

# What the Experts Say Clinical Basis for Using Protective Devices to Relieve Heel Pressure



“In patients at risk, the primary preventive action is to reduce pressure, friction, and shear forces on the heels. The best heel pressure-reducing products also separate and protect the ankles, maintain heel suspension, and prevent footdrop. Devices engineered to achieve these goals are classified as pressure-relieving (consistently reducing interface pressure to less than 32 mm Hg) or pressure-reducing (pressure less than standard support surfaces, but not below 32 mm Hg).”

*“Preventing heel pressure ulcers in immobilized patients,” Adv Skin Wound Care. 2005 Jan/Feb;18(1):22.*

“Individuals in bed who are completely immobile should have a care plan that includes the use of devices that totally relieve pressure on the heels, most commonly by raising the heels off the bed. Do not use donut-type devices. (Strength of Evidence = C.)”

*“Pressure Ulcers in Adults: Prediction and Prevention,” Clinical Practice Guideline Number 3, AHCPR Pub. No. 92-0047, May 1992. (Available online at [www.ahrq.gov/clinic/cpgonline.htm](http://www.ahrq.gov/clinic/cpgonline.htm)). Note: From summary completed by ECRI, May 1, 2001. Per a recent Evidence-based Practice Center (EPC) report commissioned by the Agency for Healthcare Research and Quality (AHRQ) (formerly AHCPR), the guideline is considered, in whole or in part, to still be current.*

Regarding use of support surfaces, including special beds, mattresses, and overlays, “it must be noted that none of the surfaces provide complete pressure relief in the heel region. Heels must be off loaded regardless of the surface used, and this can be accomplished easily with the use of pillows or pressure reduction devices designed for the heel.”

*Coats-Bennet U, “Use of Support Surfaces in the ICU,” Crit Care Nursing Quarterly. 2002 May;25(1):22-32.*

“Pressure ulcers of the heel are among the most difficult to heal. Prevention of heel breakdown is an essential nursing intervention. Nurses should understand the etiology of heel pressure ulcer formation and be able to identify individuals who are at risk. Heel assessments should be done on admission and daily for those at risk for heel pressure ulcers.”

“While not a substitute for nursing care, the use of heel protective devices can markedly reduce the potential for heel breakdown. The combination of heel protective devices and nursing interventions, such as repositioning of the extremity, removing the device for cleaning, and skin assessment, has a powerful impact on the prevention of heel pressure ulcer formation.”

*Graff MK, Bryant J, Beinlich N, “Preventing Heel Breakdown,” Orthopaedic Nursing. 2000 Sep/Oct;19(5):63-9.*

“When a diabetic patient with peripheral neuropathy is confined to a bed, the heel is particularly vulnerable to trauma. Because of the loss of sensation, the patient tends to keep the heels in the same position. In addition, the heel suffers friction trauma when the patient uses it to change body position. These two processes lead to ischemic pressure necrosis and skin breakdown; infection and gangrene can follow. Prevention is crucial: The patient’s heels should be inspected twice a day and heel protectors or a pressure-reducing mattress should be utilized.”

*Levin M, “Diabetic Foot Wounds: Pathogenesis and Management,” Adv Wound Care. 1997 Mar/Apr;10(2):24-30.*

“Heel pressure ulcers are frequently encountered in a geriatric hospitalized population. Vertical pressure, which is one of the etiologic factors, can be markedly reduced by applying heel-protecting materials.”

One study found ordinary head pillows to be the most effective pressure-reducing device. However, as the study suggests, “...care must be taken so that the pillow is neither lying under the knee, thus preventing flexion contractures, nor causing hyperextension of the knee.”

*De Keyser G, et al., “Pressure-Reducing Effects of Heel Protectors,” Adv Wound Care. 1994 Jul;7(4):30-34.*

“In a study that examined the pressure-relieving effects of 13 different heel protectors, including variations on the sheepskin boot, De Keyser et al (1994) found that none were as effective as an ordinary pillow. Pillows, however, should be used only for positioning and comfort, not for pressure reduction (Collier, 1999b).”

*Collier M, “Preventing and Managing Pressure Ulcers on Heels,” NT Plus. July 20 2000;96(29):7-8.*

Regarding heel protection, “...using pillows is not without problems. Patients who moved spontaneously had to have their pillows repositioned to keep the heel off the bed; patient restlessness made heel elevation difficult if not impossible to maintain. The pillows also must be positioned so that the heels are actually suspended (not just resting on the pillow) and the nurse must decide how many pillows are needed to achieve heel elevation. Using multiple pillows may decrease arterial circulation to the extremities in patients who have peripheral vascular disease, and pillows do not protect against foot drop.”

“Understanding the nature of pressure ulcer formation, the meaning of pressure reduction, and the use of a heel elevation product is a necessity for nursing personnel.”

*Tymec AC, Pieper B, Vollman K, “A comparison of Two Pressure-Relieving Devices on the Prevention of Heel Pressure Ulcers,” Adv Wound Care. 1997 Jan/Feb;10(1):39-44.*