

# Articles of Interest

## Literature Review

### National Pressure Ulcer Advisory Panel's Updated Pressure Ulcer Staging System

**Authors:** Black J, Baharestani MM, Cuddigan J, Dornier B, Edsberg L, Langemo D, Posthauer ME, Ratliff C, Taler G, and The National Pressure Ulcer Advisory Panel

**Publication:**  
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**Reviewer:**  
Christine Pearson, RN, IIWCC

The National Pressure Ulcer Advisory Panel (NPUAP) in the United States has updated its definition of a pressure ulcer and stages of pressure ulcers. In this article, the authors explore the purpose and history (back to 1955) of pressure ulcer staging systems and discuss the problems found with using the systems. The etiology of deep tissue injury (DTI) has been added to the NPUAP Pressure Ulcer Staging System. The authors explain what deep tissue injury is and the long process they went through in deciding to add it to the staging system. The article includes a listing of the definitions and explanations of pressure ulcers and of all the stages (DTI, Stage I, Stage II, Stage III, Stage IV, and Unstageable Pressure Ulcers). The authors are planning to validate this staging system.

### Preventing Diabetic Foot Ulcer Recurrence in High-Risk Patients

**Authors:** Lavery LA, Higgins KR, Lanctot DR, Constantinidies GP, Zamorano RG, Athanasiou KA and Mauli Agrawal C

**Publication:**  
*Diabetes Care.* 2007;30(1):14-20

**Reviewer:**  
Rebecca Cottrill, BFA, BScN, RN, MSCH(c)

This study divided into three treatment arms 173 persons with diabetes between the ages of 18 and 80 with a history of ulceration and ankle-brachial indices of 0.70 or above. Each study participant received diabetic foot education, regular foot care, and therapeutic footwear and ongoing assessment of the footwear by a podiatrist.

In the Standard Treatment arm, patients had their feet examined by a physician every eight weeks and were instructed to call the study nurse if they had concerns about their feet between visits. In the Structured Foot Examination arm, patients were instructed to examine their feet twice a day, with a mirror, for any irregularities, record their findings and call the study nurse if they had concerns about their feet. In the Enhanced Treatment arm, patients were given an infrared

thermometer and instructed to monitor and record temperatures on their great toes; first, third and fifth metatarsal heads; midfoot, and heel. If they monitored an area of difference greater than 4° F (2.2° C), they were instructed to call the study nurse, who would book an appointment with the physician.

Patients in the Standard Treatment group and the Structured Foot Examination group did not demonstrate significant differences between each other: approximately 30 per cent of patients in each of these groups called the study nurse and approximately 30 per cent of patients developed ulceration. In the Enhanced Treatment group, 52.5 per cent of patients called the study nurse and 8.5 per cent of patients went on to develop an ulcer. The study notes that of the patients who developed an ulcer in the Enhanced Treatment group, 80 per cent of them were not adherent to the therapy. Also, once patients noticed a temperature difference between their feet, they decreased their activity significantly.

The study was based on the premise that inflammation is a sign of tissue damage and can be monitored through temperature. This study shows that daily self-

monitoring with an infrared thermometer may decrease foot ulceration. One wonders if daily self-monitoring with infrared thermometry should be standard for all at-risk patients with diabetes. But there are significant challenges to the reality of this monitoring. Some patients dropped out of this study because the protocol was just too demanding. A patient would need to be highly motivated to participate in this kind of prevention. Also, mobility may inhibit this kind of prevention. Patients in this study were given goose-neck thermometers to ease self-monitoring, but for some elderly patients or for those with severe arthritis, self-monitoring may be impossible. Cost may also be a prohibitive factor. An infrared thermometer can cost \$600, which would most likely need to be absorbed by the patient.

This study cites the infrared thermometer as an effective and useful tool in the prevention of foot ulceration for the patient with diabetes. But there are many challenges that prevent this tool from being used as standard care. Perhaps with further research and attention, this tool will become more accessible to future patients who are at risk of diabetic foot ulceration. ☺

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<sup>1,2</sup> Data on file.

<sup>3</sup> Dykes, P.J., Heggie, R., and Hill, S.A. Effects of adhesive dressings on the stratum corneum of the skin. *Journal of Wound Care*, Vol. 10, No. 2, February 2001.

<sup>4</sup> Dykes, P.J. and Heggie, R. The link between the peel force of adhesive dressings and subjective discomfort in volunteer subjects. *Journal of Wound Care*, Vol 12, No 7, July 2003.

<sup>5</sup> Williams C. *British Journal of Nursing*, Vol 4, No 1, 1995.

