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Research Summary – Waterlow Pressure Ulcer Scale – Skin

Author Year Country Research Design Setting	Demographics and Injury Characteristics of Sample	Validity	Reliability	Responsiveness Interpretability
[Ash (2002)](#) Retrospective medical history audit SCI unit	N=144, 115 male Mean age = 40 (range 10-89) 78 tetraplegia, 66 paraplegia 49 complete, 95 incomplete All patients with a completed first admission to the SCI unit from 1998 to 2000 Mean (95%CI) time since injury at admission: 14 (11-17) days	Pressure ulcers were found to be significantly associated with length of stay, completeness of lesion (ASIA score A versus BCDE), surgical stabilization of the neck, tracheostomy and delayed transfer to SCI unit. Completeness of lesion lends content support to the Braden's inclusion of sensory perception. Surgical stabilization and tracheostomy may be related to mobility and activity limitations Waterlow: AUC = 76 CI (95%) 68-84 Braden		Corresponding risk rating: All patients (n=144): 21.5 (20.5-22.6) --- very high risk Patients w/ ulcers at any stage (n=80): 24.1 (22.7-25.5) --- very high risk Patients w/ no ulcers at any stage (n=64): 18.4 (17.2-19.5) --- high risk Risk rating (Waterlow 1985): 10+ = at risk 15+ = high risk 20+ = very high risk

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		AUC = 81 CI (95%) = 74-88 Norton AUC = 72 CI (95%) 64-81 SCIPUS-A AUC = 78 CI (95%) = 70-85		
[Wellard & Lo (2000)](#) Retrospective medical history audit	N=60 (individuals who developed ulcers only), predominately unmarried males Mean age 43±18yrs (range 17-82yrs) Of the 60 cases examined, the pressure ulcer admission rate to the hospital was: 46.7% had 1 admission 18.3% had 2 admissions 16.7% had 3-4 admissions	*Descriptions in the patients' histories were used to retrospectively apply scores according to Stirling's pressure ulcer severity scale and the Norton, Braden, and Waterlow tools. Four histories had insufficient data, leaving N=56.* **Spearman correlation coefficients.**		Mean (SD) Waterlow score for 60 patients: 18.9 (2.98), range 15-28

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	18.3% had >5 admissions Average (SD) length of stay in the hospital: 91 (98) days	When the scales were treated as continuous variables: There were significant correlations between the Stirling scores and both the Norton scores (r=-0.28; P=.039) and the Waterlow scores (r=0.38; P=.004), but not the Braden scores (r=0.03; P=.813). When the scales were treated as categorical variables (e.g. at risk, high risk, very high risk): Only the Waterlow scores were significantly correlated to the Stirling scores (r=0.32; P=.017). (Norton, r=0.14, P=.311; Braden, r=-0.08, P=.569.)		

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		Assessing the correlations between the three retrospectively applied tools: The Norton scores were significantly correlated to both the Waterlow scores (r=-0.50 or 0.56*; P<.001) and the Braden scores (r=0.48 or 0.49*; P<.001). *Indicates discrepancy in the article text.		