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## Pressure Ulcer Overview

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## *Pressure Ulcer Overview*

### **Definition**

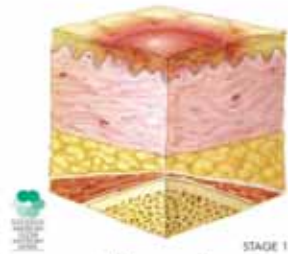
A localized injury to the skin and/or underlying tissue, usually over a bony prominence, as a result of pressure or pressure in combination with shear. A number of contributing or confounding factors are also associated with pressure ulcers; the significance of the factors has yet to be elucidated.\*

\* NPUAP/EPUAP International Guidelines 2009

## Pressure Ulcer Overview

### Stages – Stage 1

- ◆ Non-blanchable erythema of a localized area, usually over a bony prominence
- ◆ Discoloration of the skin; warmth, edema, hardness, or pain may also be present



*Note: Darkly pigmented skin may not have visible blanching*



## Pressure Ulcer Overview

### Stages – Stage 1 *continued...*

- ◆ Compared to adjacent tissue, the area may be more
  - painful
  - firm or soft
  - warm or cool
- ◆ Pressure ulcers (PrUs) may be difficult to notice in individuals with darker skin tones
- ◆ Presence of a PrU may indicate an at-risk individual



## Pressure Ulcer Overview

### Stages – Stage 2

- ◆ Partial thickness
- ◆ Loss of dermis presenting as a shallow open ulcer with a red/pink wound bed without slough
- ◆ Bruising indicates deep tissue injury
- ◆ May also present as an intact, open/ruptured serum-filled or sero-sanguinous-filled blister



## Pressure Ulcer Overview

### Stages – Stage 2 *continued...*

- ◆ Presents as a shiny or dry shallow ulcer without slough or bruising
- ◆ This is not used to describe
  - skin tears
  - tape burns
  - incontinence-associated dermatitis
  - maceration
  - excoriation



## Pressure Ulcer Overview

### Stages – Stage 3

- ◆ Full thickness tissue loss; subcutaneous fat may be visible, but bone, tendon, or muscle are NOT exposed
- ◆ Some slough may be present
- ◆ May include undermining and tunneling



## Pressure Ulcer Overview

### Stages – Stage 3 *continued...*

- ◆ Depth varies by anatomical location
  - The bridge of the nose, ear, occiput and malleolus do not have adipose tissue and can be shallow
  - Areas of significant adiposity can develop extremely deep PrUs
- ◆ Bone is not visible or directly palpable

## Pressure Ulcer Overview

### Stages – Stage 4

- ◆ Full thickness tissue loss with exposed bone, tendon, or muscle
- ◆ Slough or eschar may be present
- ◆ Often includes undermining and tunneling



## Pressure Ulcer Overview

### Stages – Stage 4 *continued...*

- ◆ Depth varies by anatomical location
  - The bridge of the nose, ear, occiput and malleolus do not have adipose tissue and can be shallow
  - Can extend into muscle, and/or supporting structures (e.g., fascia, tendon, or joint capsule), making osteomyelitis likely to occur
- ◆ Bone/muscle is visible or directly palpable




### Pressure Ulcer Overview



#### Stages – Unstageable

- ◆ Full thickness tissue loss
- ◆ Actual depth completely obscured by slough or eschar in the wound bed
- ◆ Until slough/eschar is removed from the base, the true wound depth cannot be determined

*Note: Stable eschar (dry, adherent, intact, without erythema or fluctuance) on the heels serves as "the body's natural (biological) cover" and should not be removed*



UNSTAGEABLE

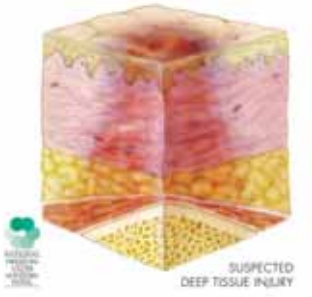



### Pressure Ulcer Overview




#### Stages – Suspected Deep Tissue Injury (SDTI)

- ◆ Purple or maroon localized area of discolored, intact skin or blood-filled blister

due to underlying soft tissue damage from pressure and/or shear



SUSPECTED DEEP TISSUE INJURY

## *Pressure Ulcer Overview*

### **Stages – SDTI *continued...***

- ◆ Area may be painful, firm, mushy, boggy, warmer or cooler than the adjacent tissue
- ◆ May be difficult to detect in individuals with darker skin tones
- ◆ Evolution may include a thin blister or a dark wound
- ◆ May evolve to become covered with eschar
- ◆ Evolution may be RAPID even with treatment



## *Pressure Ulcer Overview*

### **Causes of PrUs**

- ◆ Extended PRESSURE that blocks blood flow to the tissue between the source of pressure and bone
- ◆ Prolonged PRESSURE
  - Duration and intensity of pressure
  - Location and intensity on body



## *Pressure Ulcer Overview*

### **PrU Etiology**

- ◆ PRESSURE >32 mmHg exerted by bony prominences on the body
- ◆ PRESSURE stops blood flowing through the capillaries to the tissues
- ◆ Disrupted blood flow deprives tissues of oxygen and nutrients, causing cell death



## *Pressure Ulcer Overview*

### **PrU Etiology *continued...***

- ◆ Function of both time and pressure (hyberbolic curve)
  - 70 mmHg pressure for two hours produces irreversible injury
  - Greater pressure takes shorter amount of time
  - Lower pressure takes more time
  - Turning schedules must be individualized



## *Pressure Ulcer Overview*

### **Mechanisms That Lead to Tissue Damage**

- ◆ Ischemia as a result of sustained deformation of soft tissues will lead to hypoxia, blocking of nutrient supply, and blocking of the removal of waste products
- ◆ The deprivation of nutrients and the change of pH due to waste products leads to tissue damage



## *Pressure Ulcer Overview*

### **Mechanisms That Lead to Tissue Damage *continued...***

- ◆ Damage to tissue will result almost immediately, and duration of time that involves pressure varies among tissue types (muscle, fat, bone)
- ◆ Reperfusion that follows a period of prolonged ischemia may increase the degree of tissue damage because it involves release of harmful oxygen-free radicals



## *Pressure Ulcer Overview*

### **Most Common Sites**

- ◆ Sacrum (tail bone): most common site
  - Semi fowler's position
  - Slouching in bed or chair
  - Higher risk in tube fed or incontinent
- ◆ Heels: 2nd most common
  - Immobile or numb legs
  - Leg traction
  - Higher risk in PVD or DM



## *Pressure Ulcer Overview*

### **Most Common Sites *continued...***

- ◆ Trochanter (hip bone)
  - Side lying
  - Highest risk: contracted residents
  - Ulcers on lateral foot rather than heel itself
- ◆ Ischium: (sitting erect)
  - Highest risk in paraplegics



## *Pressure Ulcer Overview*

### **Other PrU-Causing Sources of Pressure**

- ◆ Medical Devices such as
  - Boots/Boot straps
  - Heel protectors/protector straps
  - Oxygen tubing
- ◆ Weight (skin-on-skin)
- ◆ Any device that can lead to PRESSURE induced ischemia on the skin
- ◆ Stockings



## *Pressure Ulcer Overview*

### **Morbidity and Mortality**

- ◆ Pain
- ◆ Infection
- ◆ Quality of life
- ◆ Death
- ◆ Financial burden



*Pressure Ulcer Overview*

**What Stage and Why?**



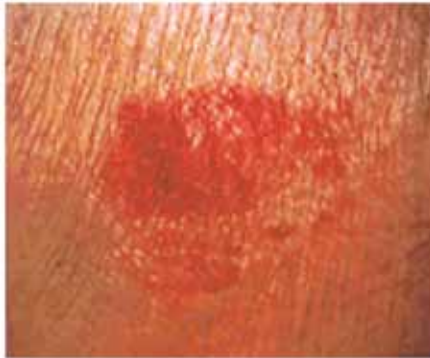
*Pressure Ulcer Overview*

**What Stage and Why?**



*Pressure Ulcer Overview*

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**What Stage and Why?**



*Pressure Ulcer Overview*

**What Stage and Why?**




**any. questions.**


The NPUAP/EPUAP International Guidelines for Prevention and Treatment of Pressure Ulcers is available at:

<http://www.NPUAP.org>

[www.qsource.org](http://www.qsource.org)



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**thank. you.**

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