

Appendix 1 Nutech functional score - spinal cord injury (As on 1 July 2014)

Parameter	Description	Score
Motor assessment (Shoulder); Affected areas: UL (R), UL (L)		
Flexion	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Extension	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Abduction	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Adduction	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2

	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Internal Rotation	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
External Rotation	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Motor assessment (Elbow); Affected areas: UL (R) and UL (L)		
Flexion	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Extension	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1

	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Supination	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Pronation	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Motor assessment (Wrist); Affected areas: UL (R), UL (L)		
Flexion	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Extension	Not afflicted in SCI	NA
	Not existing	NE

	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Radial Deviation	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Ulnar Deviation	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Motor assessment (Fingers- Grasp); Affected areas: UL (R), UL (L)		
Use full palmar grasp	Not afflicted in SCI	NA
	Not existing	NE
	Unable to do	1
	Need maximal assistance	2
	Need moderate assistance	3
	Need supervision	4
	Total independence	5
Use radial-digital grasp	Not afflicted in SCI	NA

	Not existing	NE
	Unable to do	1
	Need maximal assistance	2
	Need moderate assistance	3
	Need supervision	4
	Total independence	5
Use standard pincer grasp	Not afflicted in SCI	NA
	Not existing	NE
	Unable to do	1
	Need maximal assistance	2
	Need moderate assistance	3
	Need supervision	4
	Total independence	5
Use spherical grasp	Not afflicted in SCI	NA
	Not existing	NE
	Unable to do	1
	Need maximal assistance	2
	Need moderate assistance	3
	Need supervision	4
	Total independence	5
Use intrinsic-plus grasp	Not afflicted in SCI	NA
	Not existing	NE
	Unable to do	1
	Need maximal assistance	2
	Need moderate assistance	3
	Need supervision	4
	Total independence	5
Use power grasp on tool	Not afflicted in SCI	NA

	Not existing	NE
	Unable to do	1
	Need maximal assistance	2
	Need moderate assistance	3
	Need supervision	4
	Total independence	5
Motor assessment (Fingers- Release); Affected areas: UL (R), UL (L)		
Release object freely	Not afflicted in SCI	NA
	Not existing	NE
	Unable to do	1
	Need maximal assistance	2
	Need moderate assistance	3
	Need supervision	4
	Total independence	5
Release 1-inch object in container	Not afflicted in SCI	NA
	Not existing	NE
	Unable to do	1
	Need maximal assistance	2
	Need moderate assistance	3
	Need supervision	4
	Total independence	5
Stack 1-inch blocks	Not afflicted in SCI	NA
	Not existing	NE
	Unable to do	1
	Need maximal assistance	2
	Need moderate assistance	3
	Need supervision	4
	Total independence	5

Release tiny objects	Not afflicted in SCI	NA
	Not existing	NE
	Unable to do	1
	Need maximal assistance	2
	Need moderate assistance	3
	Need supervision	4
	Total independence	5
Throw small ball at least 3 feet	Not afflicted in SCI	NA
	Not existing	NE
	Unable to do	1
	Need maximal assistance	2
	Need moderate assistance	3
	Need supervision	4
	Total independence	5
Motor assessment (Hip); Affected areas: LL (L), LL (R)		
Flexion	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Extension	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4

	Movement against gravity resistance	5
Adduction	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Abduction	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Internal Rotation	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
External Rotation	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4

	Movement against gravity resistance	5
Motor assessment (Knee); Affected areas: LL (L), LL (R)		
Flexion	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Extension	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Motor assessment (Ankle); Affected areas: LL (L), LL (R)		
Plantar Flexion	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Dorsi Flexion	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2

	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Inversion	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Eversion	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Motor assessment (Toes); Affected areas: LL (L), LL (R)		
Flexion	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1
	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Extension	Not afflicted in SCI	NA
	Not existing	NE
	No contraction	1

	Flicker of contraction	2
	Movement in eliminated gravity	3
	Movement against gravity	4
	Movement against gravity resistance	5
Sensory assessment		
Superficial Sensation	Not afflicted in SCI	NA
	Not existing	NE
	No sensation below level of injury	1
	Sensation present below level of injury	2
	Patchy sensation half way below the injury level	3
	Patchy sensation throughout below injury level	4
	Above description 4 or reached normalcy	5
Deep Sensation	Not afflicted in SCI	NA
	Not existing	NE
	No sensation below level of injury	1
	Sensation present below the injury	2
	Patchy sensation half way below the injury level	3
	Patchy sensation throughout below injury level	4
	Above description 4 or reached normalcy	5
Autonomic assessment		
Bladder Sensation	Not afflicted in SCI	NA
	Not existing	NE

	No sensation of filling and voiding	1
	Mild sensation of fullness but no feeling of voiding	2
	Partial sensation of filling and voiding	3
	Full sensation of filling and partial sensation of voiding	4
	Above description 4 or reached normalcy	5
Bladder Control	Not afflicted in SCI	NA
	Not existing	NE
	No Control	1
	Control (> 1 Min)	2
	Control (> 5 Min)	3
	Control (> 10 Min)	4
	Above description 4 or reached normalcy	5
Bowel Sensation	Not afflicted in SCI	NA
	Not existing	NE
	No sensation of fullness and evacuation	1
	Mild sensation of fullness but no feeling of evacuation	2
	Partial sensation of fullness and evacuation	3
	Full sensation of fullness and partial sensation of evacuation	4
	Above description 4 or reached	5

	normalcy	
Bowel Control	Not afflicted in SCI	NA
	Not existing	NE
	No control	1
	Control (> 1 Min)	2
	Control (> 5 Min)	3
	Control (> 10 Min)	4
	Above description 4 or reached	5
	normalcy	
Sweating (Below the level of Injury)	Not afflicted in SCI	NA
	Not existing	NE
	Present	1
	Absent	5
Blood Pressure assessment	Not afflicted in SCI	NA
	Not existing	NE
	Low	1
	Variation on sitting	2
	Variation on standing	3
	Mild fluctuation On/Off	4
	Normal	5
General assessment		
Bed Sore Number	Admitted with no bed sore	NA
	Not existing	NE
	More than 10	1
	6 to 10	2
	3 to 5	3
	2	4
	1 or no bed sore remain	5

Bed Sore Size	Admitted with no bedsore	NA
	Not existing	NE
	More than 10 cm ²	1
	(6-10) cm ²	2
	(3-5) cm ²	3
	2 cm ²	4
	1 cm ² or no bed sore remain	5
Breathing	Not afflicted in SCI	NA
	Not existing	NE
	With ventilator	1
	With C-pap, Pri-pap	2
	With being used intermittently	3
	Breathlessness On/Off	4
	Normal	5
Swallowing	Not afflicted in SCI	NA
	Not existing	NE
	On peg tube	1
	Only liquids, difficulty with liquids	2
	Semi solids, difficulty with semi solids	3
	Solid, difficulty with solids	4
	Normal	5
Gait with Calipers	Not afflicted in SCI	NA
	Not existing	NE
	Cannot stand	1
	Trunk-hip-knee-ankle-foot orthoses (THKAFO)	2
	Hip-knee-ankle-foot orthoses (HKAFO)	3

	Knee-ankle-foot-orthoses (KAFO) + Ankle-foot-orthoses (AFO) +/-Shanon Brace/Gaiters	4
	Only Knee-ankle-foot-orthoses (KAFO)/ Ankle-foot-orthoses (AFO)	5
Spasticity	Not afflicted in SCI	NA
	Not existing	NE
	Affected part(s) Rigid in F/E	1
	Considerable increase in the muscle tone passive movement difficult	2
	Maximum marked increased in the tone through most of Rom but affected part(s) easily moved	3
	Slight increase in muscle tone manifested by a catch of release or by minimal resistance at the end of Rom when affected point(s) is moved in F/E	4
	Less spasticity than 3 or reached normalcy	5
Clonus	Not afflicted in SCI	NA
Affected areas:	Not existing	NE
Quadriplegia UL (R), UL (L)	Present	1
	Absent	5
Deformity	Not afflicted in SCI	NA
	Not existing	NE
	Present	1
	Absent	5

Flaccidity	Not afflicted in SCI	NA
	Not existing	NE
	Flaccidity with no muscle visible/only tendon	1
	Flaccidity with severe muscle loss	2
	Flaccidity with moderate muscle loss	3
	Flaccidity with minimal muscle loss	4
	Above description 4 or reached normalcy	5
Contracture	Not afflicted in SCI	NA
	Not existing	NE
	Present	1
	Absent	5
Bulk/ Limb Atrophy	Not afflicted in SCI	NAA
	Affected areas:	NE
	Quadriplegia: UL (R), UL (L), LL (R), LL (L)	1
	Absent	5
Sitting Balance	Not afflicted in SCI	NA
	Not existing	NE
	No sitting at all/requires maximum external support	1
	Requires moderate external support	2
	Requires Minimum external support	3
	Sits with no external support (UL weakness)	4
	Sitting balance normal	5
Standing Balance	Not afflicted in SCI	NA
	Not existing	NE

	Cannot Stand	1
	Stand with Caliper + Maximum Therapist support	2
	Stand with Caliper + Minimum Therapist support	3
	Stand independently with caliper/with external support)	4
	Stand normally	5
Walking Aid	Not afflicted in SCI	NA
	Not existing	NE
	Walker with elbow support	1
	Walker	2
	Elbow crutcher	3
	Cane	4
	No aid required	5
Calipers	Not afflicted in SCI	NA
	Not existing	NE
	AFO/Knee extension/Shanon Brace	1
	AFO +/Knee Extension/Shanon Brace	2
	KAFO +/Shanon Brace	3
	HKAFO	4
	THKAFO	5
Walking Distance	Not afflicted in SCI	NA
	Not existing	NE
	Less than five meters/ cannot walk	1
	Can walk up to 25 m only	2
	Can walk up to 50 m only	3
	Can walk up to 100 m only	4

SCI: Spinal cord injury; UL: Upper limb; LL: Lower limb; R: Right; L: Left; NA: Not afflicted; NE: Not existing.