



## Skin Care and Prevention of Pressure Injuries: What Are Pressure Injuries?

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After reading the newsletter, the home health aide should be able to:

1. Describe the normal skin layers.
2. List two forces that cause pressure injuries and actions that cause them.
3. Identify three risk factors for development of pressure injuries.
4. Define the types and stages of pressure injuries.

According to data from the US Department of Health and Human Services, 2.5 million Americans develop pressure ulcers each year, and about 60,000 die annually as a direct result of these injuries. In addition, pressure ulcers can cause pain, infection, loss of function and prolonged hospitalization, and increase healthcare costs by over \$10 billion per year. In most cases, proper care can prevent the development of pressure ulcers, sparing the person the pain, disability and expense that pressure ulcers can create.

This newsletter will discuss the definition, incidence and causes of pressure ulcers in the home care client. Normal skin structure, risk factors for pressure ulcers and stages of injury will be covered.

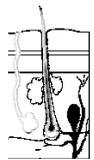
### What Are Pressure Ulcers/Injuries?

In April of 2016, the National Pressure Ulcer Advisory Panel (NPUAP) changed the term "pressure ulcer" to "pressure injury." This was done to reduce confusion and more accurately describe the condition, since the term "pressure ulcer" was previously used to describe both areas of intact skin and ulcerated skin.

The NPUAP defines pressure injury as "localized damage to the skin and/or underlying soft tissue,

usually over a bony prominence or related to a medical or other device."

To see how these injuries occur, it is helpful to understand the structure of the skin. The skin has three main layers, all of which perform specific functions for the body. The first and outermost layer is the epidermis. This is the layer you see when looking at the skin, as it forms the protective barrier between the body and the outside environment. The epidermis continuously creates new skin cells, which are pushed up to the skin surface and eventually shed.



The second, and thickest, skin layer is the dermis, made of strong, elastic tissue called collagen. This layer provides structure and support to the skin. It contains blood vessels, nerve endings, hair follicles, oil glands and sweat glands.

The innermost skin layer is the subcutaneous tissue. This is a fatty layer that helps to regulate body temperature and cushion the muscle, bone and connective tissue such as cartilage, ligaments and tendons, that lie under this layer. All of these layers receive oxygen and nutrients from a large network of blood vessels in the area.

### Causes and Risk Factors

Pressure injuries are caused when enough pressure is placed on

the skin to compress the blood vessels in an area, and/or when shear force occurs. Excess pressure can occur when the client lies in one position for too long. Shearing occurs when the weight of the client's body pulls and stretches the skin layers, reducing blood flow. This can happen when the client slides down in the bed or is slumped in a chair. Shearing can also occur just by lying flat, as the weight of internal body structures pulls on the skin layers.



Pressure and shear force most commonly cause damage to bony areas, such as the back of the head, shoulder blades, elbows, hips, sacrum and heels. Without adequate blood flow to provide oxygen and nutrients, the skin becomes damaged and dies. This may result in a red or purple area of intact skin, or an open sore, also called an ulcer. Without treatment, the ulcer may get deeper and deeper, affecting the lower skin layers, such as the dermis and subcutaneous tissue. When these layers are gone, the underlying muscle, bone and connective tissue may be exposed and damaged.

Another important factor in the development of pressure injuries is the temperature and moisture at the skin surface. This is referred to as the microclimate, similar to "weather conditions" near the skin. Skin temperature that is higher or lower than normal tends to increase the cells' needs for oxygen and nutrients. When these needs cannot be met by circulating blood, pressure injuries become more likely. Increased moisture of the skin can weaken the skin structure, also making it more susceptible to pressure injuries.

There are many risk factors that place clients at increased risk for pressure injuries, but the most important risk factor is immobility. Clients who spend many hours in a bed or chair, and especially those who cannot move themselves, are at highest risk for pressure injuries. Other risk factors include:

- advanced age
- poor nutrition and hydration
- incontinence, which causes increased moisture
- poor circulation due to heart failure or low blood pressure
- decreased sensation, such as diabetic neuropathy

The NPUAP states that most pressure injuries are preventable, but some are not. Some conditions make the development of pressure injuries highly likely, even if all proper precautions are taken. Some of these conditions include diabetes, cancer, sepsis, low blood pressure and sedation.

### The Types and Stages of Pressure Injuries

The severity of pressure injuries depends on how many skin and tissue layers have been affected. Staging of pressure injuries is done to describe the degree of tissue damage that has occurred:

- **Stage 1, intact skin:** Skin is intact and reddened or dark; does not blanch (turn lighter) to touch
- **Stage 2, partial thickness skin loss:** A shallow ulcer forms down to the dermis, with moist, pink or red tissue visible.
- **Stage 3, full thickness skin loss:** The ulcer extends down to the subcutaneous tissue, exposing the fat. Slough or eschar may be seen in the ulcer. Slough is moist, dead tissue that may be yellow, tan, green or brown in color. Eschar is leathery, dry dead tissue that may be black, brown or tan.
- **Stage 4, full thickness skin and tissue loss:** The ulcer extends down to and past the subcutaneous tissue, exposing muscle, bone and/or other connective tissues. Slough or eschar may be present in the wound.
- **Unstageable pressure injury:** When slough or eschar covers a stage 3 or 4 wound, and the type of tissue at the bottom of the wound cannot be seen, the stage cannot be accurately determined.
- **Deep tissue pressure injury:** This wound may have intact skin or an open ulcer, along with deep red, maroon or purple discoloration that does not blanch with pressure. It is caused by severe pressure that damages deep tissue layers. Deep tissue injuries occur most commonly on the heels, usually in clients with agitation/delirium and those who frequently push themselves up in bed using their heels.
- **Medical device-related pressure injury:** This category of pressure injury describes the cause of the wound, rather than staging. This injury results from the pressure of medical equipment or devices on the skin, such as oxygen masks or tubing and urinary catheters. The wound is staged based on the affected skin layers, as described above.



By having an understanding of how pressure injuries occur, which clients are at highest risk, and how pressure injuries are staged, the home health aide can more effectively help to identify and prevent these wounds. A future newsletter issue will cover prevention and treatment of pressure injuries.



**Skin Care and Prevention of Pressure Injuries**  
**What Are Pressure Injuries?**

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

Directions: Place the letter of the one best answer in the space provided.

- \_\_\_\_ 1. Pressure injuries may cause which of the following?  
A. pain  
B. increased healthcare costs  
C. death  
D. all of the above
- \_\_\_\_ 2. The thickest skin layer, containing sweat and oil glands, is the:  
A. subcutaneous tissue  
B. epidermis  
C. connective tissue  
D. dermis
- \_\_\_\_ 3. Pressure injuries are most likely to develop on areas of the body having a thick fat layer.  
A. True  
B. False
- \_\_\_\_ 4. The main cause of pressure injuries is:  
A. increased temperature of an area  
B. inflammation of an area  
C. reduced blood flow to an area  
D. a previous injury to an area
- \_\_\_\_ 5. Shear force can occur when the client is lying flat.  
A. True  
B. False

- \_\_\_6. Guidelines of the NPUAP state that pressure injuries can be prevented in:
- A. very few cases
  - B. some cases, but not most cases
  - C. most cases, but not all cases
  - D. all cases
- \_\_\_7. According to the NPUAP, the most important risk factor for the development of pressure injuries is:
- A. poor nutrition
  - B. immobility
  - C. friction
  - D. advanced age
- \_\_\_8. Based on NPUAP guidelines, a pressure injury is staged by:
- A. measuring the depth of the wound using a cotton swab and ruler
  - B. counting how many days the pressure injury has been present
  - C. noting the amount of drainage in the wound
  - D. observing the type of tissue exposed in the wound
- \_\_\_9. Based on NPUAP guidelines, a pressure injury that is open down to bone, muscle and connective tissue is described as stage:
- A. 1
  - B. 2
  - C. 3
  - D. 4
- \_\_\_10. Pressure injuries can be caused by medical equipment, such as urinary catheters and oxygen tubing.
- A. True
  - B. False

