

Predicting Pressure Ulcer Risk

By: Elizabeth A. Ayello, PhD, ACNS- BC, CWON, FAAN
Excelsior College School of Nursing

WHY: Pressure ulcers (PUs) occur frequently in hospitalized, community-dwelling and nursing home older adults, and are serious problems that can lead to sepsis or death. Prevalence rates for PUs are 11.9% in acute care, 29.3% in long term acute care, 11.8% in long term care, and 19.0% in rehabilitation. A key to prevention is early detection of a patient's risk factors which includes using a valid and reliable PU risk assessment tool and timely implementation of prevention interventions.

BEST TOOL: The Braden Scale for Predicting Pressure Sore Risk, available in several languages, is among the most widely used tools for predicting the development of PUs. Assessing risk in six areas (sensory perception, skin moisture, activity, mobility, nutrition and friction/shear), the Braden Scale assigns an item score ranging from one (highly impaired) to three/four (no impairment). Summing risk items yields a total overall risk, ranging from 6-23. If a patient has major risk factors such as fever, diastolic pressure below 60, hemodynamic instability, advanced age, then move them to the next level of risk. Scores 15 to 18 indicate at risk, 13 to 14 indicate moderate risk, 10 to 12 indicate high risk, ≤ 9 indicate very high risk. In addition to assessing total overall risk, basing prevention protocols on **low subscale scores** are recommended by Dr. Braden and required by Centers for Medicare and Medicaid Centers (CMS) in Tag F 314 guidance for long term care. Targeting specific prevention interventions that address low risk subscale scores can offer effective resource use. Use Braden Scale scores as part of comprehensive clinical assessment and decision making to determine pressure ulcer risk.

TARGET POPULATION: The Braden Scale is commonly used with medically and cognitively impaired older adults. It has been used extensively in acute, home, and institutional long term care settings. A version specific to home care can be downloaded from www.bradenscale.com. There are no standard recommendations, but the literature supports doing risk assessment on admission or when the patient's condition changes (including cognition or functional ability) and at the following intervals: acute care-every 24-48 hours; critical care-every 24 hours; home care-every RN visit; institutional long term care-weekly first 4 weeks after admission, monthly to quarterly.

VALIDITY AND RELIABILITY: The ability of the Braden Scale to predict the development of PUs (predictive validity) has been tested extensively. Inter-rater reliability between .83 and .99 is reported. The tool has been shown to be equally reliable with Black and White patients. Sensitivity ranges from 83-100% and specificity 64-90% depending on the cut-off score used for predicting PU risk. A cut-off score of 18 or low subscale scores should be used for identifying at risk for patients.

STRENGTHS AND LIMITATIONS: When utilized correctly and consistently, the Braden Scale helps identify the associated risk for PU so that appropriate preventive interventions can be implemented. Although the Braden Scale has been used primarily with White older adults, research addressing Braden Scale efficacy in Black and Latino populations suggests that a cut-off score of 18 or less prevents under-prediction of PU risk in these populations.

MORE ON THE TOPIC:

Best practice information on care of older adults: www.ConsultGerRN.org.

Braden Scale. <http://www.bradenscale.com>. Last accessed September 13, 2011.

Ayello, E.A., & Braden, B. (2002). How and why to do pressure ulcer risk assessment. *Advances in Skin and Wound Care*, 15(3), 125-132.

Baranoski, S., & Ayello, E.A. (2012). *Wound care essentials: Practice principles (3rd edition)*. Springhouse PA: Lippincott Williams & Wilkins.

Bergstrom, N., & Braden, B.J. (2002). Predictive validity of the Braden Scale among Black and White subjects. *Nursing Research*, 51(6), 398-403.

Bergstrom, N., Braden, B.J., Laguzza, A., & Holman, V. (1987). The Braden Scale for predicting pressure sore risk. *Nursing Research*, 36(4), 205-210.

Lyder, C.H., Yu, C., Stevenson, D., Mangat, R., Empleo-Frazier, O., Emrling, J., & McKay, J. (1998). Validating the Braden Scale for the prediction of pressure ulcer risk in Blacks and Latino/Hispanic elders: A pilot study. *Ostomy/Wound Management*, 44(3A), Suppl: 42S-50S.

National Pressure Ulcer Advisory Panel and European Pressure Ulcer advisory Panel. (2009). *Prevention and treatment of Pressure ulcers. Clinical Practice Guideline*. Washington DC: NPUAP.

Van Gilder, C., Amlung, S., Harrison, P., Meyer, S. (2009). Results of the 2008-2009 International Pressure Ulcer Prevalence™ Survey and a 3-year, acute Care Unit specific analysis. *Ostomy Wound Management*, 55(11), 39-45.

