Diabetic Foot Ulcers VS Pressure Ulcers

It is crucial to apply a standardized measurement system to evaluate whether a diabetic foot ulcer is responding to care, as a result several classification systems have been proposed.

The Wagner Diabetic Foot Ulcer Grade Classification System

The Wagner diabetic foot ulcer classification system assesses ulcer depth and the presence of osteomyelitis or gangrene by using the following grades:

Grade 0 – intact Skin

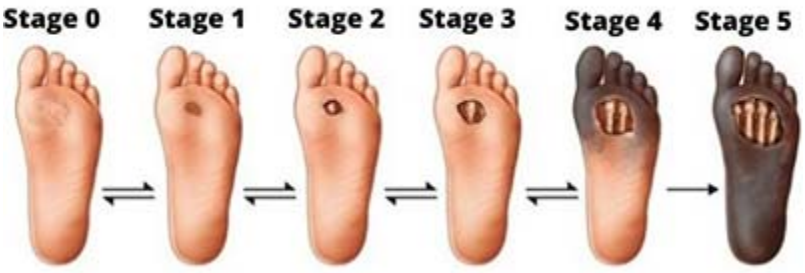
Grade 1 – superficial ulcer of skin or subcutaneous tissue

Grade 2 – ulcers extend into tendon, bone, or capsule

Grade 3 – deep ulcer with osteomyelitis, or abscess

Grade 4 – partial foot gangrene

Grade 5 – whole foot gangrene




Note: While the wound shown in the above image may appear to be a grade 3 ulcer, upon assessment no abscess or osteomyelitis was found. Beneath the superficial necrotic tissue was exposed tendon.

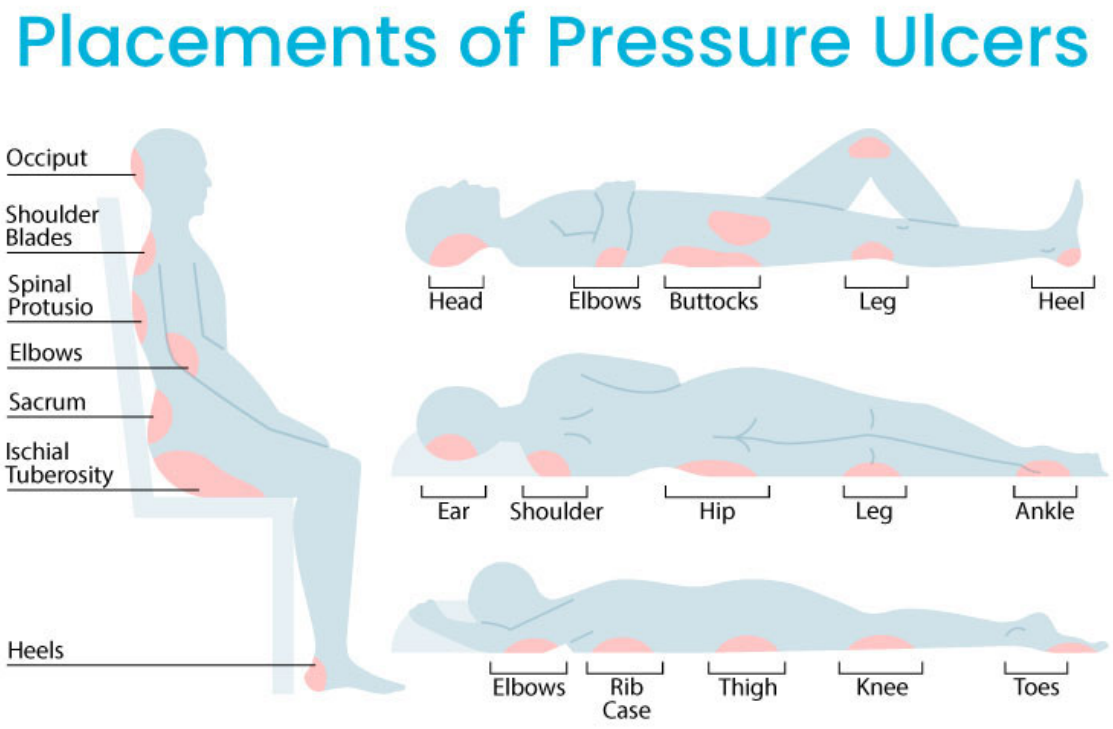
In evaluating a patient with a wound on the foot, a question that often comes to mind is whether that wound is caused by pressure, diabetes mellitus (DM), ischemia, trauma, or a combination.

One of the bigger challenges that many clinicians face is trying to determine the etiology of a foot ulcer.

PRESSURE ULCER

“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. The injury occurs as a result of intense and/or prolonged pressure or pressure in combination with shear.

The heel is the second most common site for the development of pressure ulcers, accounting for up to 28% of all pressure ulcers.



ALL DIAGNOSED AS PRESSURE ULCERS

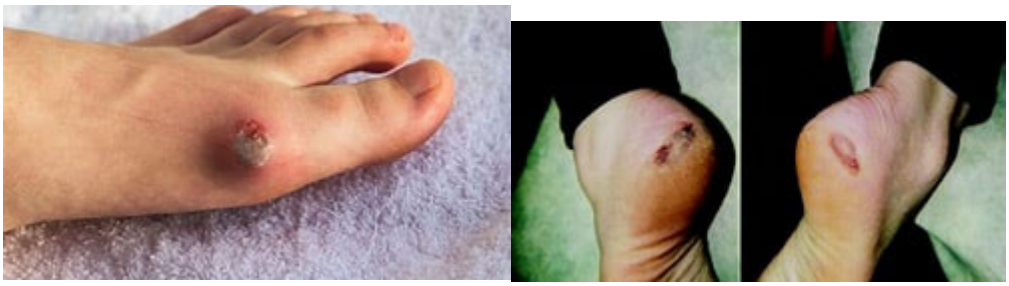


Fig 2. **Non-blanchable erythema: category 1 p**

Diabetic Foot Ulcers

In evaluating a foot wound, it is imperative to obtain a complete history and to perform a comprehensive evaluation to determine the etiology of the wound and factors contributing to its development.

A DFU is an open sore or wound on the foot of a person with DM, and it is most commonly located on the plantar surface, or bottom of the foot.

Of those who develop a DFU, 6% will be hospitalized for infection or another ulcer-related complication.

The risk of foot ulceration and limb amputation increases with age and the duration of DM.

Clinical Questions for Determining Etiology

It is obvious that there is overlap between definitions; however, taking a closer look at risk factors and clinical findings will establish an appropriate cause and can inform further treatment.

History: Is the patient diabetic? If so, then DFU is a possibility. In a patient who does not have DM and there is an index of suspicion, one may consider a hemoglobin A1c (Hgb A1c) test if the patient is over the age of 45 and has a body mass index >25

kg/m2. A patient with an elevated Hgb A1c (>6.4) should be referred to the primary care provider for further medical evaluation.

Both type 1 and type 2 diabetes can be associated with diabetic foot ulcers.

History of previous amputations involving the foot: Is there a history of previous toe or partial foot amputations? This strongly suggests that the wound may be a DFU. Patients with previous amputations and history of DM are at significantly higher risk for the development of recurrent ulcers.

Mobility: Is the patient ambulatory or has minimal mobility issues? Patients with decreased or limited mobility decreased level of consciousness, or cognitive impairment may lack the ability to offload pressure to the feet, thereby increasing the risk for the development of pressure ulcers.

Neuropathy: Does the patient have a history of neuropathy or a loss of protective sensation? It is often said in the wound care community that “pain is the gift that no one wants.” In a patient with severe sensory neuropathy, an ulcer can easily develop if there is decreased or abnormal sensation to the foot. In such a case, patient may develop a full-thickness ulcer before even being aware that a problem exists. In general, patients with diminished pain responses as a result of neuropathy are more likely to be experiencing DFUs rather than pressure ulcers.

Foot deformities: Is there an obvious foot deformity? Many patients with DM have deformities such as Charcot foot in which the architecture of the foot becomes deranged and causes changes in pressure points in the foot. This, in turn, increases the risk of development of wounds related to DM.

Trauma: Is there a history of trauma? If so, what is the history of the trauma? Is it caused by a wound obtained during a transfer or by inadvertently stubbing the toe? Is it a wound caused by persistent forces on the foot during ambulation as a result of footwear or repetitive trauma?

Pressure Injury	Diabetic Foot Ulcer
Friction	Trauma (repetitive)
Shear	Pressure
Pressure	Neuropathy
Immobility	Peripheral arterial disease
Cognitive impairment	Metabolic or endocrine disease
Nutrition	Nutrition
Skin condition	Skin condition
Moisture	Foot deformity or prior toe amputations

(Adapted from Ousey et al., 2018.[2])