

## **The Heel: A Model For All The Problems**

Basic research and clinical findings have demonstrated the difficulty in preventing and treating pressure ulcers of the lower extremity. The heel and foot have numerous bony prominences which predispose this area to the mechanical effect of wedge force amplification due to the shape of these bony prominences. The combination of bony prominence wedge effect, lever action of the leg itself, poor vascularity and stiff viscoelastic soft tissue create a most difficult situation when a person is placed in a recumbent position.

Understanding the vertical shearing which occurs with the force amplification associated with the wedge shape of the bony prominences and its detrimental effect on already poorly vascularized soft tissue explains the difficulty in preventing and treating soft tissue breakdown in and about the foot.

The problem concerning foot drop, lateral rotation of the foot, and calf distortion must also be addressed. In short, the prevention and treatment of lower extremity soft tissue necrosis must include mechanical stress relief, maintaining proper calf configuration, and proper lower extremity and foot positioning requirements. The ability to manage these factors along with the hazardous wedge effect of the numerous bony prominences in the foot-ankle complex is necessary in order to protect the soft tissue of the lower extremity from the detrimental mechanical stress forces occurring while in a recumbent position.