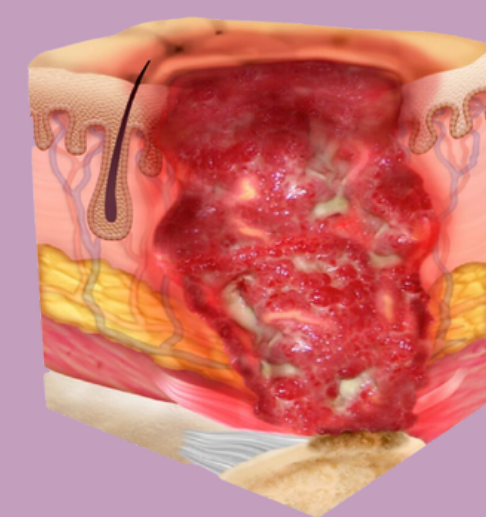
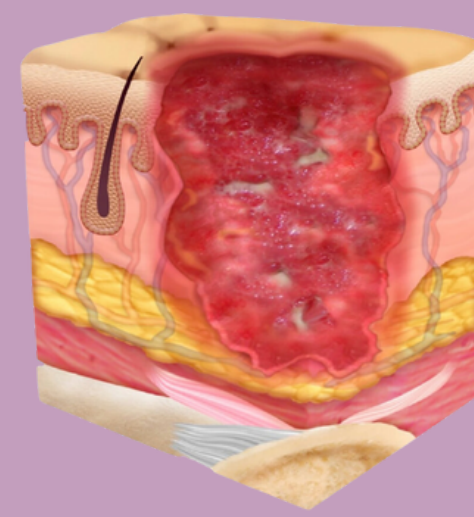
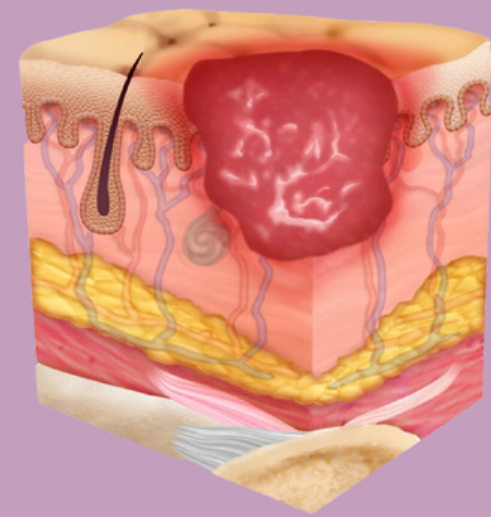
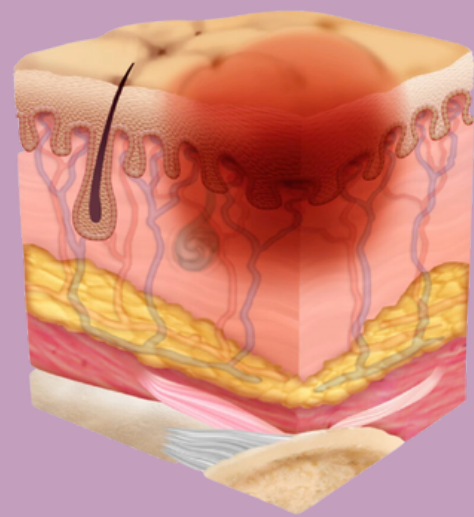


# Main Stages of Pressure Wounds



Disease

Stage 1

Stage 2

Stage 3

Stage 4

Presentation

Non-blanchable erythema of intact skin.

Sensory changes may precede development of stage 1 injury.

Erythema with partial loss of thickness of the skin including the epidermis and part of the superficial dermis.

Full-thickness skin loss that might involve subcutaneous fat.

Other soft tissue is not involved.

Full-thickness skin and tissue loss with involvement of the muscle, tendon, joint or bone.

Infection is a significant risk.

Location

The most common sites for pressure wounds include the occiput, ears, shoulder, scapula, elbow, sacrum, greater trochanter, lateral malleolus and the heels.

Causes

Pressure ulcers typically develop when the weight of a person's body imposes a force on the skin and subcutaneous tissue between a bony prominence and an external surface, such as a mattress. Sustained pressure from medical devices can also induce these types of wounds. Continuous pressure results in blood flow inhibition and local hypoxia, which can ultimately lead to necrosis. Friction, shearing forces and moisture can also contribute to developing pressure injuries.

Comorbidities

- Pressure sores require prolonged and persistent pressure on the skin (i.e., spinal cord injury, other neurological impairments, sedation, peri or post-operative immobilization and hospitalization).
- Malnutrition, advanced age, cognitive disorders, deep vein thrombosis, circulation problems, congestive heart failure, lower limb edema, diabetes, and rheumatoid arthritis are medical conditions that can be associated with these injuries.

Complications

- Infections are the most frequent complications, including cellulitis, abscess, infectious bursitis, infectious arthritis and necrotizing fasciitis.
- Osteomyelitis and squamous cell carcinoma may be considered if the wound fails to heal despite appropriate treatment.

# Main Stages of Pressure Wounds Continued

Disease

Stage 1

Stage 2

Stage 3

Stage 4

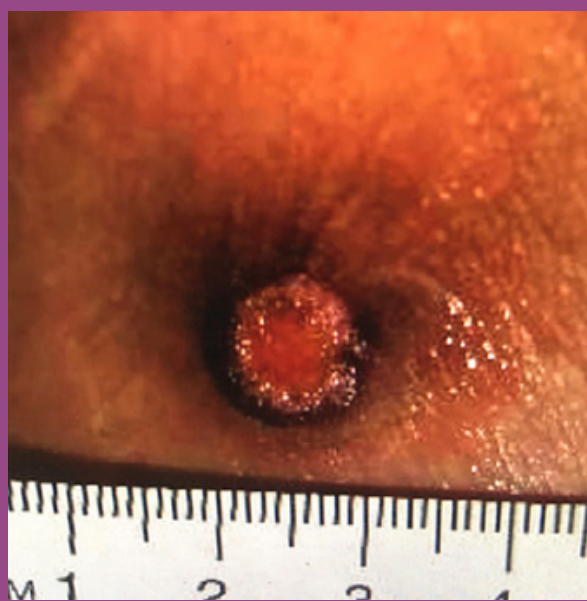
Treatments

- **Off-loading of pressure** from the site of the wound is essential.
- **Appropriate cleansing** and debridement of the wound.
- **Frequent assessment for signs of infection** (particularly stage 4).
- **Dressing selection:** promoting a moist wound healing environment, while avoiding excess fluid retention.
- **Negative pressure wound therapy** may accelerate healing for stage 3 and 4.
- **Surgical management** may be indicated for more extensive stage 3 and 4 pressure ulcers.

Prevention

- **Healthy nutrition:** prevent calorie, vitamin, mineral and protein deficiencies
- **Dressings:** films, hydrocolloids and foams can reduce the effect of friction and shear, and protect the skin from maceration.
- **Topical agents:** fatty acid creams, lotions, and ointments can promote healthy skin and reduce friction.
- **Repositioning and avoidance of immobilization.**

Additional images



## References and Image Citations

1. Mervis JS, Phillips TJ. Pressure ulcers: Pathophysiology, epidemiology, risk factors, and presentation. *J Am Acad Dermatol.* 2019 Oct;81(4):881-890. doi: 10.1016/j.jaad.2018.12.069. Epub 2019 Jan 18. PMID: 30664905.
2. Mervis JS, Phillips TJ. Pressure ulcers: Prevention and management. *J Am Acad Dermatol.* 2019 Oct;81(4):893-902. doi: 10.1016/j.jaad.2018.12.068. Epub 2019 Jan 18. PMID: 30664906.
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5. Boyko TV, Longaker MT, Yang GP. Review of the Current Management of Pressure Ulcers. *Adv Wound Care (New Rochelle).* 2018 Feb 1;7(2):57-67. doi: 10.1089/wound.2016.0697. PMID: 29392094; PMCID: PMC5792240.

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