

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
<p>Akpinar et al. (2016)</p> <p>Observational Reliability Study</p> <p>Inpatient rehabilitation unit at an education and research hospital, Turkey</p>	<p>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</p> <p>For comparison with the Modified Ashworth Scale (MAS) and Penn Spasm Frequency Scale (PSFS)</p>	<p>SCATS clonus scores significantly correlated with the Modified Ashworth Scale (MAS) scores of the hip extensor muscles ($\rho = 0.709$), knee flexor muscles ($\rho = 0.406$), and plantar flexor muscles ($\rho = 0.754$) ($P < 0.01$)</p> <p>SCATS flexor spasm scores only significantly correlated with the MAS score of the ankle plantar flexor muscles ($\rho = 0.393$) ($P < 0.05$)</p> <p>No significant correlation between the SCATS extensor spasm scores and any of the MAS scores</p>	<p>Test-Retest kappa coefficients of the SCATS demonstrated a HIGH agreement (coefficient +/- SD range = 0.614 +/- 0.8 – 1.000 +/- 0.8).</p> <p>Interrater kappa coefficients of the SCATS demonstrated a HIGH agreement (coefficient = 0.669 +/- 1.000, $P < 0.01$).</p>	

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		No significant correlation between the SCATS scores and the PSFS ratings		
<p>Benz et al. (2005)</p> <p>Validation study through correlational analyses</p> <p>Research Lab and outpatient medical clinic</p>	<p>N=17 for comparison with Ashworth Scale and Penn Span Frequency Scale (PSFS)</p> <p>N=11 for kinematic and electromyographic analysis</p> <p>Age 16-65 years.</p> <p>Report of spastic clinical behaviors.</p>	<p>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.</p> <p>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).</p>		

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Last updated: May 8th, 2024

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