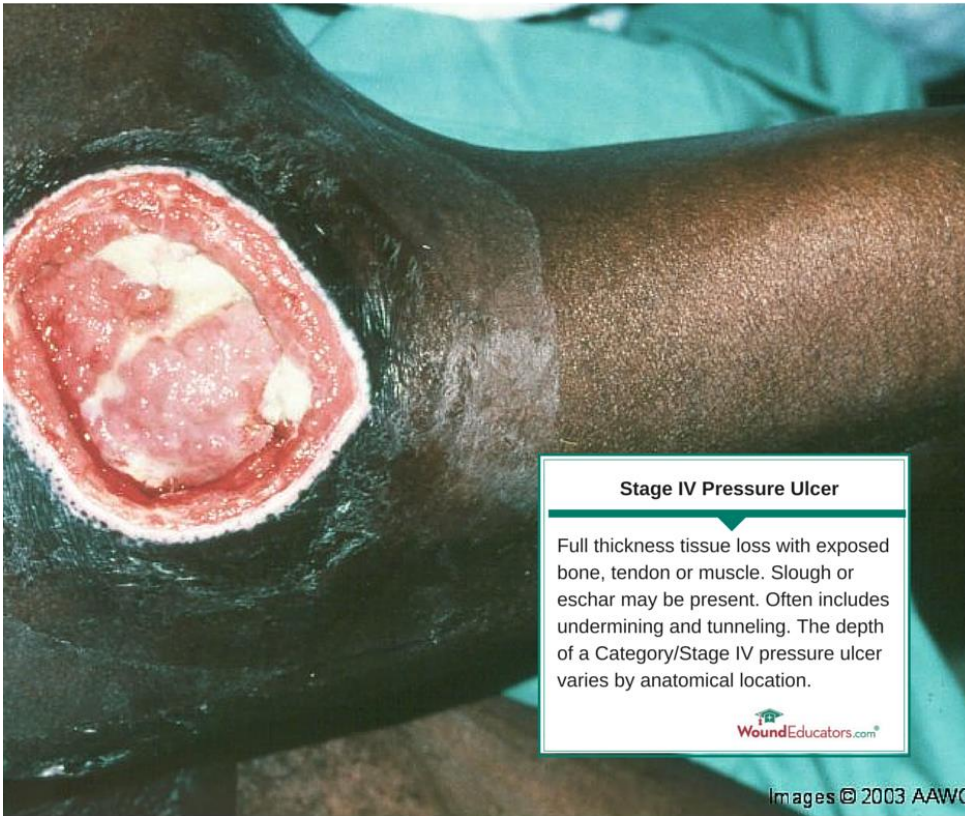
Stage III



PRESSURE ULCER STAGING

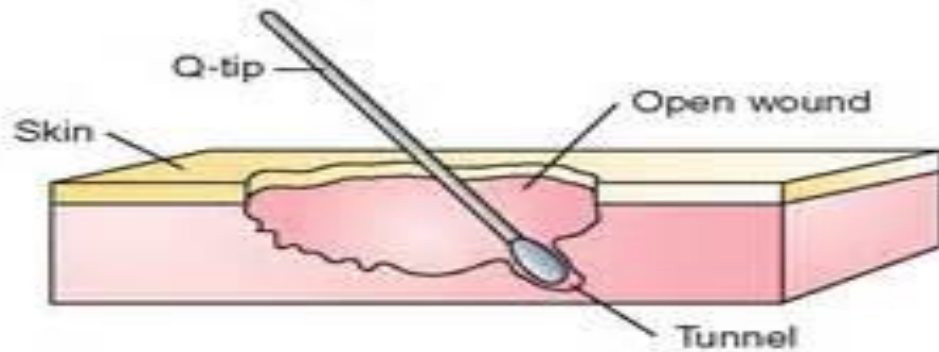
- ▶ Stage IV
- ▶ Full thickness tissue loss with exposed bone, tendon or muscle. Often includes undermining and tunneling
- ▶ Depth varies by anatomical location
- ▶ Exposed bone or tendon is visible or directly palpable

Stage IV

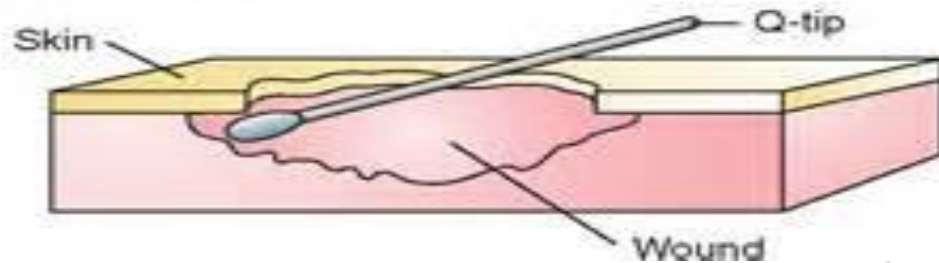


Tunneling vs. Undermining

A. Tunneling



B. Undermining



PRESSURE ULCER STAGING

- ▶ 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. Tissue may be painful, firm, mushy, boggy, warmer and or cooler compared to adjacent tissue. May be harder to detect in darker pigmented skin (color may lighter than surrounding skin).

Suspected deep tissue injury



PRESSURE ULCER STAGING

- ▶ 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.
- ▶ Until enough slough is removed to expose the wound bed this ulcer can not be staged. Stable (dry, adherent, intact without erythema) eschar on the heels serves as the body's natural cover and should never be removed.

Unstageable



Pressure ulcer/Wound assessment

- ▶ Wound Assessment must include:
- ▶ Wound bed
- ▶ Peri - wound tissue
- ▶ Drainage
- ▶ Smell/Odor
- ▶ Temperature
- ▶ Size
- ▶ Undermining/Tunneling if present and location

Pressure ulcer assessment cont..

- ▶ Wound bed
- ▶ Describing the appearance of the wound bed is critical in documentation process. Part of the process includes determining the color of the wound bed as well as describing the surrounding skin

Pressure Ulcer assessment cont...

- ▶ Color of the wound bed can vary - most common use of color descriptors are:
- ▶ Red - Indicates healthy tissue. The goal of treatment is to keep the wound moist and protected. Wound should mimic the moisture like the inside of the mouth.
- ▶ Yellow - Indicates the presence of slough (moist, yellow, stringy tissue), necrotic tissue or infection. The goal of treatment is to control the infection (if present) and eliminate slough/necrotic tissue by debridement
- ▶ Black - Indicates the presence of eschar (dehydrated, dead tissue). This tissue should be removed if possible and residents status allows.

Pressure Ulcer measurement

- ▶ Measurement must be completed by an RN
- ▶ When measuring must include length (longest part of wound, width (widest part of wound), depth (deepest part of the wound bed). This is completed by using a cotton tip applicator (QTIP).

Pressure ulcer measurement cont.

- ▶ If you imagine a resident as a clock - Their head is 12 o'clock, feet are at 6 o'clock, Left arm is at 3 o'clock and right arm is at 9 o'clock.
- ▶ Therefore: length of wound is 12 o'clock to 6 o'clock. Width is 3 o'clock to 9 o'clock.
- ▶ Depth is measured by inserting a cotton tip applicator to the deepest site of the wound and then measuring how far applicator goes into wound.
- ▶ Tunneling/undermining is documented in centimeters and o'clock numbers
- ▶ Example: undermining from 2 o'clock to 6 o'clock at 3 cm depth

Pressure ulcer infections

- ▶ All chronic wounds have bacteria in them
- ▶ Signs of infection - I.F.E.E
- ▶ I - Induration
- ▶ F - Fever
- ▶ E -Erythma
- ▶ E -Edema

Pressure ulcer documentation

- ▶ Results from assessment of wound itself
 1. Location
 2. Shape
 3. Size
 4. Stage
 5. Tunneling/Undermining - if present and location
 6. Exudate
 7. Peri-wound tissue

Choosing the right dressing

Select a wound dressing based on the :

- ▶ Ability to keep the wound bed moist
- ▶ Need to address bacterial risk
- ▶ Nature and volume of wound exudate
- ▶ Condition of the tissue in the ulcer bed
- ▶ Ulcer size, depth and location
- ▶ Presence of tunneling/undermining
- ▶ Protection of peri-ulcer

How to choose the right dressing

Most common types of treatments

- *Gauze

- *Impregnated gauze

- *Semipermeable film dressing

- *Semipermeable foam dressing

- *Hydrocolloids

- *Hydrogels

How to chose the right dressing

Gauze - (avoid if other dressings are available, mainly used moist for packing)

Advantages: Absorbent, inexpensive, can provide moist environment if moistened

Disadvantages: Nonselective debridement, permeable to bacteria, removal can be painful, cotton fibers can stick to the wound, requires frequent treatment changes.

Impregnated/Vaseline gauze (telfa, Xeroform) - (Superficial stage II - better than gauze due to pain and potential for shredding)

Advantages: Less painful dressing removal, Doesn't adhere to the wound, Semi-occlusive, Inexpensive

Disadvantages: Nonabsorbent, Petroleum based can slow down healing process

How to chose the right dressing

Semi permeable film dressing (Opsite, Tegaderm, Blisterfilm)- use on shallow, minimally draining ulcers

Advantages: Moist environment, see through, Oxygen permeable, waterproof, can promote autolytic debridement of wound bed, cost effective

Disadvantages: Low absorption, easily displaced, difficult to apply, more exp. Than gauze

Semi permeable foam dressing (Allevyn, Aquacel foam, Optofoam) - use on exudating stage II's and shallow stage III's.

Advantages: Provides moist environment, good absorption, waterproof, maintains temperature of wound bed, minimal per-wound irr. With changes, autolytic debridement, permeable to oxygen

Disadvantages: May need tape if nonadhesive, easily displaced, may need secondary dressing, more expensive, no ability to visualize wound bed when in place

How to chose the right dressing

Hydrocolloids(Duoderm, tegaderm) - use on clean stage 2 PU's in an area where they wont roll/melt

Advantages - Promotes moist wound healing, easy to apply, faster healing, Occlusive, Good absorption, maintains body temp., Autolytic debridement

Disadvantages - May macerate periwound tissue, no ability to monitor, poor conformity to odd shapes, more expensive

Alginates (Calcium alginates, curasorb) - use on mod- heavily exudating PU's

Advantages - Can be used on infected wounds, conforms well, assists in autolytic debridement, promotes moist wound enviro., Decreases pain at site, Does not irritate peri-wound

Disadvantages - Dehydrate easily, needs tape/secondary dressing, expensive.

Pressure ulcer debridement

4 types of debridement

- ▶ Sharp - Done with scalpel to remove necrotic tissue. Only performed by MD/Qualified professional
- ▶ Mechanical - Done using scissors/tweezers to remove loose necrotic tissue, blunt is done by rubbing with gauze (other forms of mechanical debridement are : whirlpool, wet to dry dressings, pulsate lavage with suction)
- ▶ Enzymatic - Done using chemicals that contain enzymes. Depending on the type of necrotic tissue is the type of enzyme you use (ex. Santyl -Collagenase is used on collagen based necrotic tissue)
- ▶ Autolytic - Done by using the body's own enzymes already present in the wound and using an occlusive dressing to maintain a moist, warm environment.

Pressure ulcer healing process

3 phases of wound healing

1. Inflammation - Occurs 1-10 days after wound is created (if lasts longer look for foreign body, medications, bacteria) - Cardinal s/sx - Heat, redness, swelling, pain, loss of function. Too much can slow healing. Do not mistake for infection.
2. Proliferation - Occurs on day 3-20 after wound is created. Granulation occurs in this phase.
3. Remodeling - Occurs from day 9 onward. Tissue is regenerated. Wound has closed and scar tissue is forming.

References

- ▶ National pressure injury advisory panel (NPIAP)
- ▶ European pressure ulcer advisory panel (EPUAP)
- ▶ Pan Pacific pressure injury alliance (PPPIA)
- ▶ Pressure injury guidelines - St. Margaret's Center