**ABSTRACT**

Pressure ulcers are injurious to the skin and underlying tissue and are usually located over a bony prominence (Bryant & Nix, 2012). The mechanism of injury is the closure of capillary blood flow by pressure on the skin and tissue, as described by Bryant and Nix (2012). Stage 3 pressure ulcers are full thickness open wounds, and subcutaneous fat or yellow, devitalized tissue called slough, may be visible. Stage 4 pressure ulcers are full thickness open wounds, and muscle, tendons, or bone may be visible. Therefore, high interface pressure ulcer stages that are not numbered. Deep tissue injuries (DTI) are closed wounds similar to Stage 1, with deep, dark purple discoloration to the area, and these wounds can rapidly progress to Stage 3 and Stage 4 ulcers. Unstoppable ulcer pressure stages are full thickness wounds where the wound bed is completely obscured by slough or eschar, therefore, since the wound bed is not visible, the wound cannot be staged appropriately until the devitalized tissue is removed.

**PRESSURE ULCER DEVELOPMENT**

Inpatient costs for patients with pressure ulcers have been estimated of pressure ulcers to be $17,495 per hospital admission (Bauer et al., 2016). The Braden Scale is the standard measurement tool used to assess risk factors for pressure ulcer development in patients. Current strategies to prevent pressure ulcers focus on recommendations based on the Braden Scale Score. These strategies include using a pressure reduction surface for sitting. The strategies for prevention of pressure ulcers for SCI patients include specific recommendations for seat cushions to prevent ischial and sacral pressure ulcers. Factors that need consideration for seat cushion fitting for SCI patients are the amount of time a patient spends in the wheelchair daily, whether or not the patient can independently change position, level of sensation over the ischium, muscle strength or atrophy, and any systemic co-morbidities that would affect circulation and healing. The standard of care includes proper fitting of the wheelchair to the patient and using computer modeling to determine interface pressure over the ischium. Alternating air pressure seat cushions are superior to static foam seat cushions for pressure ulcer prevention. Real-time (RT) pressure mapping allows creating custom foam seat cushions, but our review did not identify any studies testing whether combining RT pressure interface measurements with an alternating air-pressure seat cushion would decrease the development of pressure ulcers in SCI patients.

**PRESSURE ULCER PREVENTION**

In our review, no studies tested whether combining RT interface measurements with an alternating air-pressure seat cushion would decrease the development of pressure ulcers in SCI patients. These recommendations, according to Krasner (2014), range from mild to very high risk pressure ulcer prevention. Mild risk prevention would include a turning schedule, physical therapy, using a pressure reduction surface for chair and bed as needed, heel protection, and strategies for managing nutrition, moisture, friction and shear. Moderate risk prevention includes all of the above plus a turning schedule for repositioning every 2 hours while in bed and every hour while seated, and not raising the head of the bed above 30 degrees. The high risk prevention plan includes the previous while adding foam wedges for positioning and more frequent, smaller shifts in position. The very high risk prevention plan includes all of the above plus adds a higher level support surface for the bed.

**REFERENCES**

Bryant, R.A., & Nix, D.P. (2012). *Inpatient costs for patients with pressure ulcers have been estimated of pressure ulcers to be $17,495 per hospital admission*. *Bauer et al., 2016*.


Ramos, A. (2009). Co...