NPIAP
NATIONAL PRESSURE INJURY ADVISORY PANEL
Improving Patient Outcomes Through Education, Research and Public Policy

WOUNDVISION
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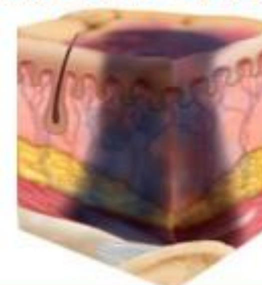
DEEP TISSUE PRESSURE INJURY OR AN IMPOSTER?

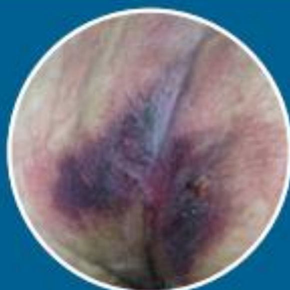
Intact or non-intact skin with localized area of persistent non-blanchable deep red, maroon, purple discoloration or epidermal separation revealing a dark wound bed or blood-filled blister. Pain and temperature change often precede skin color changes. Discoloration may appear differently in darkly pigmented skin. 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 (Unstageable, Stage 3 or Stage 4).

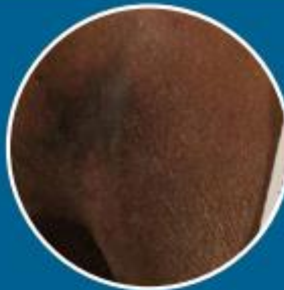


Initial DTPI

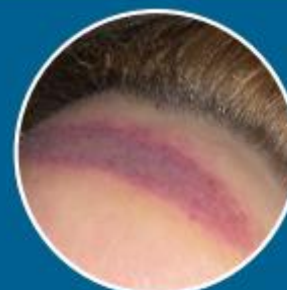
Initially intact purple or maroon skin or blood blister



Sacral DTPI after cardiac surgery in supine position 48 hours ago



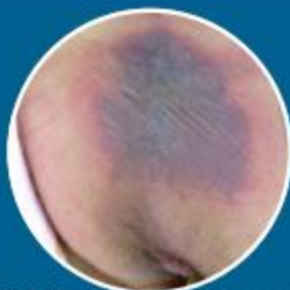
Low sacral-coccygeal DTPI in a patient sitting in High-Fowler's position



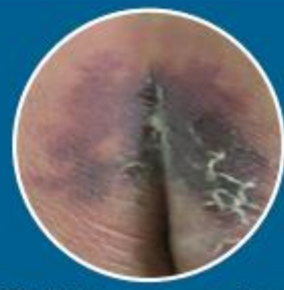
Forehead DTPI after surgery in prone position 24 hours ago

Evolving DTPI

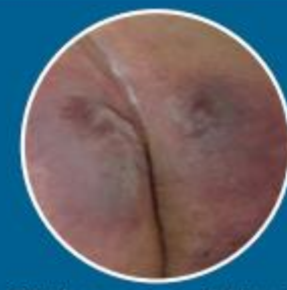
Blistered appearance as epidermis sloughs



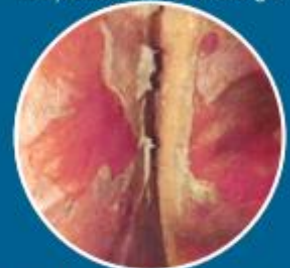
DTPI of right buttock with early separation of the dermis, 72 hours after surgery done with patient rotated to the right



DTPI of right para-sacrum with early separation of the dermis, 72 hours after mechanical ventilation for hypoxia

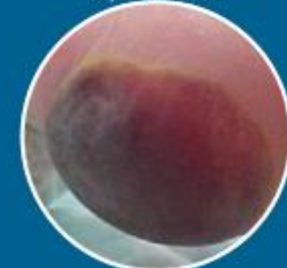


DTPI of para-sacrum with blistering, 72 hours after cardiac surgery in supine position



DTPI of para-sacrum with blistering, 72 hours after cardiac surgery in supine position

DTPI of buttocks with blistering, 72 hours after mechanical ventilation for hypoxia



Blood blister - Tissue may be hard to the touch or boggy

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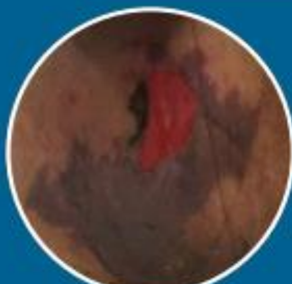
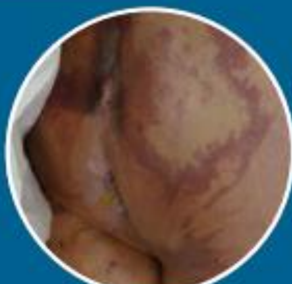
Many conditions can lead to purple or ecchymotic skin and rapidly developing eschar. Some of the most common differential diagnoses are shown below.

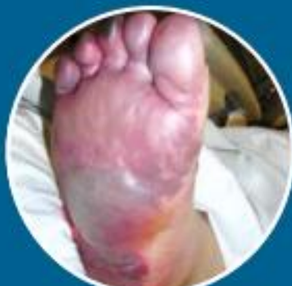
Ischemia



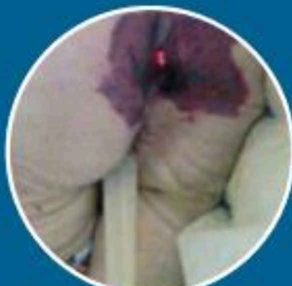
COVID-19
COVID-19 accelerates clotting in small vessels Skin color change is not always on pressure bearing tissues



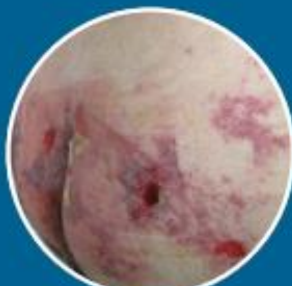
Embolic Disease
Marked disease of internal iliacs or postoperative aorto-iliac bypass with emboli



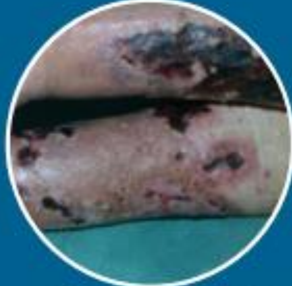
Vasopressor Induced Peripheral Ischemia
Levophed in use - Ischemia of ears, nose, fingers also common



Ischemia From Hypotension
Sudden purpura near end of life, no pressure events had occurred. Patient died 4 days later

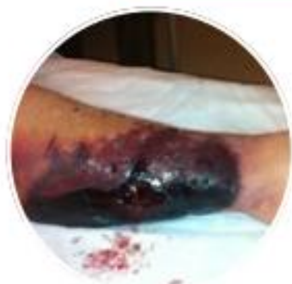


DIC/Sepsis with Microvascular Emboli
Reticular presentation Spontaneous onset, rapidly necrotic

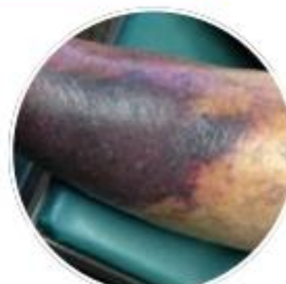


Calciphylaxis (AKA Calcific Uremic Arteriopathy)
Seen in patients in dialysis dependent renal failure due to hyper-parathyroidism, hypercalcemia and hyper-phosphatemia

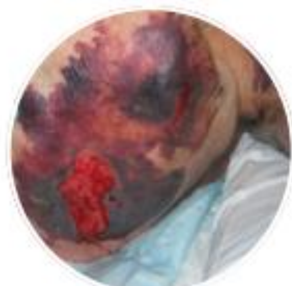
Trauma



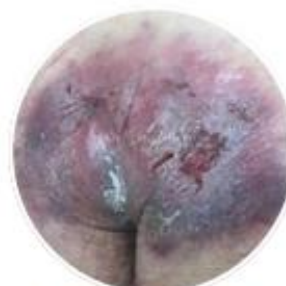
Warfarin Induced Skin Necrosis
Erythematous flushing then progressing within 24 hours to full thickness hemorrhagic bullae several days after high loading doses of Warfarin.



Hematoma
History of trauma to area, often anticoagulated - Area is palpable and often tender

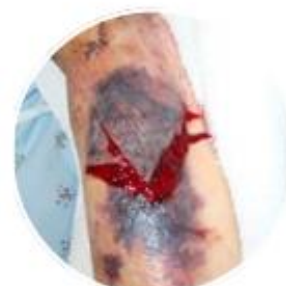


Blunt Trauma
History of traumatic injury Irregular shape Painful to touch. Morel Lavallée Lesions are possible



Chronic Friction Injury
Immobile or chairbound patient who uses a slide board Skin thick and irregular lesions

Bruise
History of trauma in the area Color changes to yellow and green in a few days



Skin Tear
Patient fell attempting to ambulate. Usually, profuse bleeding.