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Last updated: October 18th, 2024

Research Summary – Capabilities of Upper Extremity Test (CUE-T) – Upper Limb

Author Year Research Design Setting (country)	**Demographics and Injury Characteristics of Sample**	**Validity**	**Reliability**	**Responsiveness Interpretability**
Jimbo et al. 2024 Prospective observational study to establish a severity classification and calculate cutoff values for independence in activities of daily living using the CUE-T for individuals with cervical SCI Chiba Rehabilitation Center, Japan	N = 71 patients with subacute cervical SCI 60 males, 11 females Median (IQR) age: 61.0 (49.5-67.0) years ASIA: A (n = 9), B (n = 7), C (n = 18), and D (n = 37) Level of injury: C1-T1 Cause of injury: Traumatic (n = 64) and non-traumatic (n = 7) Median (IQR) time since injury: 106 (77.5-166.5) days			**Cutoff values for CUE-T score for independence in activities of daily living:** - Feeding: 37 points - Bathing the upper body: 91 points - Bathing the lower body: 90 points - Dressing the upper body: 82 points - Dressing the lower body: 81 points - Grooming: 60 points. **For all cutoff values:** - Sensitivity: 0.73-0.96 - Specificity: 0.83-0.98 - Positive predictive value: 0.67-0.96

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				- Negative predictive value: 0.83-0.96 - Area Under the Curve (AUC): 0.909-0.991 - AUC with bootstrapping: 0.909-0.992
Jimbo et al. 2023 Prospective study to the MCID corresponding to shorter intervention periods using a more recommended statistical method (adjustment model based on logistic	N = 52 patients with subacute cervical SCI within 9 months of injury 45 male, 7 female Mean age: 56.8 ± 13.5 years Mean days from injury to baseline assessment: 98.7 ± 61.4 days AIS A (n = 8), AIS B (n = 6), AIS C (n = 14), and AIS D (n = 24) Level of injury: C1 (n = 1), C2 (n = 0), C3 (n = 5), C4 (n = 21), C5 (n = 17),			**Minimal clinically important difference (MCID):** $MCID_{adjust}$: • CUE-T total = 7.7 • CUE-T hand = 2.0 • CUE-T side = 3.7 $MCID_{distribution}$: • CUE-T total = 3.4 • CUE-T hand = 1.1 • CUE-T side = 1.6

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regression analysis) Chiba Rehabilitation Center, Japan	C6 (n = 2), C7 (n = 5), C8 (n = 1), and T1 (n = 0)			
Marino et al. 2018 Cross-sectional	N=69 (tetraplegic) 60 acute, 9 chronic injuries Mean age: 41.9±18.1 years 25 motor complete AIS: 8A, 17B, 22C, 22D			**Responsiveness:** Large responsiveness in subacute period after SCI (SRM= 1.07) MCID: for total CUE-T score was 12 points/128 points. For right/left sides MCID was 6 points/60 points
Dent et al. 2018 Cross-sectional; Repeated measures Multicenter study in the US	N=39 children <18 years with tetraplegia Mean age: 12.9 years	Correlation coefficient of CUE-T with: CUE-Q: r = 0.85-0.87 GRASSP: r = 0.78-0.90 SCIM-SC: r = 0.70 SCIM: r = 0.65 SCIM-Mobility: r = 0.51	**Internal consistency:** α ≥ 0.90 **Test-retest, Inter-rater, Intra-rater:** Test-retest reliability: ICC ≥ 0.95	**Floor/Ceiling Effect:** The floor to ceiling effects for each subscore was negligible (<20%)
Marino et al. 2015	N=50	Correlation coefficient of CUE-T with:	**Internal consistency:** ICC = 0.978-0.987	

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Cross-sectional; Repeated measures Single outpatient rehabilitation centre	36 male, 14 female Mean age: 48.1 ± 18.2	UEMS: r = 0.83 SCIM Self-Care Score: r = 0.70 SCIM Mobility Score: r = 0.55		
Marino et al. 2012 Cross-sectional	N=30 23 Male Average age: 44.8 years 15 C4-6 motor level, 9 complete, 6 incomplete 11 C7-T1 motor level, 7 complete, 4 incomplete 4 T2-T6 motor level, all complete	Correlation of CUE-T with: ULMS (upper limb motor score: r=0.91 Right side: 0.91, left side:0.87	**Internal consistency:** α = 0.96	**Interpretability:** Median (IQR): 101 (66-119)