Pressure Ulcers

Nursing Interventions and Clinical Skills Chapter 22

Pressure Ulcer

- Localized area of tissue destruction
- Compression of soft tissue
- Over bony prominence
- External surface
- Prolonged period of time

Pressure Ulcer

- No longer referred to as bedsore or decubitus ulcer
- Lying
- Sitting
- External source
- Figure 6-1, pg. 96

Pressure Ulcer

- Common sites
  - Sacrum
  - Heels
  - Elbows
  - Lateral malleoli
  - Trochanters
  - Ischial tuberosities

Pressure Ulcer

- Three pressure related forces contribute to development of pressure ulcer
  - Intensity
  - Duration
  - Tissue tolerance

Pressure Ulcer

- Intensity
  - How much pressure is applied
  - Must exceed capillary closure pressure
  - Compressing blood flow to the skin

Pressure Ulcer

- Duration
  - Low pressure over prolonged period of time
  - High pressure over a short period of time

Pressure Ulcer

- Tissue tolerance
  - Ability of the tissue to react to the pressure
  - Three extrinsic factors make the tissue less tolerant to pressure
  - Shear
  - Friction
  - Moisture

Pressure Ulcer

- Shear
  - Parallel force that stretches tissue and blood vessels
  - Skin sticks to bed sheets
  - Bony structure slides down
  - Blood vessels occluded
  - Causes deep tissue destruction
  - Figure 6-2, pg. 96

Pressure Ulcer

- Friction
  - Rubbing of the tissue against a surface
  - Abrades top layer of skin
  - Increased risk of pressure injury to tissue

Pressure Ulcer

- Moisture
  - Skin moisture softens skin
  - Common cause fecal or urinary incontinence
  - Increases risk of skin breakdown

Pressure Ulcer

- Other factors
  - Poor nutrition
  - Advanced age
  - Low blood pressure
  - Smoking
  - Elevated temperature
  - Anemia

Risk Assessment and Prevention

- Prevention is the key
- Easier to prevent pressure ulcers than to heal pressure ulcers
- Is your patient at risk?
- Daily skin inspection—esp. pressure points
- Risk assessment tool—identify factors that increase patient risk of breakdown

Braden Scale

- Used to predict pressure sore risk
- Six subscales
  - Sensory perception
  - Moisture
  - Activity
  - Mobility
  - Nutrition
  - Friction and shear

Braden Scale

- Each subscale is given a score
- All scores added together to indicate risk of pressure ulcer development
- Done on admission and periodic intervals according to facility policy

Braden Scale

- Sensory perception—ability to respond meaningfully to pressure-related discomfort
  - Completely limited—1
  - Very limited—2
  - Slightly limited—3
  - No impairment—4

Braden Scale

- Moisture
  - Constantly moist—1
  - Very moist—2
  - Occasionally moist—3
  - Rarely moist—4

Braden Scale

- Activity
  - Bedfast—1
  - Chairfast—2
  - Walks occasionally—3
  - Walks frequently—4

Braden Scale

- Mobility
  - Completely immobile—1
  - Very limited—2
  - Slightly limited—3
  - No limitation—4

Braden Scale

- Nutrition
  - Very poor (NPO and/or maintained on clear liquids or IVs for more than 5 days)—1
  - Probably inadequate (receives less than optimum amount of liquid diet or tube feeding)—2
  - Adequate (on tube feeding or TPN)—3
  - Excellent—4

Braden Scale

- Malnutrition is present if
  - Serum albumin <3.5 g/dl
  - Total lymphocyte count <1800/mm
  - Or weight loss >15%

Braden Scale

- Friction and shear
  - Problem—1
  - Potential problem—2
  - No apparent problem—3
- Braden scale—Table 22-2, pg. 508

Assessment of Braden Scale

- Score of 9 or less—very high risk for skin breakdown
- Score of 10-12—high risk for skin breakdown
- Score of 13-14—moderate risk for skin breakdown
- Score of 15-18—mild risk for skin breakdown

Other Factors Associated with Skin Breakdown

- Nasogastric (NG) tube
- Oxygen cannula
- Oral airway
- Endotracheal tube
- Orthopedic devices

Skin Assessment

- Routine skin assessment every shift
- With position change
- Especially bony prominences
- Note redness or discoloration
- Can be first stage of skin breakdown
- Vary from pink to deep red

Skin Assessment

- Dark skinned individuals
  - Deepening of normal ethnic color
  - Persistent red, blue, or purple hue
- If redness noted—check for blanching
- Gently press on reddened area
- If redness persists—can indicate tissue injury
- If skin blanches-not at risk for breakdown

Skin Assessment

- Darkly pigmented skin does not always show direct changes in color
- Note if skin is taut, shiny or indurated
- Assess for edema
- Assess skin temperature
  - Initially warmer than surrounding skin
  - Later cooler than surrounding skin

Skin Assessment

- NEVER massage (rub) a reddened area
- Reddened areas indicate blood vessel damage

Prevention

- Daily skin inspection
- Braden scale
- Turning schedule—q 2 hours
- Pressure relief devices
  - Pressure relief mattress
  - Pressure relief cushion
  - Pillows
  - Heel protectors

Prevention

- Limit elevation of HOB to prevent sliding
- Move patient carefully—do not drag
- Keep skin well hydrated—fluids and moisturizer
- Avoid skin stripping—careful tape removal, paper tape, stockinette, removal of obstacles, careful handling of patient

Prevention

- Maintain skin integrity by use of incontinent devices—Depends, condom catheter, quickly clean incontinent urine or stool, barrier creams
- Prevent maceration of skin—dry skin thoroughly after bath, pat dry do not rub, special care for obese patients

Documentation

- Document patient's risk assessment
- Document patient's skin assessment
- Document any intervention
  - Repositioning
  - Pressure relief devices
  - Moisture protection
  - Incontinence

Documentation

- Decreased food intake or lack of appetite
- Frequent loose stools
- Wound drainage on skin

Treatment

- Determine cause
- Healing can not take place until cause is eliminated
- Provide an environment conducive to healing
  - Prevent and/or manage infection
  - Cleanse the wound

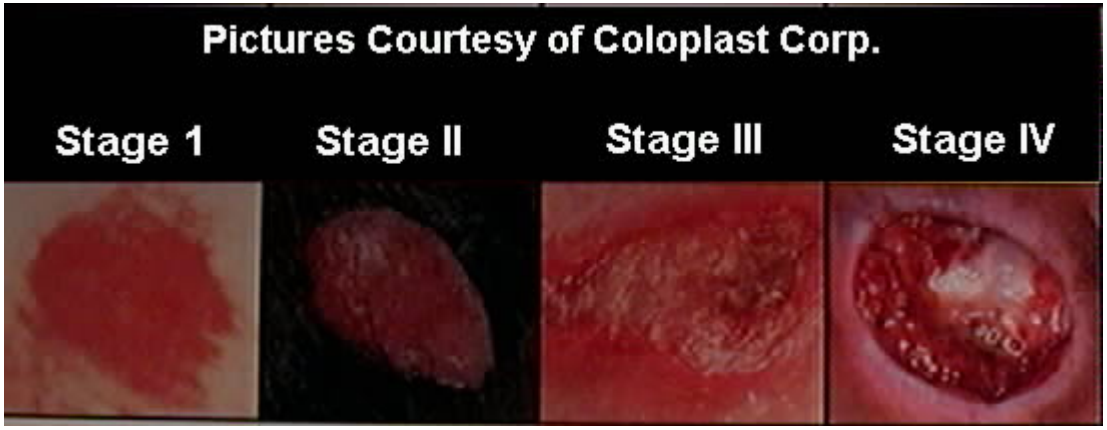
Treatment

- Remove nonviable tissue
- Manage exudate
- Eliminate dead space
- Control odor
- Protect the wound

Staging of Pressure Ulcers

- Suspected deep tissue injury—new stage
- Stage I
- Stage II
- Stage III
- Stage IV
- Unstageable ulcer

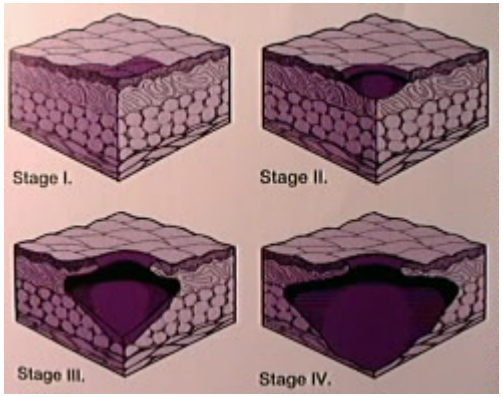
Stages I to IV



Stage I

- Intact skin with non-blanchable redness
- May be painful
- May be firm or soft
- May be warmer or cooler as compared with surrounding tissue

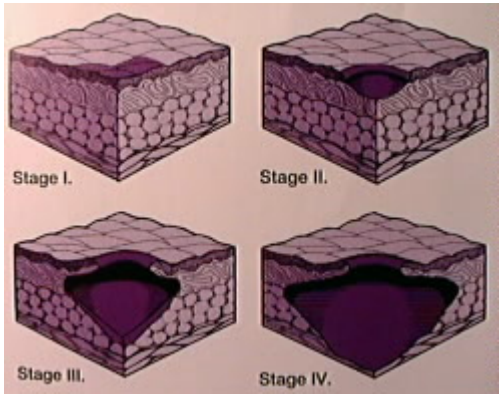
Staging



Stage II

- Partial thickness loss of dermis
- Presenting as a shallow open ulcer or open/ruptured serum-filled blister
- May be shiny or dry
- Without slough

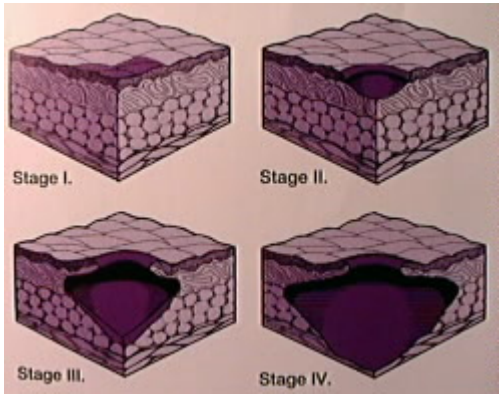
Staging



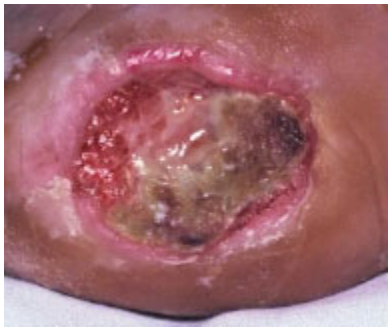
Stage III

- Full thickness tissue loss
- Subcutaneous fat may be visible
- Slough may be present
- Undermining or tunneling may be present

Staging



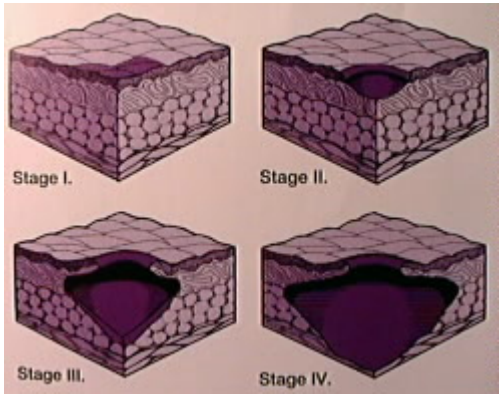
Stage III



Stage IV

- Full thickness tissue loss
- Exposed bone, tendon, or muscle
- Osteomyelitis possible complication

Staging



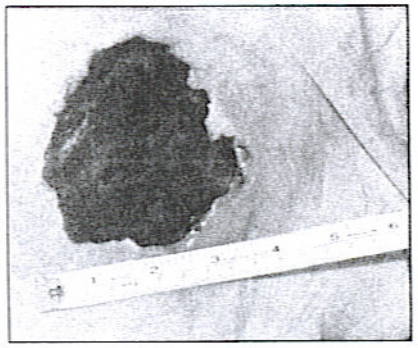
Unstageable Ulcer

- Full thickness tisue loss
- Base of ulcer is covered by slough or eschar
- Slough or eschar need to be removed before to expose wound base
- Then staging can be determined

Unstageable Ulcer

Necrotic, unstageable pressure ulcer

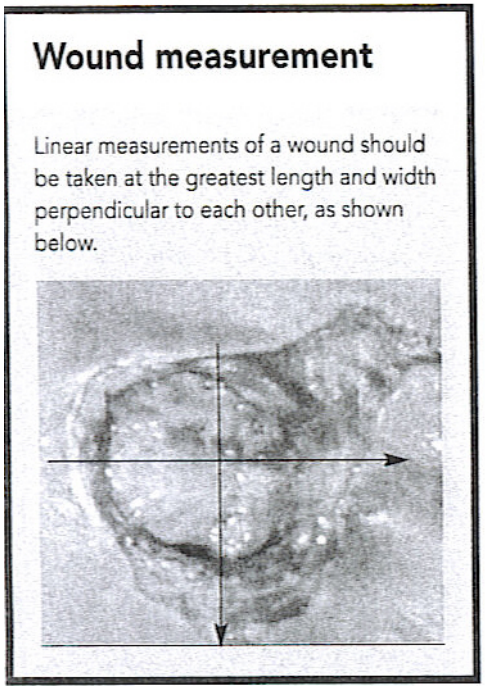
Shown here is a pressure ulcer that is unstageable because it is covered with necrotic tissue.



Wound Assessment

- Etiology
- Anatomical wound location
- Extent of tissue loss (stage)
- Phase of healing
- Wound dimensions
  - Width
  - Length
  - depth

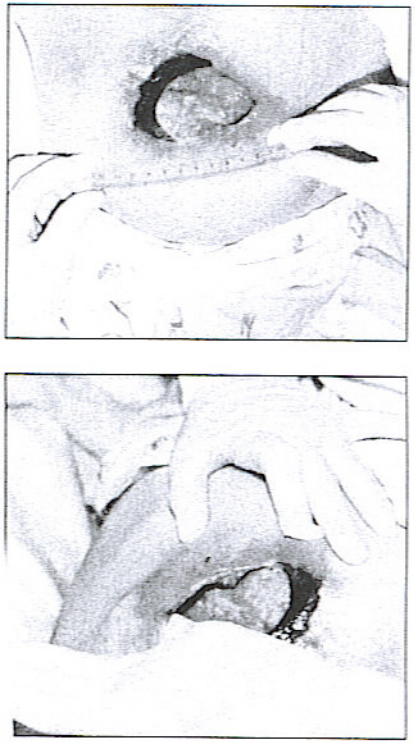
Wound Measurement



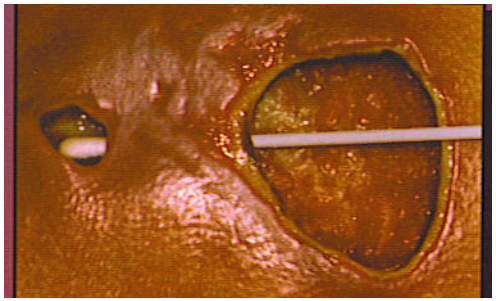
Wound Assessment

- Type of tissue in wound bed
  - Necrotic
  - Granulation
  - Moist
  - Dry
- Presence of undermining, sinus tracts, or tunnels

Undermining



Undermining



Wound Assessment

- Condition of wound edges
- Volume, color, consistency of exudate
- Condition of periwound skin
- Presence of odor
- Presence of pain

Principles of Wound Care

- Prevent and manage infection
  - Infected wound will not heal
- Cleanse the wound
  - Remove surface bacteria
  - Removes wound exudate
  - Removes dressing residue
- Remove nonviable tissue
  - Nonviable tissue supports infection

Principles of Wound Care

- Manage exudate
  - Excessive wound exudate will macerate tissues
- Eliminate dead space
  - Prevents exudate buildup and risk of infection
- Provide moist environment
  - Supports wound healing

Principles of Wound Care

- Cleanse the wound
  - Aseptic technique
  - Sterile normal saline
  - Prescribed solution
  - Gently wipe wound base and surrounding skin
  - Pulsed lavage—irrigation
  - whirlpool

Wound Irrigation

- Confirm order
- Explain to patient
- Coordinate with dressing change
- May need goggles, gown, or mask
- Position patient to facilitate drainage
- Stay outside of wound margins
- Irrigate until solution drains clear

Principles of Wound Care

- Remove nonviable tissue
  - Autolytic debridement
  - Mechanical debridement
  - Enzymatic debridement
  - Surgical debridement
- Color tip
  - Black—necrotic tissue
  - Yellow—infection
  - Red--healing

Autolytic Debridement

- Autolysis uses the body's own enzymes and moisture
- Rehydrate, soften, and liquefy eschar
- Selective debridement
- Only necrotic tissue is liquefied
- Painless

Autolytic Debridement

- Semi-occlusive or occlusive dressing
- Maintain wound fluid in contact with necrotic tissue
- Examples: Hydrocolloid, hydrogel, and transparent film

Autolytic Debridement

- Advantages
- Selective
- No damage to surrounding skin
- Effective
- Easy to perform
- Little or no pain

Autolytic Deridement

- Disadvantages
  - Not as rapid as surgical debridement
  - Must closely monitor wound for s/s of infection
  - May promote anaerobic growth with use of occlusive dressing

Enzymatic Debridement

- Chemical enzymes—fast acting—necrotic tissue
- Most enzymatic debriders are selective, some are not
- Apply to necrotic tissue—not healthy tissue

Enzymatic Debridement

- Disadvantages
  - Expensive
  - Requires prescription
  - Inflammation or discomfort many occur

Mechanical Debridement

- Used for decades
- Wet to dry dressing/wet to moist dressing
- Hydrotherapy—whirlpool
- Advantages
  - Inexpensive--gauze

Mechanical Debridement

- Disadvantages
  - Nonselective
  - May be painful
  - Time consuming
  - Hydrotherapy may cause tissue maceration
  - Risk of infection via waterborne pathogens

Surgical Debridement

- Sharp surgical debridement
- Laser debridement
- Under anesthesia
- Advantages
  - Fast
  - Selective
  - Effective

Surgical Debridement

- Disadvantages
  - Painful
  - Expensive—if OR involved and anesthesia

Research Study

- Long term care facility
- Pressure ulcers Stage II or greater
- Moist dressings—greater reduction in wound surface area
- Proper nutrition—greater reduction in size of ulcer