Growing Evidence in Support of Orthotic Designed Wheelchair Seating
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    Deep Tissue Deformation and Microclimate research

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Course Objectives

- Describe the difference between a pressure distribution and orthotic approach in the design of a wheelchair seat cushion
- Identify 3 negative effects of heat and moisture on skin.
- Understand the “dispersion index” as it relates to interface pressure mapping (IPM)
- Define the NPUAPs new category of pressure ulcer: Deep Tissue Injury (DTI)
The Key Questions

- How are the supportive forces for sitting experienced on orthotic designed wheelchair cushions, and how do those forces impact:
  - Sitting stability
  - Dispersion index
  - Deep tissue deformation

- How does the orthotic designed cushion influence microclimate management?

- How do these measures compare to the generally accepted “gold standard” of air floatation/immersion designed cushions.
Immersive WC Cushion Technology
(Pressure Redistribution)

- Use of soft, immersive materials such as fluid-filled bladders or neoprene columns of air to envelope the bony prominences (ITs and coccyx) into as much as 3 inches of depth of these materials (optimally); thus reducing peak pressures at these high risk bony surfaces.
Orthotic Designed WC Cushion (Off-loading?)

As with virtually all orthotic and prosthetic devices, Orthotic designed wc cushions are designed to intentionally and selectively increase the forces of support at relatively low risk anatomy (typically the general areas of the gluteus medius and proximal bodies of the hamstring musculature) and then create areas of relief (“off-loading”) by moving contour away from the body at the relatively higher at-risk bony prominences (IT’s, coccyx/sacrum, greater trochanters).
References: