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Research Summary – Quadriplegia Index of Function – Self Care and Daily Living

Author Year Country Research Design Setting	Demographics and Injury Characteristics of Sample	Validity	Reliability	Responsiveness Interpretability
[Yavuz et al. (1998)](#) Longitudinal study Ankara Rehabilitation Center	N=29 (20M, 9F) Mean age: 37yrs (range 14-66yrs) C3-T1 tetraplegic (18 ASIA complete, 11 ASIA incomplete). Consecutive patients of the Ankara Rehab Centre between May 1994 and January 1996. Mean time since injury to admission 20wks (range 2-72wks). Average length of stay in rehab centre: 18±10.29 wks Assessing the relationship of the two functional tests, FIM and QIF, to see which functional test was more strongly	*Comparison of FIM and QIF scores to ASIA scores.* **Spearman's correlation.** Total QIF and Functional Independence Measure (FIM) scores were significantly correlated to each other (r=0.97, P<.001), as well as to the scores for: - American Spinal Injury Association (ASIA) motor (QIF: r=0.91, P<.001; - FIM: r=0.91; P<.001), - ASIA light touch (QIF:		See table 2 below

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	correlated to ASIA motor scores.	r=0.64, P<.001; FIM: r=0.58; P<.01) and - ASIA pinprick (QIF: r=0.65, P<.01; FIM: r=0.55; P<.01). Self-care category (bathing, grooming and feeding) scores for the QIF and FIM were significantly correlated to each other as well: see table 1 below Other category (dressing, transfers, mobility, bladder and bowel programs) scores for both the QIF and FIM were significantly correlated to each other (r=0.87-0.99, P<.001) and to whole body ASIA motor		

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		scores (QIF range: 0.79-0.91; FIM range: 0.74-0.86; P<.001 for all). Percent recovery in ASIA motor scores over the rehabilitation stage was significantly correlated to percent improvement in total QIF scores (r=0.68, P<.001), but not significantly correlated to percent improvement in total FIM scores (r=0.38, P>.05). Percent recovery in ASIA motor scores was not correlated to either QIF or FIM improvement when the patients were grouped according to age or length of		

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		hospital stay; however, it was significantly correlated to QIF improvement (P<.005), but not FIM improvement (P>.05), when patients were grouped based on a latency of more or less than 3 months between injury and admission.		

Table 1

Spearman correlation of QIF, FIM, and ASIA upper extremity motor scores (UEMS) in self-care categories

Category	UEMS vs QIF	UEMS vs FIM	QIF vs FIM
Grooming	r=0.85 P<0.001	r=0.83 P<0.001	r=0.91 P<0.001
Bathing	r=0.75 P<0.001	r=0.76 P<0.001	r=0.96 P<0.001
Feeding	r=0.84 P<0.001	r=0.76 P<0.001	r=0.91 P<0.001

Table 2

QIF, FIM and ASIA Scores at Admission and Discharge from the rehabilitation

Author Year Country Research Design Setting	Demographics and Injury Characteristics of Sample		Validity		Reliability	Responsiveness Interpretability
	center.					
		Test	Mean (SD) at Admission	Mean (SD) at Discharge	Mean Improvement	
	Complete Quadriplegic	ASIA motor	21.1 (7.3)	24.8 (8.8)	3.6	
		Asia light touch	30.5 (13.5)	37.5 (22.6)	7	
		FIM	52.7 (10.5)	59.1 (12.7)	6.4	
		QIF	25.7 (28.7)	39.0 (31.2)	13.3	
	Incomplete Quadriplegics	ASIA motor	68.54 (16.3)	81.58 (11.8)	13.04	
		ASIA light touch	77.3 (20.9)	93.3 (21.6)	16.0	
		FIM	79.5 (24.5)	98.4 (23.3)	18.9	
		QIF	111.3 (68.5)	151.4 (67.7)	40.1	
Marino et al. (1995)	N=50 with cervical SCI Age range = 16 to 68 years		QIF feeding scores have excellent correlations with AIS			

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Longitudinal study. Admitted within 2 weeks after cervical SCI to regional spinal cord injury center.	47 males, 3 females At admission and 12 months post injury.	measures of motor impairment (r = 0.72-0.78) and Adequate correlation with neurological level (r = 0.56)		
[Marino et al. (1993)](#) Assessing self-care status in quadriplegia: comparison of the quadriplegia index of function (QIF) and the functional independence measure (FIM)	N=22 SCI Level: C4-C7 Time post-injury: 3-12 months	UEMS and Self-care category (bathing, grooming and feeding) scores for the QIF and FIM were not significantly correlated to each other (except for UEMS and QIF feeding, and UEMS and FIM feeding): see table 3 below		

Table 3

Spearman correlation of QIF, FIM, and ASIA upper extremity motor scores (UEMS) in self-care categories

Category	UEMS vs QIF	UEMS vs FIM	QIF vs FIM	

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	Grooming	r=0.90	r=0.91		r=0.94		
	Bathing	r=0.84	r=0.75		r=0.92		
	Feeding	r=0.90 P<0.001	r=0.53 P<0.001		r=0.75		
[Gresham et al. (1986)](#) Methodological study. Erie Country Medical Centre, Buffalo	N=30 quadriplegic patients Three raters to establish reliability; sensitivity also measured. The QIF was originally developed by a multidisciplinary SCI team.				**Test-retest, Inter-rater, Intra-rater** Three different raters subscales (P<.001) Rater 1/Rater 2: r=0.68-0.95 Rater 1/Rater 3: r=0.55-0.91 Rater 2/Rater 3: r=0.67-0.95		QIF is sensitive in documenting functional improvements in quadriplegics. Average improvements detected with QIF was 46% vs. 20% by Barthel Index and 30% Kenny Self-Care Evaluation.