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Last updated: May 8th, 2024

Research Summary – Spinal Cord Assessment Tool for Spastic Reflexes (SCATS) – Spasticity

Author Year Country Research Design Setting	Demographics and Injury Characteristics of Sample	Validity	Reliability	Responsiveness Interpretability
Akpinar et al. (2016) Observational Reliability Study Inpatient rehabilitation unit at an education and research hospital, Turkey	N=47 SCI with ASIA Scale grade A – D, had spasticity, and at least 6 months post injury between ages of 18 – 88 years old For comparison with the Modified Ashworth Scale (MAS) and Penn Spasm Frequency Scale (PSFS)	SCATS clonus scores significantly correlated with the Modified Ashworth Scale (MAS) scores of the hip extensor muscles, knee flexor muscles, and plantar flexor muscles ($P<0.01$) SCATS flexor spasm scores only significantly correlated with the MAS score of the ankle plantar flexor muscles ($P<0.05$) No significant correlation between the SCATS extensor spasm scores and any of the MAS scores	Test-Retest kappa coefficients of the SCATS demonstrated a HIGH agreement (coefficient +/- SD range = 0.614 +/- 0.8 – 1.000 +/- 0.8). Interrater kappa coefficients of the SCATS demonstrated a HIGH agreement (coefficient = 0.669 +/- 1.000, $P<0.01$).	

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		No significant correlation between the SCATS scores and the PSFS ratings		
Benz et al. (2005) Validation study through correlational analyses Research Lab and outpatient medical clinic	N=17 for comparison with Ashworth Scale and Penn Span Frequency Scale (PSFS) N=11 for kinematic and electromyographic analysis Age 16-65 years. Report of spastic clinical behaviors.	Clonus, flexor spasm and extensor spasm responses measured by using the SCATS correlated significantly with kinematic and electromyography (P<.01). Correlations ranged from 0.69-0.94. Significant Spearman rank correlations between SCATS extensor spasms and the Ashworth scores for hip and knee flexors and for ankle plantar flexors (spearman's rank correlations = 0.98, 0.88, 0.61).		

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		Only SCATS clonus scores correlated significantly with spasm frequency measures (rho=.59, P<.05).		