PRESSURE INJURY PREVENTION & TREATMENT

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Many Minds. One Vision.

DISCLOSURE

Monifa Brooks has no financial conflicts of interest relevant to this activity.

LEARNING OBJECTIVES

At the conclusion of this presentation, the learner will:

Identify incidence and prevalence

Identify risk factors associated with pressure injury development

Discuss pressure injury prevention strategies

Accurately stage pressure injuries

Discuss pressure injury treatment options

PRESSURE INJURIES

- Major cause of morbidity and mortality
- Increase caregiver burden
- Increased direct and indirect healthcare costs
- Negatively impact quality of life

PRESSURE INJURIES

- Tissue overlying a bony prominence may breakdown when pressure exceeds *32 mmHg in as little as 30 minutes
- Constant pressure of 70 mmHg for more than 2 hours leads to tissue ischemia and necrosis
- Relieving pressure in a cyclical fashion decreases tissue damage and improves pressure tolerance

PRESSURE INJURIES

- May be caused by:
- Direct pressure-usually over a bony prominence
- Shearing/Friction forces
  - may occur with head of bed elevation greater than 30 degrees
  - may occur with improper patient transfer/repositioning

Additional Risk Factors

- Incontinence
- Sensory impairment*
- Mobility impairment*
- Cognitive impairment*
- Depression
- Poor nutrition/hydration*

- *May be iatrogenic

Risk Assessment

- Risk assessment must include full skin assessment
- Those at high risk should be treated more aggressively with more frequent observation

BRADEN PRESSURE ULCER RISK ASSESSMENT

ACT TO PREVENT PRESSURE ULCERS

SENSORY PERCEPTION Ability to respond meaningfully to pressure -related discomfort	**NO IMPAIRMENT** Responds to verbal commands. Has no sensory deficit which would limit ability to feel or voice pain or discomfort.	**SLIGHTLY LIMITED** Responds to verbal commands but cannot always communicate discomfort or ask to be moved or turned OR has some sensory impairment which limits ability to feel pain or discomfort in 1 or 2 extremities.	**VERY LIMITED** Responds only to painful stimuli. Cannot communicate discomfort except by moaning or restlessness OR has a sensory impairment which limits the ability to feel pain or discomfort over 1/2 of body.	**COMPLETELY LIMITED** Unresponsive (does not moan, flinch, or grasp) to painful stimuli due to diminished level of consciousness or sedation OR limited ability to feel pain over most of body surface.	4 3 2 1 ADD TO TOTAL SCORE
MOISTURE Degree to which skin is exposed to moisture	**RARELY MOIST** Skin is usually dry; linen only requires changing at routine intervals.	**OCCASIONALLY MOIST** Skin is occasionally moist, requiring an extra linen change approximately once a day.	**OFTEN MOIST** Skin is often but not always moist. Linen must be changed at least once a shift.	**CONSTANTLY MOIST** Skin is kept moist almost constantly by perspiration urine, etc. Dampness is detected every time patient is moved or turned.	4 3 2 1 ADD TO TOTAL SCORE
ACTIVITY Degree of physical activity	**WALKS FREQUENTLY** Walks outside the room at least twice a day and inside room at least once every 2 hours during waking hours.	**WALKS OCCASIONALLY** Walks occasionally during day but for very short distances, with or without assistance. Spends majority of each shift in bed or chair.	**CHAIRFAST** Ability to walk severely limited or non existent. Cannot bear own weight and/or must be assisted into chair or wheelchair.	**BEDFAST** Confined to bed	4 3 2 1 ADD TO TOTAL SCORE
MOBILITY Ability to change and control body position	**NO LIMITATIONS** Makes major and frequent changes in position without assistance.	**SLIGHTLY LIMITED** Makes frequent though slight changes in body or extremity position independently.	**VERY LIMITED** Makes occasional slight changes in body extremity position but unable to make frequent or significant changes independently.	**COMPLETELY IMMOBILE** Does not make even slight changes in body or extremity position without assistance.	4 3 2 1 ADD TO TOTAL SCORE
NUTRITION Usual food intake pattern [1]NPO: Nothing by mouth. [2]IV: Intravenously. [3]TPN: Total parenteral nutrition.	**EXCELLENT** Eats most of every meal. Never refuses a meal. Usually eats a total of 4 or more servings of meat and dairy products. Occasionally eats between meals. Does not require supplementation.	**ADEQUATE** Eats over half of most meals. Eats a total of 4 servings of protein (meat, dairy products) each day. Occasionally will refuse a meal, but will usually take a supplement if offered, OR is on a tube feeding or TPN[3] regimen, which probably meets most of nutritional needs.	**PROBABLY INADEQUATE** Rarely eats a complete meal and generally eats only about 1/2 of any food offered. Protein intake includes only 3 servings or meat or dairy products per day. Occasionally will take a dietary supplement, OR receives less than optimum amount of liquid diet or tube feeding.	**VERY POOR** Never eats a complete meal. Rarely eats more than 1/3 of any food offered. Eats 2 servings or less of protein (meat or dairy products) per day. Takes fluids poorly. Does not take a liquid dietary supplement, OR is NPO[1] and/or maintained on clear liquids or IV[2] for more than 5 days.	4 3 2 1 ADD TO TOTAL SCORE
FRICTION & SHEAR		**NO APPARENT PROBLEM** Moves in bed and in chair independently and has sufficient muscle strength to lift up completely during move. Maintains good position in bed or chair at all times.	**POTENTIAL PROBLEM** Moves feebly or requires minimum assistance. During a move, skin probably slides to some extent against sheets, chair, restraints, or other devices. Maintains relatively good position in chair or bed most of the time but occasionally slides down.	**PROBLEM** Requires moderate to maximum assistance in moving. Complete lifting without sliding against sheets is impossible. Frequently slides down in bed or chair, requiring frequent repositioning with maximum assistance. Spasticity, contractures, or agitation leads to almost constant friction.	4 3 2 1 ADD TO TOTAL SCORE

RISK SCALE	**NONE** 23 22 21 20 19	**MILD** 18 17 16 15	**MODERATE** 14 13	**HIGH** 12 11 10 **SEVERE** 9 8 7 6
EQUIPMENT	No additional pressure support required	High specification foam mattress or static air overlay. Consider cushion for chair, Bedcradle/gooseneck		Dynamic air overlay, Dynamic air cushion Dynamic mattress Replacement or Low Air Loss
PRACTICE	• Educate Weight-shifting, Skin inspection • Evaluate on change of condition	• Reposition Weight-shifting, Skin inspection • Promote Activity • Manage individual risk factors nutrition; shear; friction; continence • Educate • Evaluate on change of condition		ALL PLUS • Supplement with small positional shifts • Seating/posture assessment • Nutritional assessment • Educate • Evaluate on change of condition

TOTAL SCORE
USE CHART ON LEFT TO DETERMINE YOUR PATIENTS RISK

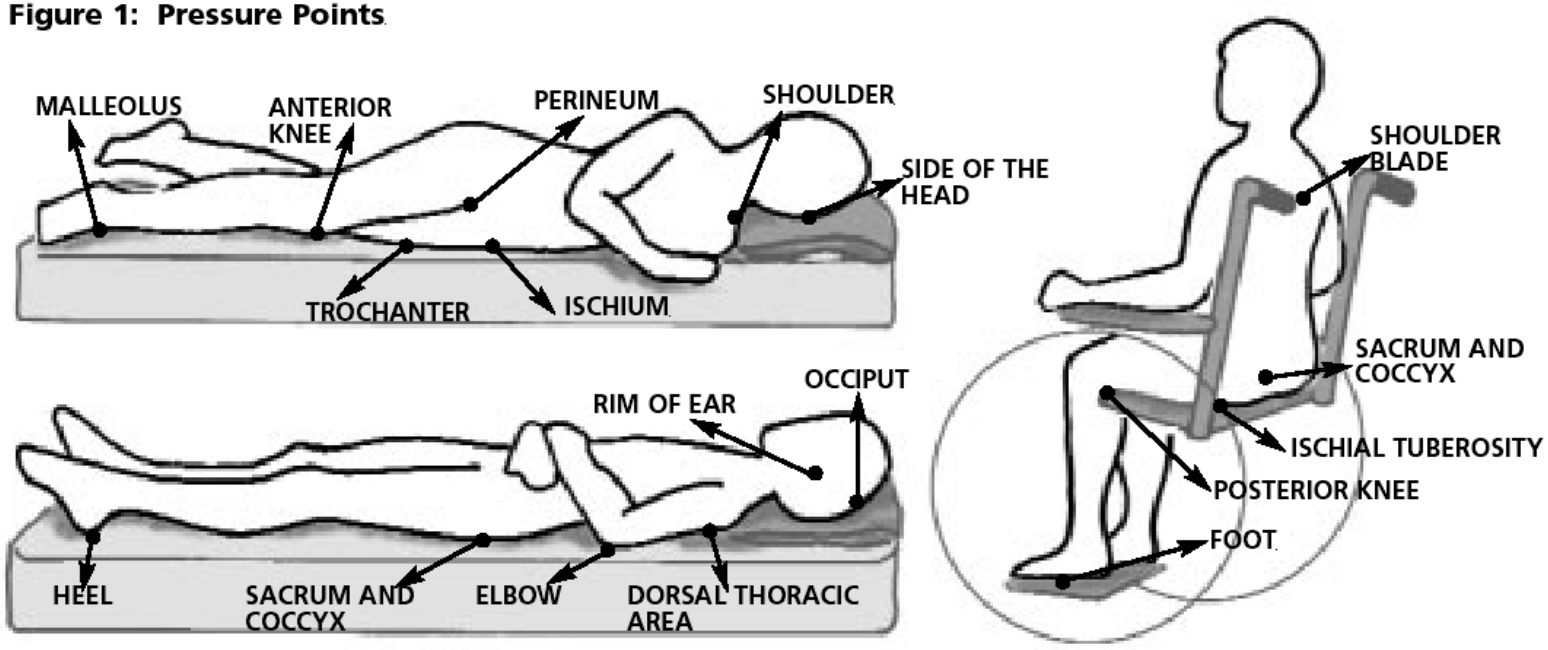
Reference: "The Braden Scale of Predicting Pressure Sore Risk" Bergstrom, N; Braden, B et al. Nursing Research 1987 Vol 36 No 4 pp206 210. Issued by Royal Adelaide Hospital Staff Development Department in conjunction with South Australian Quality Council Pressure Ulcer Prevention Practices – Integration of Evidence.

RISK ASSESSMENT

- Systematic risk assessment for all patients
  - e.g. Braden scale
- Documentation is essential
  - **Braden score of 18 or less indicates those at increased risk for developing a pressure injury**
- Interventions should be adjusted for risk stratification
- Risk assessment should be ongoing as patient factors change

PRESSURE INJURIES

Figure 1: Pressure Points



PREVENTION

- Patient/family education
- Vigilant monitoring
- Adequate seating system and appropriate sleep surface
- Regular pressure relief via repositioning

PREVENTION-MATTRESSES

- Egg crate overlay
- Alternating air mattress
- Low air loss mattress
- High air loss mattress
- “Turning” mattress
- Air fluidized mattress

PREVENTION-CUSHIONS

- Foam
  - Low maintenance
  - Difficult to clean
  - Moisture retention
- Gel
  - Moderate maintenance
  - Gel may harden over time
- Hybrid (gel/foam)
- Air-filled
  - Excellent pressure relief
  - Higher maintenance
  - Expensive
  - Air pressure may fluctuate
  - Some loss of “stability”

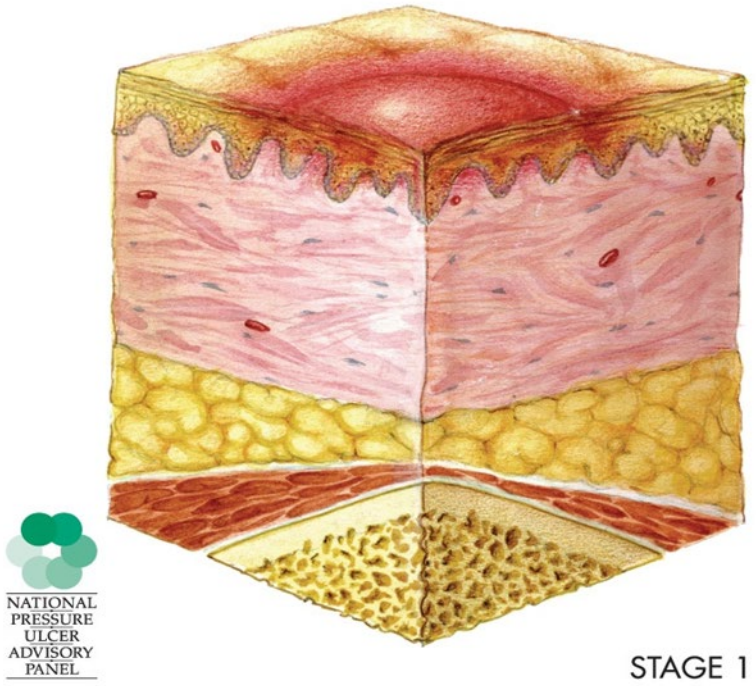
PREVENTION

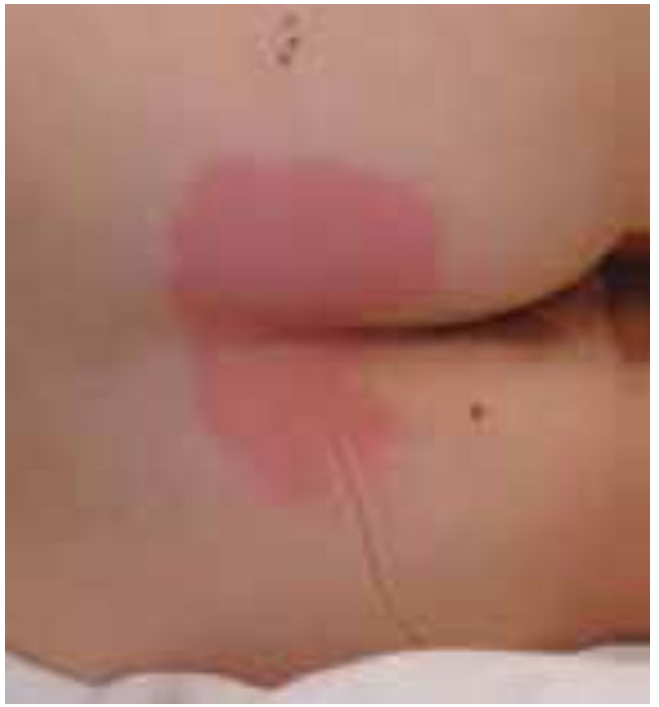
- Optimize nutrition/hydration
- Early mobilization
- Incontinence management
- Avoid excessive sedation
- Minimize shearing/friction forces

Pressure Injury Staging

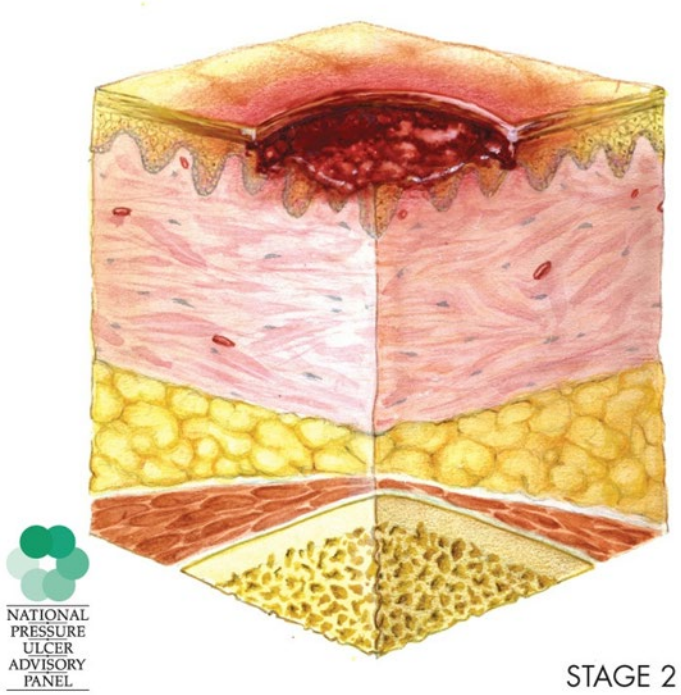
- Be familiar with NPUAP documentation guidelines
- Documentation is key
- **NO REVERSE STAGING

Non-blanchable erythema usually over a bony prominence. Can be difficult to detect in darker pigmented skin.

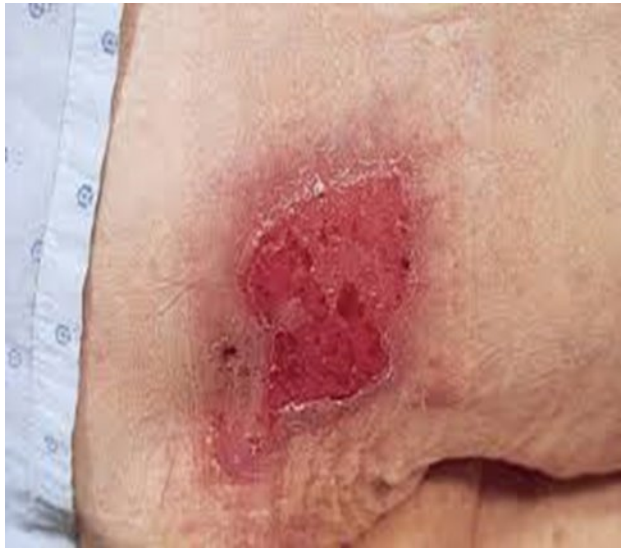




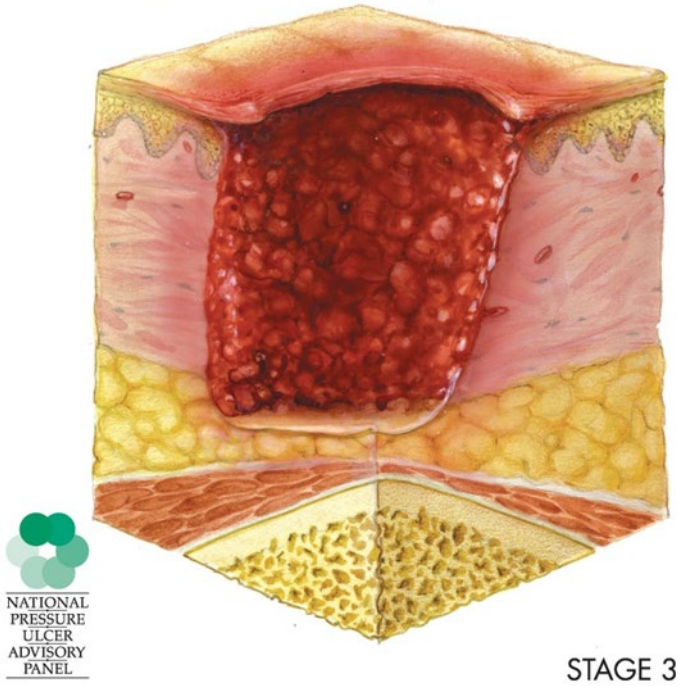
Partial thickness loss of dermis, wound bed without slough. May present as open/ruptured blister.



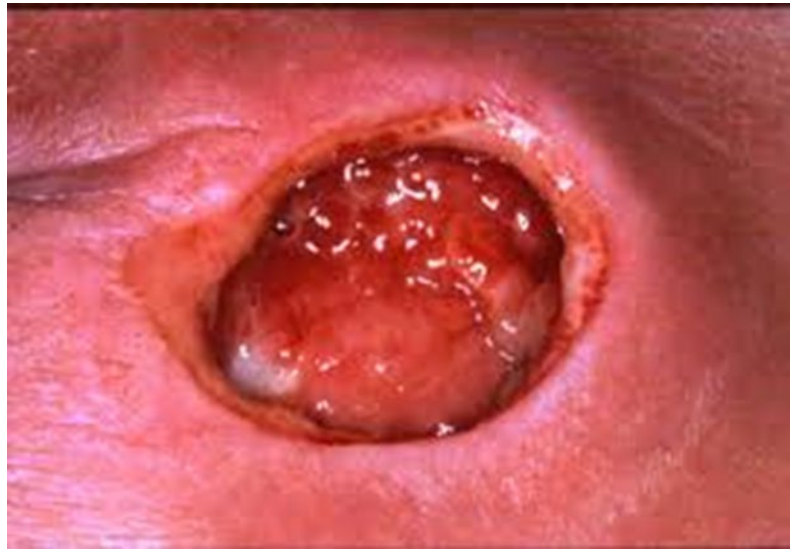
STAGE 2



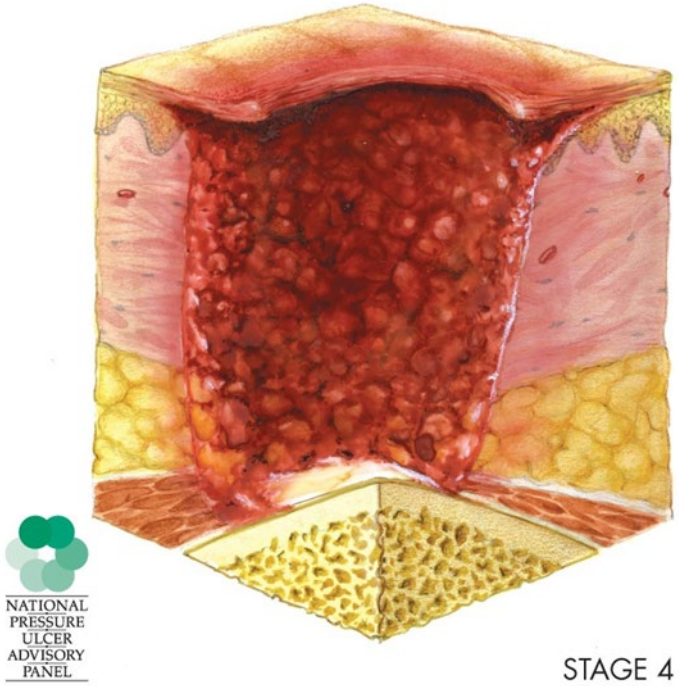
Full thickness tissue loss. Subcutaneous fat may be visible, but does NOT extend to bone, tendon or muscle.



STAGE 3

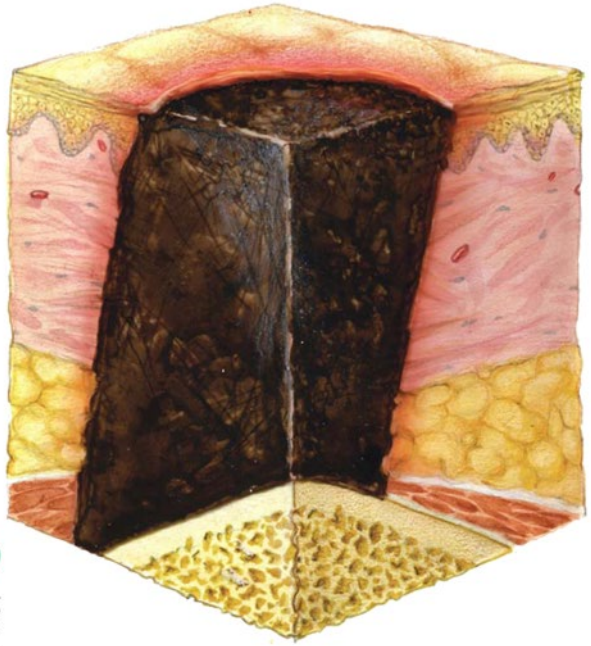


Full thickness tissue loss with exposed bone, tendon or muscle.

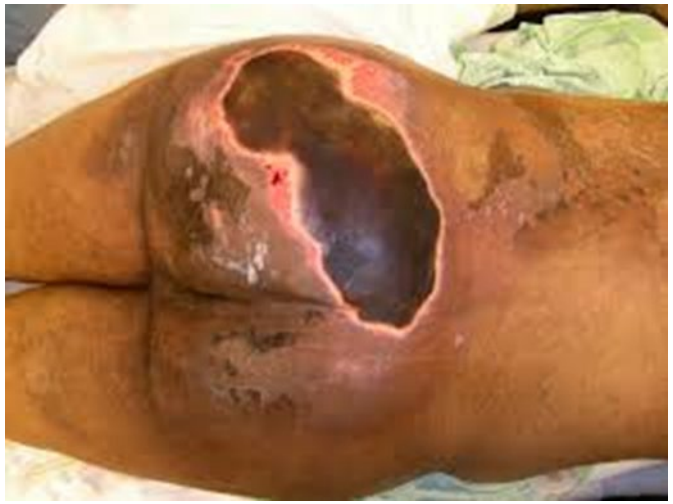


STAGE 4

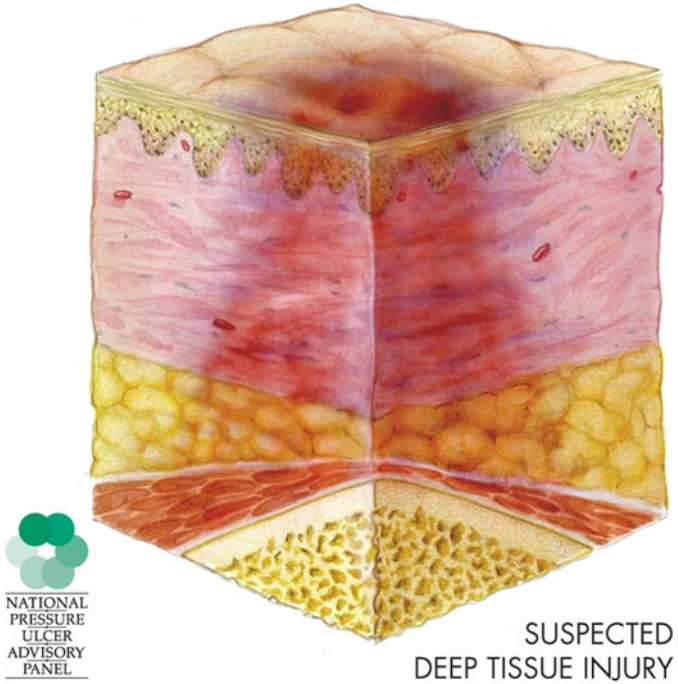
Full thickness tissue loss with base covered by slough and/or eschar.

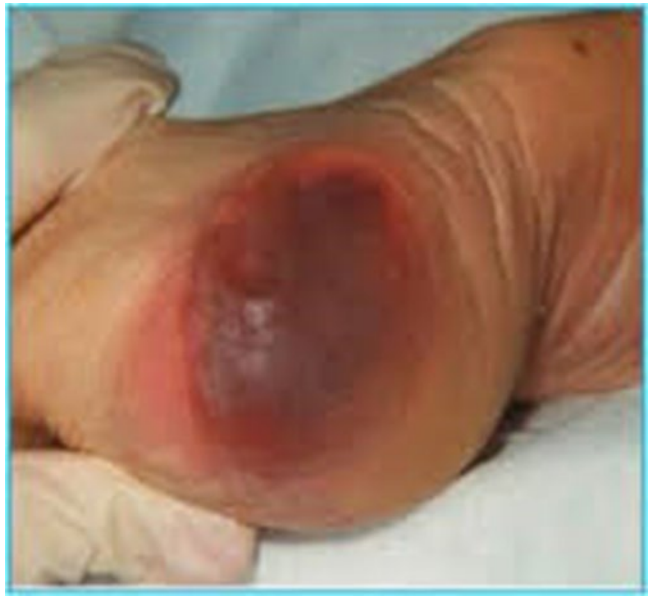


UNSTAGEABLE



Purple or maroon localized area of discolored intact skin or blood-filled blister due to damage of soft tissue from pressure or shear





TREATMENT-STAGE 1

- Moisture barrier
- Effective pressure relief-minimizing direct pressure over wound area
- Consider polyurethane foam dressing
- Minimize friction/shearing forces
- Optimize nutrition and hydration
- Patient/family education
- Frequent observation and documentation

TREATMENT STAGE 2

- Dry shallow ulcers-consider hydrogel to maintain moisture within wound bed
  - Avoid excessive moisture/maceration of intact tissue
- Moist shallow ulcers-consider polyurethane barrier dressing
- Consider bacteriostatic dressing application if cross-contamination is likely

TREATMENT STAGE 3 or 4

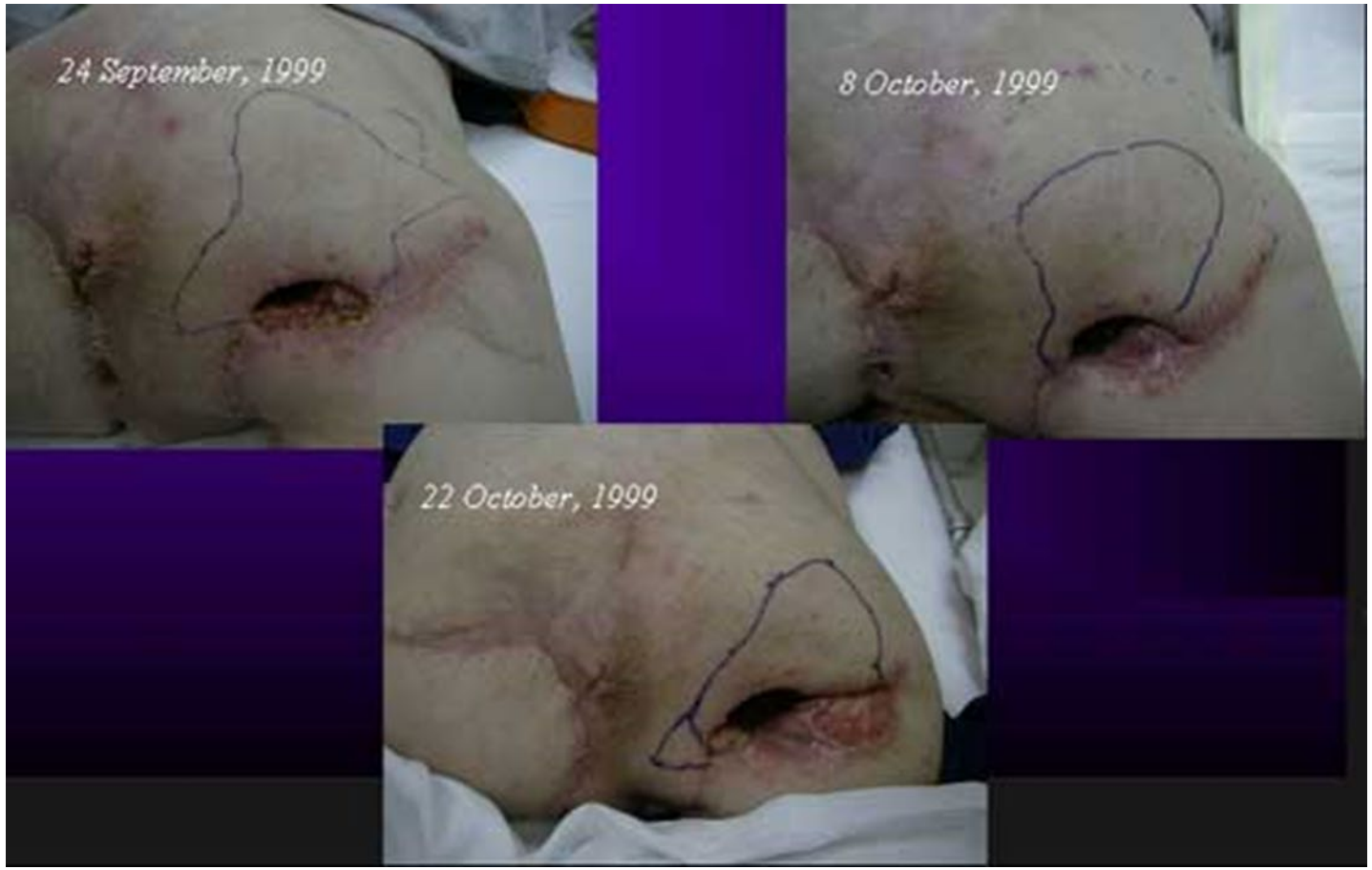
- Remove any devitalized tissue
  - Enzymatic debridement
  - Sharp debridement
  - Mechanical debridement
  - Biological measures
- Consider negative pressure dressing if wound comprised of granulation tissue

TREATMENT STAGE 4

- Consider evaluation for osteomyelitis if bone is visible or directly palpable in wound bed

- Consider surgical consultation

What about surgery?



What about surgery?

- Consider surgical closure for:
  - Very large wounds
  - Highly motivated patients who desire more rapid healing of the wound
  - Stage III or IV wounds that have not responded to conservative treatments

NUTRITION

- Provide at least 30-35 kcal/kg body weight
- Provide 1.25-1.5 gm of protein/kg of body weight daily
- Achieve positive nitrogen balance
- High protein nutritional supplements if oral intake is inadequate
- Consider supplement enteral feeds as needed
- Monitor patient's weight and adjust diet/supplements as needed

TREATMENT-REVIEW

- Remove devitalized tissue
- Insure moist wound bed to promote granulation
- Consider bacteriostatic dressing if contamination is likely
- Optimize pressure-relief
- Optimize bowel/bladder management
- Optimize nutrition and hydration

Documentation

- Documentation allows for objective assessment of the treatment intervention

- Documentation can be very helpful or harmful if there are questions regarding the quality of patient care provided

REFERENCES

National Pressure Ulcer Advisory Panel, European Pressure Ulcer Advisory Panel and Pan Pacific Pressure Injury Alliance. Prevention and Treatment of Pressure Ulcers: Quick Reference Guide. Emily Haesler (Ed.). Cambridge Media: Osborne Park, Western Australia; 2018.

THANK YOU!

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Q and A

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