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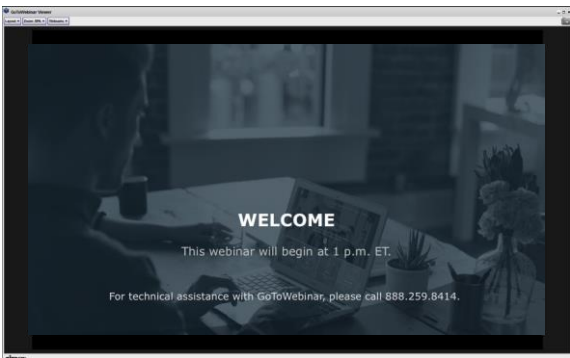
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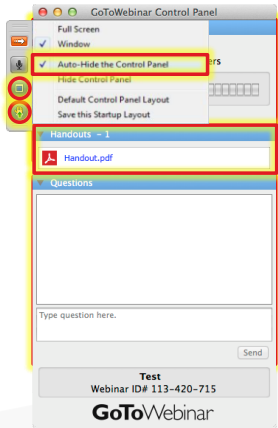
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- FREE CE exam
  - Links to the courses will be provided at the end of this presentation
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    - Occupational Therapists: 0.10 AOTA CEU

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## SKIN INJURY PREVENTION

It's Just a Stage 1 Pressure Injury. Or Is It?

### Your Presenter

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- Dedicated health professional with more than 29 years of nursing experience in medical/surgical, ICU, and wound and ostomy nursing
- Certified Wound Ostomy Nurse (CWON)
- Extensive editing/writing experience
- Currently: Clinical Appeals Specialist
- Previously: Nursing instructor for baccalaureate students
- Sigma Theta Tau Inductee



**Pamela Damron**  
MSN, RN, CWON

Clinical Appeals Specialist, Freelance Writer

## Goals and Learning Outcomes

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The goal of this presentation is to describe the differences between deep tissue injuries and stage 1 pressure injuries, especially in dark skin tones.

Upon completion of the webinar, learners will be able to:

- **Explain** the differences between deep tissue injuries and stage 1 pressure injuries.
- **Identify** risk factors for patients who develop deep tissue injuries and stage 1 pressure injuries.
- **Collaborate** interprofessionally with members of the healthcare team to address prevention of skin injuries.

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## Interdisciplinary Team

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Before I begin this presentation, I want you all to know that every discipline has something **special and unique** to add to the patient's plan of care.

As healthcare professionals, we must work together to achieve higher quality patient outcomes and safety for our patients.

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## Interdisciplinary Team

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- Pressure injury prevention is a team approach.
- Everyone must do his or her part in prevention.
- The costs of healing pressure injuries may be in the billions of dollars for organizations.
- The pain and associated symptoms involved with pressure injuries are very difficult for the patients.



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## Pressure Ulcer to Pressure Injury

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The National Pressure Ulcer Advisory Panel (NPUAP) reevaluated the explanation of a pressure ulcer during the 2016 Staging Consensus Conference held April 8-9, 2016, in Rosemont (Chicago), Illinois.

National pressure ulcer advisory panel; Stuque AG, Sasaki VDM, da Silva Teles AA., de Santana ME, Rabeh SAN, Sonobe HM. 2017; Langley J, Brenner R. 2004

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## Pressure Ulcer to Pressure Injury

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- The name “pressure ulcer” was changed to “pressure injury.”
- A pressure injury was defined as:
  - “Localized damage to the skin and underlying soft tissue usually over a bony prominence or related to a medical or other device. The injury can present as intact skin or an open ulcer and may be painful.”(NPUAP pressure injury stages)

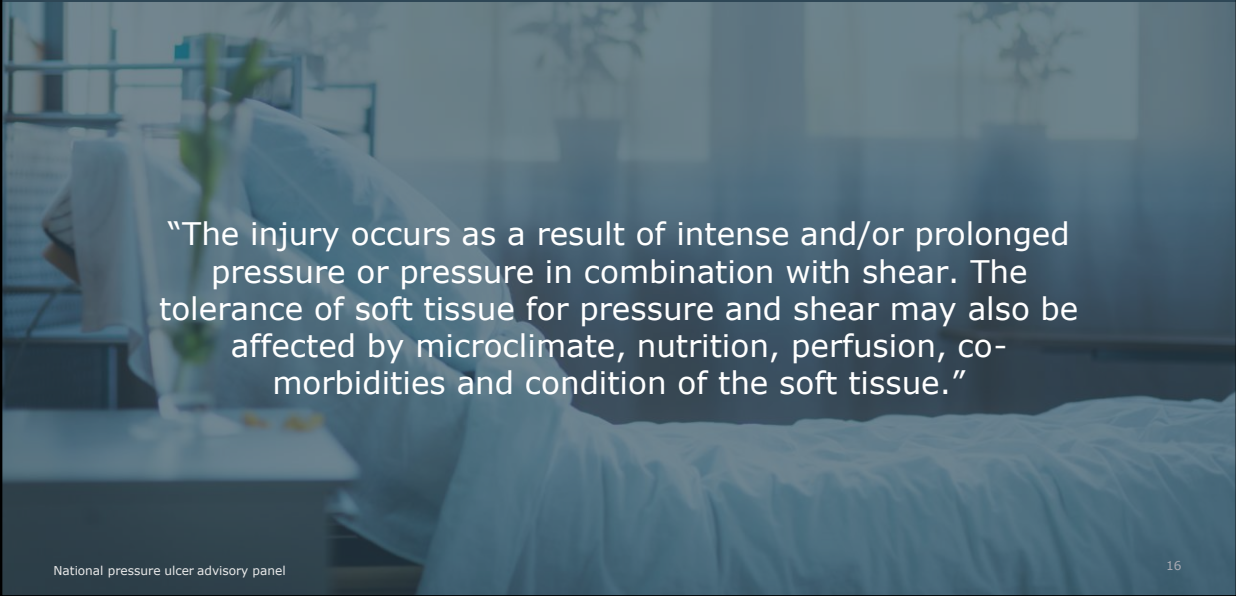
National pressure ulcer advisory panel; NPUAP pressure injury stages; Stuque AG, Sasaki VDM, da Silva Teles AA., de Santana ME, Rabeh SAN, Sonobe HM. 2017

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## Pressure Ulcer to Pressure Injury

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“The injury occurs as a result of intense and/or prolonged pressure or pressure in combination with shear. The tolerance of soft tissue for pressure and shear may also be affected by microclimate, nutrition, perfusion, co-morbidities and condition of the soft tissue.”

National pressure ulcer advisory panel

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## Stage 1 Pressure Injury

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- Non-blanchable erythema; intact skin
  - “Intact skin with a localized area of non-blanchable erythema, which may appear differently in darkly pigmented skin. Presence of blanchable erythema or changes in sensation, temperature, or firmness may precede visual changes. Color changes do not include purple or maroon discoloration; these may indicate deep tissue pressure injury.”

National pressure ulcer advisory panel

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## Deep Tissue Pressure Injury

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- Persistent non-blanchable; dark red to purple appearance
  - “Intact or non-intact skin with localized area of persistent non-blanchable deep red, maroon, purple discoloration or epidermal separation revealing a dark wound bed or blood filled blister. Pain and temperature change often precede skin color changes. Discoloration may appear differently in darkly pigmented skin.”

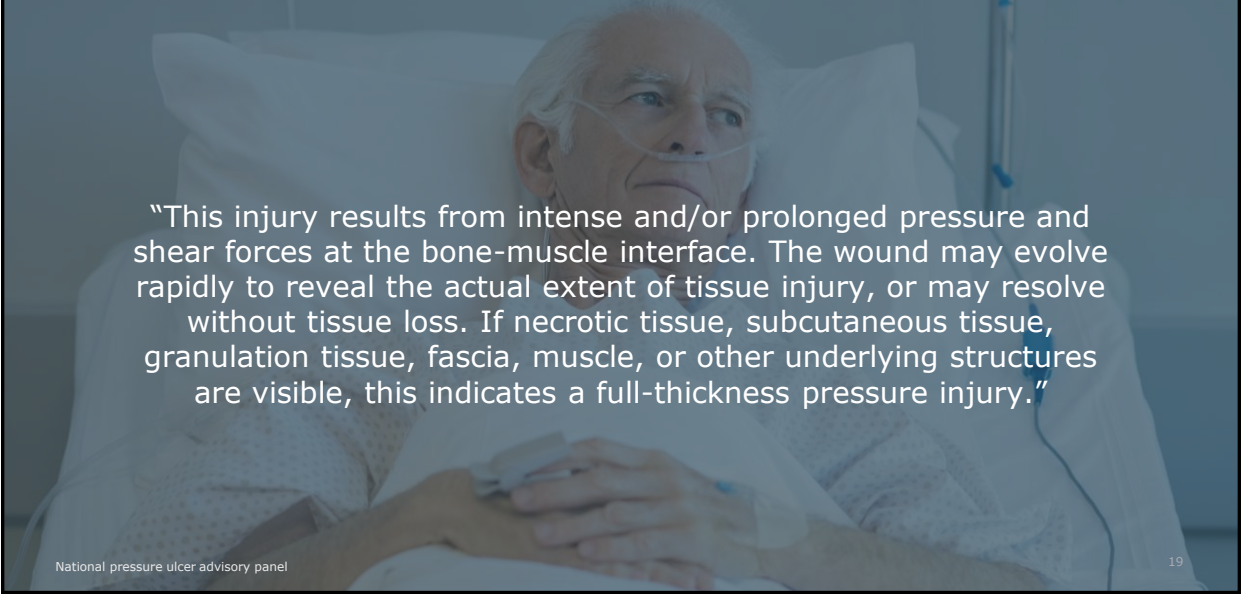
National pressure ulcer advisory panel

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## Deep Tissue Pressure Injury

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“This injury results from intense and/or prolonged pressure and shear forces at the bone-muscle interface. The wound may evolve rapidly to reveal the actual extent of tissue injury, or may resolve without tissue loss. If necrotic tissue, subcutaneous tissue, granulation tissue, fascia, muscle, or other underlying structures are visible, this indicates a full-thickness pressure injury.”

National pressure ulcer advisory panel

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## Deep Tissue Pressure Injury (DTPI)

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- DTPIs begin at the interface of the bone-muscle.
- This type of injury takes 24 to 72 hours to visualize the damage between the time of pressure exertion to the onset of the purple- or maroon-colored skin.

Black JM, Brindle CT, Honaker JS. 2016

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## DTPIs in Darker Skin Tones

- Do not rely on blanching.
- Look for persistent erythema.
- Look for hyperpigmentation.
- May need to palpate for boggy or induration.
- Always feel for warmth, hotness, coolness, or coldness.
- Look for color changes.
  - Darker tones will represent tissue injuries.
- Assess for pain: pain = injury.

## Deep Tissue Pressure Injury

- DTPIs are similar to rhabdomyolysis where a liquid necrosis damages the muscle that is injured over time.
- Blood blisters are categorized as DTPIs.
- Purple intact tissue is a DTPI.

## Deep Tissue Pressure Injury

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- DTPIs occur when the patient spends a long period of time on hard surfaces.
- DTPIs can progress to full-thickness injuries; occasionally, they resolve with no cutaneous involvement.

Edsberg LE, Black JM, Goldberg M, McNichol L, Moore L, Sieggreen M. 2016

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## Deep Tissue Pressure Injury

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- “Do not use DTPI to describe vascular, traumatic, neuropathic, or dermatologic conditions.”
- These are encompassed in differential diagnoses.
- DTPIs are not skin tears, bruises, hematomas, venous engorgement, arterial insufficiency, embolic events, incontinence-associated dermatitis (IAD), necrotizing fasciitis, calciphylaxis, or anticoagulant-induced skin necrosis.

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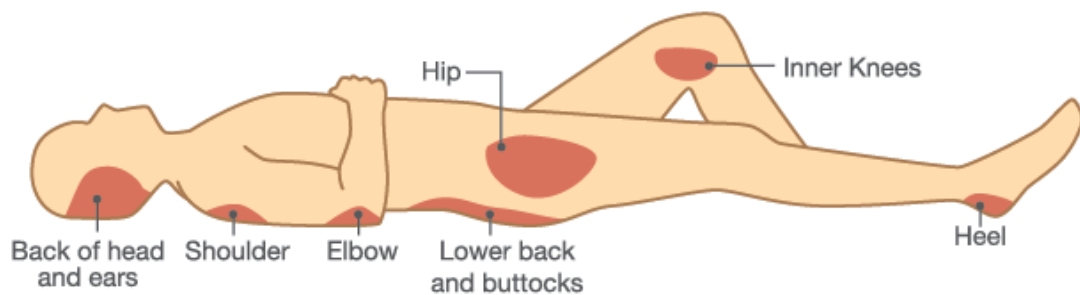


## Where to Assess for DTPIs Vs. Stage 1 Injuries

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- Bony prominents
  - Sacrum, bilateral hips, heels, shoulder bones, elbows
- Areas that sustain pressure or shear
  - Ischials, buttocks



Blenman J, Marks-Maran D. 2017

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## Where to Assess for DTPIs Vs. Stage 1 Injuries

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- Mechanical device areas of injury
  - Underneath a tracheostomy collar, beneath compression hose, under the tubing of a urinary catheter, beneath the ears of a patient wearing a nasal cannula, BIPAP, or CPAP
  - Splints
    - Hands, wrists, feet

Blenman J, Marks-Maran D. 2017

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## Poll Question 1

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How long have you been working with prevention or treatment of wounds?

- A. 1 year
- B. 2 to 3 years
- C. 4 to 10 years
- D. Greater than 10 years

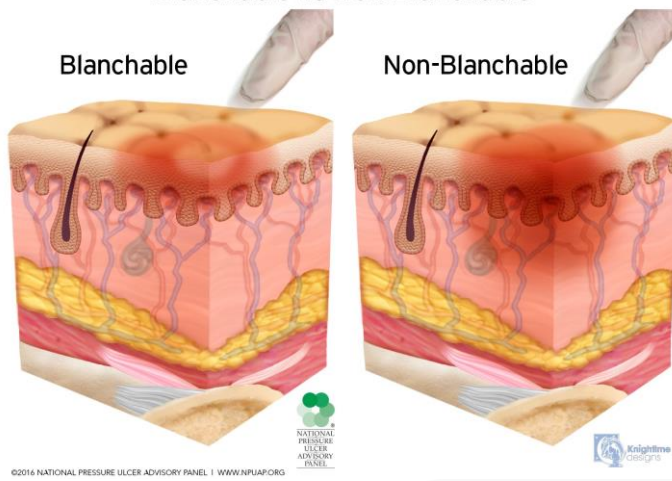
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# Blanchable Skin

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## Blanchable vs Non-Blanchable



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# Stage 1 Injury

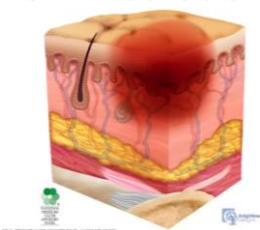
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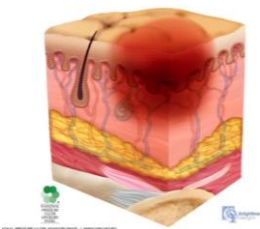


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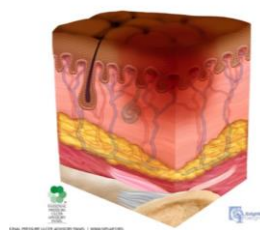
### Stage 1 Pressure Injury - Lightly Pigmented



### Stage 1 Pressure Injury - Edema



### Stage 1 Pressure Injury - Darkly Pigmented



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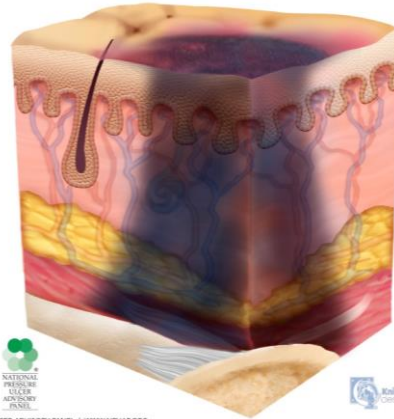
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## DTI's

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## Deep Tissue Pressure Injury

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## Distinguishing Stage 1 vs. DTIs

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- Good lighting
- Perform a thorough skin assessment
- Turn the patient from side to side and assess all areas that can sustain pressure



Blenman J, Marks-Maran D. 2017

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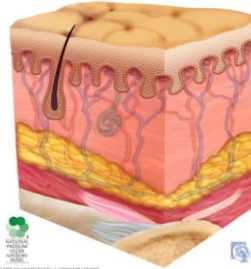
## Distinguishing Stage 1 vs. DTIs

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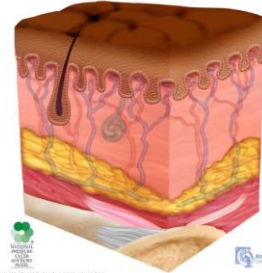
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- See if the patient's skin tone is darker than his/her normal skin tone
- Stand close to the patient with good lighting and compare the other side to see if there is any difference in skin tone

Healthy Skin – Lightly Pigmented



Healthy Skin – Darkly Pigmented



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## Distinguishing Stage 1 vs. DTIs

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DTIs and Stage 1 injuries are much more difficult to find on darker skin tones.



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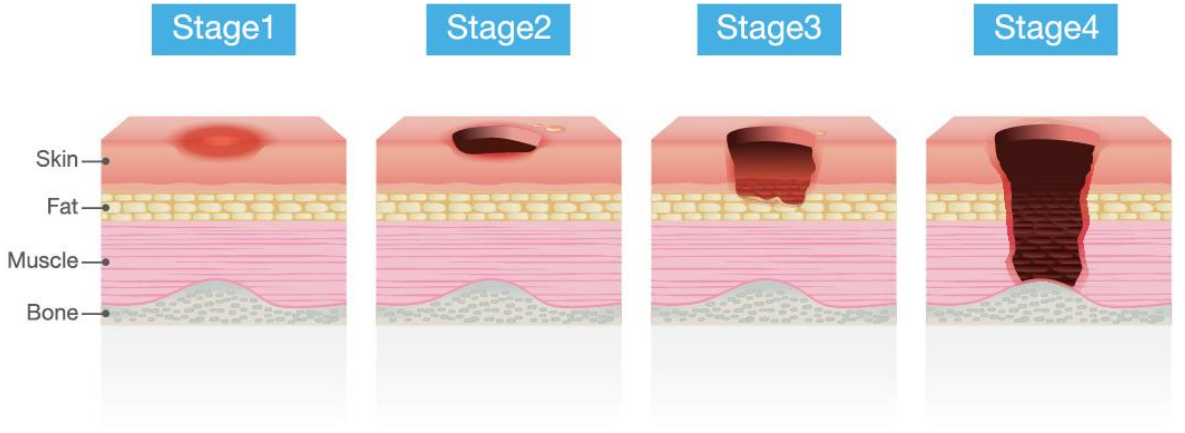
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# Stages



# Multiple Skin Tones



## Poll Question 2

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It is always similarly easy to distinguish skin injury in both lighter and darker skin tones.

- A. Agree
- B. Disagree

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## Complete a Risk Assessment

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- We must look at the patient as a whole, not the hole in the patient!
  - Don't just look at skin.
  - Look at the patient's medications.
  - Look at the patient's history for acute and chronic diseases present.
  - Look at the patient's mobility.
  - Look and see if the patient is continent.
  - Look at nutritional status.

Leaker SH. 2013; Preventing pressure ulcers in hospitals: Are we ready for the change?

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## Complete a Risk Assessment

- There are many risk assessment tools.
  - Injury risk tools:
    - Braden and Norton Scales
  - Validated nutrition screening tools:
    - Mini Nutritional Assessment (MNA)
    - Malnutrition Screening Tool (MST)
    - Malnutrition Universal Screening Tool (MUST)
    - Nutrition Risk Screening (NRS)

## Complete a Risk Assessment on Every Patient



## Complete a Risk Assessment

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- The **nutrition** risk assessment may consider:
  - Dental health (teeth, no teeth, poor oral hygiene)
  - Chewing and swallowing difficulties, ability to feed oneself, nausea, vomiting, GI upset
  - Medical/surgical history of diseases (Celiac disease, Crohn's disease, ostomy surgery)
  - Psychological factors: anorexia, fatigue, ability to buy and obtain food, preferences, cultural influences

Shashidhar HR, Grigsby DG. 2016

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## Complete a Risk Assessment

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- Nutrition assessment
  - Undernourished/malnutrition
    - Has the patient lost 10 pounds or more in the past month?
    - Is the patient eating less or skipping meals?
    - Does the patient have chronic diseases or medications that may decrease absorption or increase needs (e.g., cancer, chemotherapy, corticosteroids, autoimmune drugs, etc.)?
    - Is altered mental status present?



Cass H. 2016; Litchford, M. 2016

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## Complete a Risk Assessment

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- Assessment
  - Incontinence of stool and/or urine
  - Immobility
  - NPO or on liquids three to five days
  - On vasopressors for BP support > 24 hours
  - Inability to feel sensations
    - Quadriplegia, paraplegia, diabetic neuropathies
  - On the ventilator > three to five days without nutritional support

Cass H. 2016; Litchford, M. 2016

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## Complete a Risk Assessment

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- Nutrition assessment
  - All wounds initiate the inflammatory response.
    - Albumin, prealbumin decrease in inflammatory states
    - C-reactive protein and ferritin rise with an inflammatory response
  - CBC can provide info about anemia
    - Iron, folate, Vitamin B-12
  - WBC
    - If high, does the patient have an infection?
    - If low, does the patient have neutropenia or leukemia?

Cass H. 2016; Litchford, M. 2016

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## Complete a Risk Assessment

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- Nutrition assessment
  - Transferrin determinants are much better indicators for protein status and iron deficiencies than albumin.
  - Due to inflammation, albumin and prealbumin are not good indicators of nutritional status
- Malnutrition characteristics
  - Insufficient energy intake
  - Weight loss
  - Loss of body fat
  - Loss of muscle mass
  - Accumulation of fluid
  - Reduced grip strength

Cass H. 2016; Litchford, M. 2016; Nutrition and wound healing: nutritional assessment; Hypoalbuminemia

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## Poll Question 3

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A nutrition assessment is just as important as a skin assessment.

- A. Agree
- B. Disagree

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## Nutrition

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- Nutrition plays a vital role in the prevention and healing of all pressure injuries.
  - If the patient is unable to acquire the protein and vitamins and minerals needed, ask the healthcare provider to order supplements.
    - Protein powder; arginine and glutamine (amino acids)
    - Multivitamin with zinc and vitamin C



Shashidhar HR, Grigsby DG. 2016

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## Pressure Relief

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As a certified wound ostomy nurse, I can say nutrition and pressure relief are the two most important factors to prevent and heal pressure injuries.



Payne D. 2016

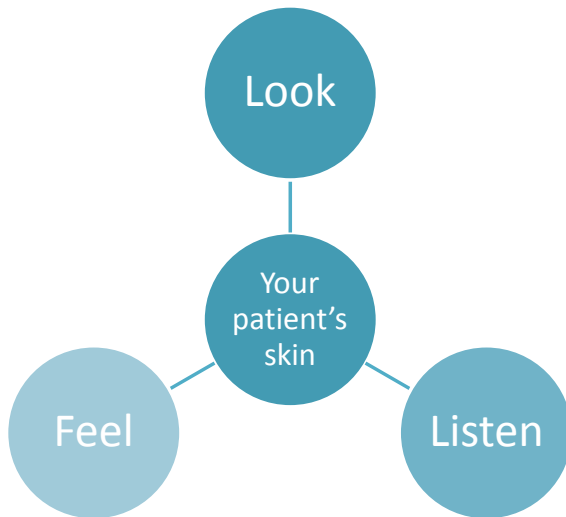
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## Prevention of Pressure Injuries

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Payne D. 2016

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- Turn your patients every two hours.
  - Nurses are not the only ones who can reposition patients.
- If a patient refuses turning, reposition the patient every two hours, even if the reposition is a simple shift.

## Prevention of Pressure Injuries

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- Get your patient up in a chair if the patient is able.
- Ambulate your patient in the room or hallway if he or she is able.
- After a bath, moisturize the patient's skin.

Payne D. 2016

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## Prevention of Pressure Injuries

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- If the patient is at high risk of a pressure injury, consult the Registered Dietitian.
- If your patient cannot feed him/herself, feed the patient or make sure someone feeds the patient.
- Document the amount eaten for every meal.

Payne D. 2016; Shashidhar HR, Grigsby DG. 2016

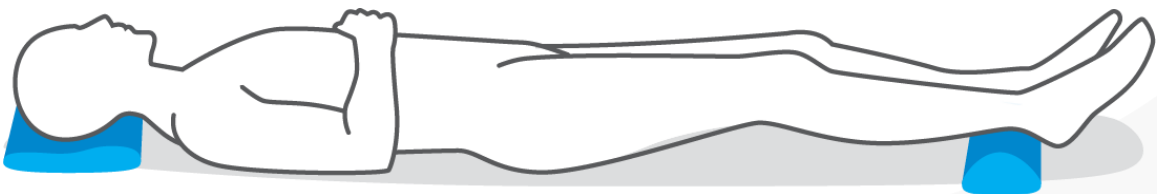
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## Prevention of Pressure Injuries

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- Elevate the patient's heels on a small pillow off the mattress to decrease pressure on the heels.
- If your patient's elbows are getting red, place a transparent waterproof film dressing on both elbows.



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## Prevention of Pressure Injuries

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- If a patient is wheelchair bound, be sure he or she has a pressure relief cushion at all times in the wheelchair.
  - Seek consultation with the OT or PT to evaluate fit, necessary adaptations, and pressure-reducing strategies.
- Provide education and training from OT or PT regarding shifting weight while in a seated position.

Payne D. 2016; Shashidhar HR, Grigsby DG. 2016

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## Prevention of Pressure Injuries

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- We see a lot of patients who stay in their recliners all day and night.
- A pressure relief cushion in the recliner may help.
- Teach them to shift their weight around in the recliner.



Payne D. 2016; Shashidhar HR, Grigsby DG. 2016

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## Prevention of Pressure Injuries

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- If your patient is unable to get up, get help and dangle the patient at the bedside.
- Never massage a red area.
- If your patient is incontinent, be sure to use a skin barrier paste to protect the patient's skin.

Payne D. 2016; Shashidhar HR, Grigsby DG. 2016

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## Prevention of Pressure Injuries

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- Never use diapers unless you are getting your patient up to the chair.
- Diapers hold moisture on the skin and may cause breakdown much earlier than pads.
- Use only a draw sheet and one pad under your patient if he or she is incontinent.

Payne D. 2016; Shashidhar HR, Grigsby DG. 2016

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## Prevention of Pressure Injuries

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- The more padding placed under the patient, the higher the risk the patient has of shearing and breaking down.
- If your patient has continued stooling, place a fecal pouch on the patient to protect skin.

Payne D. 2016; Shashidhar HR, Grigsby DG. 2016

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## Prevention of Pressure Injuries

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Use only one pillow to the upper back and between the knees when turning patients.



Payne D. 2016; Shashidhar HR, Grigsby DG. 2016

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## Poll Question 4

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Which is an accurate statement?

- A. All patients will develop a pressure injury if turned every four hours.
- B. Preventing shear injuries is just as important as repositioning.
- C. Preventing skin injury is impossible.
- D. The newest terminology for skin breakdown is "pressure ulcer."

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## Collaboration with Interdisciplinary Team

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- Every person who cares for the patient is important to the plan of care.
- Every discipline works in its own unique way to improve the patient's quality of care and safety.
- We should always respect and communicate with other disciplines working with our patients.

Payne D. 2016; Shashidhar HR, Grigsby DG. 2016

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## Registered Dietitians: Prevention and Wound Healing

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- Perform a nutrition assessment
  - Determines if at risk
  - Determines nutritional needs: protein, calories, supplements
- Explores the undernutrition/malnutrition continuum
- Examines the type of wound(s) the patient has
- Provides for nutritional needs of the patients:
  - Dietary supplements and vitamin and mineral supplements to meet patients' needs if intake inadequate

Payne D. 2016; Shashidhar HR, Grigsby DG. 2016; Stuque AG, Sasaki VDM, da Silva Teles AA., de Santana ME, Rabeh SAN, Sonobe HM. 2017

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## Occupational Therapists: Prevention and Wound Healing

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- Assesses and determines adaptations needed to facilitate ADLs, transfers, and positioning.
- Reports information to nursing when suspected pressure injuries are observed
  - Skin redness, breakdown, etc.
- Ensures proper splinting and proper fitting of assistive devices.
- Helps with interventions for spinal cord injuries.
- Assesses wheelchair fit, function, and necessary adaptations.

Roberts PS, Robinson MR. 2014

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## Occupational Therapists: Prevention and Wound Healing

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- Discuss habit-change strategies to supplement education in pressure injury-prevention techniques.
- Remember barriers to pressure injury prevention.
  - Resources, equipment, education



Fogelberg DJ, Powell JM, Clark FA. 2016; Worsley PR, Clarkson P, Bader DL, Schoonhoven L. 2016

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## Pharmacists: Prevention and Wound Healing

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- Assess home medications and current medications.
  - Look for any medications that might contribute to incontinence.
- Recommend products to help with prevention of injury, wound healing, debridement, etc.
- Talk to the patients about medications and any changes needed.
- Compound various medications to help with wound healing.
- Help with turning and readjustments when at bedside.

Preventing pressure ulcers in hospitals: Are we ready for the change?

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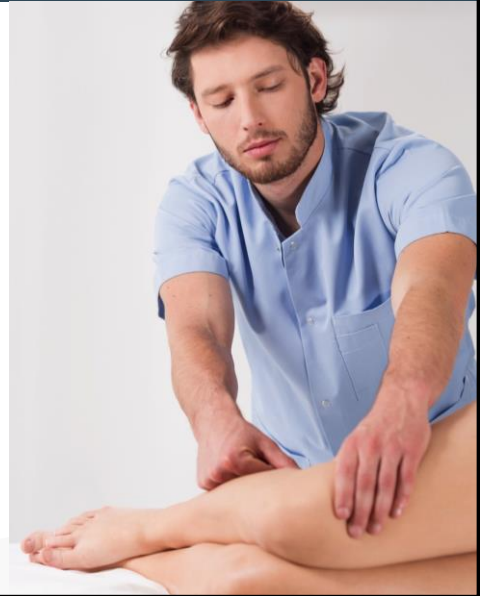


## Physical Therapists: Prevention and Wound Healing

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- Dangle the patients' legs at the bedside for repositioning.
- Help patients exercise while in bed.
- Ambulate patients in the room and hallway.
- Transfer patients to a chair and back to the bed.
- Help with proper positioning and assist with daily functioning activities.
- Help to restore, maintain, and promote optimal functioning.



Preventing pressure ulcers in hospitals: Are we ready for the change?

## Physical Therapists: Prevention and Wound Healing

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- Some physical therapists are trained specifically in wound care.
- In some facilities, PTs perform bedside debridement and dressing changes.
  - They use pulsed lavage, wound vacs, whirlpools, etc.

Preventing pressure ulcers in hospitals: Are we ready for the change?

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## CWON: Prevention and Wound Healing

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- Certified Wound Ostomy Nurses specialize in assessing and treating any kind of wounds or ostomies.
- They work closely with other disciplines to ensure quality patient care.
- They write policies and protocols for pressure injury/ulcer committees and work with other disciplines.

Preventing pressure ulcers in hospitals: Are we ready for the change?; National pressure ulcer advisory panel

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## Nursing, Prevention, and Wound Healing

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- Nurses are at the forefront of patient care and need to assess a patient's skin upon admission, every shift, after any test/procedure, upon transfers, and at discharge.
- Nurses are responsible for providing skin care.

Preventing pressure ulcers in hospitals: Are we ready for the change?; National pressure ulcer advisory panel

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## Interprofessional Teamwork

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	Nurse	Physical Therapist	Dietitian	Pharmacist	OT	Nursing assistant
Identify signs/symptoms	✓	✓	✓		✓	✓
Assess and/or monitor progression	✓	✓	✓	✓	✓	
Prevention	✓	✓	✓	✓	✓	✓
Implement interventions	✓	✓	✓	✓	✓	✓
Communicate changes in patient condition	✓	✓	✓	✓	✓	✓

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## Treatment of Pressure Injuries

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- Maintain organizational protocols and policies.
- Ensure redistribution of pressure.
- Alleviate shear and friction if possible.
- Keep the head of bed (HOB) at or below 30 degrees.
- Listen to your patient: Pain is injury.

Taylor C. 2016; Thorpe E. 2016

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## Treatment of Pressure Injuries

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- Nutrition and pressure relief are the two best remedies for prevention and treatment of pressure injuries.
- Unless the patient is on tube feedings, keep the head of the bed at or below 30 degrees.
- Turn the patient every 2 hours.



Taylor C. 2016; Thorpe E. 2016

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## Treatment of Pressure Injuries

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- Consult the registered dietitian for nutritional needs.
- Assess the skin in good lighting every shift and prn.
- If the patient is incontinent, keep the patient as clean and dry as possible.

Taylor C. 2016; Leaker SH. 2013

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## Treatment of Pressure Injuries

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- Use barrier cream for incontinence.
- If a patient is very thin, he or she may require a specialty bed, such as an air mattress.
- Dangle the at-risk patient's heels on a pillow.

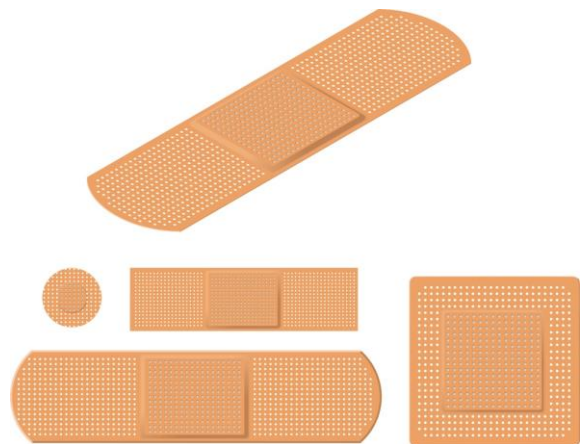
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## Treatment of Pressure Injuries

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- Use a foam dressing for prevention and/or treatment
- Consult a Certified Wound Ostomy Nurse



Brown J. 2016; Byrne J, Nichols P, Sroczynski M, et al. 2016

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## Pressure Injury Costs

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- Medicare guidelines:
  - Medicare believes that pressure injuries are preventable along with falls and infections such as pneumonia and *C. difficile*.
  - Medicare will not pay anything on a hospitalization where a pressure injury has occurred.
  - Most insurances follow what Medicare pays.

Rau J. 2016

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## Pressure Injury Costs

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There are more than 2.5 million patients each year who have pressure injuries.



The cost of pressure injuries ranges from \$9.1 to \$11.6 billion yearly in the U.S.



Costs for each patient range from \$20,900 to \$151,700 for ulcers.

Preventing pressure ulcers in hospitals: Are we ready for the change?; Rau J. 2016

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## Pressure Injury Costs

- More than 17,000 people sue regarding pressure injuries yearly.
- Pressure injuries are the second highest claim after wrongful deaths and falls.
- Approximately 60,000 patients die yearly from pressure injuries.

## PREVENTION



## Prevention

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"An ounce of prevention is worth a pound of cure."

-Benjamin Franklin

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A. Yes

B. No

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The Nurse.com site will be down for maintenance until Tuesday, July 18<sup>th</sup> at 2:00AM ET. The posttest, evaluation, survey and transcript will be available on Tuesday, July 18<sup>th</sup> at 2:00AM ET.

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## Questions

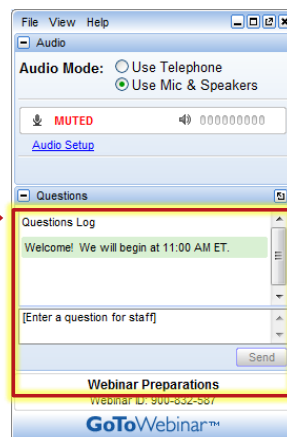
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Thanks again for your participation!