Assistive technology assessment tool - *General*

- Structured framework for assessing assistive technology (AT) needs in people with spinal cord injury (SCI).
- Covers core general assessment domains common to most AT items.
- Use device-specific supplements for additional assessment considerations.
- The tool excludes consumables (e.g. bladder, bowel, skin, respiratory items) and home modifications.

Part 1: Client profile

Client name:		**URN:**		**D.O.B:**	

Client background	
SCI background *ISNCSCI level, AIS, mechanism, date of SCI, surgical management, medication*	
Other medical and health conditions *PMHx, comorbidities, alcohol & substance use*	
Participation *Life roles, employment & study, sport & recreation.*	
Home access *Own home, rental, NDIS SDA, Residential Aged Care, other*	
Community & transport access *Walk/ wheel from home, private vehicle, taxi, public transport*	
Informal care supports *Living situation, other*	
Formal care supports *Provider, frequency, tasks*	
Support services *GP, specialist, allied health, nursing, other*	
Funding supports *SCIR/MASS, LSRR, MAC, NDIS, NIISQ, other.*	
Client AT related goals	
1	
2.	
3.	
4.	

Clinician name/s	**Designation**	**Signature**	**Date**

Part 2: Anticipated AT needs

Client name:		URN:		D.O.B:	

Category		Item		Item	
Bed mobility	☐	Electric adjustable bed	☐	Pressure redistribution mattress
	☐	Companion bed	☐	Over bed table
	☐	Bed mobility AT (e.g. ladder, turning aids)	☐	Bed positioning AT (e.g. positioning systems)
Transfers	☐	Hoist & sling passive lifter	☐	Stand transfer device & sling
	☐	Transfer board	☐	Lifting & foot blocks
	☐	Chair raisers	☐	Lift/ recliner chair
Standing & walking	☐	Standing frame	☐	Gait aid
	☐	Lower limb orthoses	☐	Walk belt
Wheelchair mobility & seating	☐	Manual wheelchair	☐	Power wheelchair – ☐ 1 ☐ 2
	☐	Modifications to existing manual chair	☐	Modifications to existing power chair
	☐	Push mitts or gloves	☐	Power assist or add-on device
	☐	Postural back support ☐1 ☒ 2	☐	Pressure redistribution cushion ☐1 ☐ 2
Shower/ toilet seating	☐	Mobile shower commode	☐	Static shower chair/stool
	☐	Over toilet frame / raised seat	☐	Padded toilet seat
Personal care activities	☐	Bathing AT (e.g. grasping, reaching & operating washer & soap)	☐	Grooming AT (e.g. hair, teeth, makeup, nail care aids)
	☐	Dressing AT (aids to grasp & pull on/off items, modified fastenings or clothing)	☐	Skin checking AT (e.g. mirrors, positioning & photography aids)
	☐	Eating & medication AT (e.g. aids to grasp, manipulate, dispense; use cutlery, crockery, packaging)	☐	Drinking AT (e.g. adapted cups, bottles, straws, bladders or mounts)
	☐	Toileting AT – bladder (e.g. aids for positioning, grasping, mirrors, clothing management; emptying, privacy, storage)	☐	Toileting AT – bowel (e.g. positioning aids, inserters, stimulators, wipers, storage)
Home and community activities	☐	Meal preparation AT (e.g. aids for opening, cutting, chopping, pouring, transporting, mixing, reaching, gripping)	☐	Domestic task AT (e.g. aids for sweeping, vacuuming, wiping, hosing, reaching, carrying; or using washer/dryer, rubbish bin)
	☐	Communication AT (e.g. aids for reading, writing, typing, messaging, phoning; grasping / mounting).	☐	Carer & emergency call AT (e.g monitors, alarm systems, pagers)
	☐	Door & key lock AT (e.g. adapted or automated doors, intercoms, key locks or key storage)	☐	Internal home control AT (e.g. aids to control lights, temperature, TV, music, window coverings, appliances)
Life roles and participation	☐	Driving & transport AT (e.g. driver controls, postural supports, vehicle access, car transfers, wheelchair stowage, skin Mx)	☐	Parenting AT (e.g. aids to support carrying, lifting, feeding, sleeping, changing, bathing, dressing, playing, cleaning hair or teeth)
	☐	Leisure AT (e.g. aids for gardening, gaming, fishing, photography, art, water craft)	☐	Vocational AT (e.g. aids for mobility, workstation, lifting or carrying)
	☐	Exercise and physical management AT (e.g. aids for grasping weights, stretching, strengthening and cardiovascular fitness)	☐	Miscellaneous aids (e.g. mobile arm support, reacher, non slip mat, wheeled adjustable table/desk, table raisers, palmer pocket, wrist support brace.
Health management	☐	Respiratory AT (e.g. ventilator, pulse oximeter, humidifier, suction device, cough assist device, lung volume recruitment bag, respiratory muscle trainer, CPAP device)	☐	Autonomic management AT (e.g. blood pressure monitor, abdominal binder, thermometer, compression stockings)

Clinician name/s	Designation	Signature	Date

Part 3: Body systems

Client name:		URN:		D.O.B:	

Cognition & perception *Relevant history, current function, recent formal assessments, supports and services.*	
Mental health *Current function, medication, alcohol & substance use.*	
Sensory *Vision (glasses, last screen)* *Hearing (aids, last screen)* *Vestibular*	
Autonomic **nervous system** *At risk/has experienced: autonomic dysreflexia (AD), temperature dysregulation, reflexive sweating.*	
Cardiovascular **& cardiorespiratory** *Blood pressure lability/orthostatic hypotension, heart rate lability, physical fitness.*	
Respiratory & sleep *Ventilator assisted breathing, reduced lung volumes, impaired cough, respiratory infections, daytime sleepiness*	Management: ☐ airway/respiratory action plan ☐ ventilator device/suction device : ☐ cough assist device : ☐ HR/Oxygen monitoring device : ☐ CPAP device
Swallow **&** voice *Intact, impaired swallow, modified diet, respiratory infections, impaired voice, limited communication*	☐ Airway/respiratory action plan : ☐ Feeding plan : ☐ Voice support device
Bladder Management methods, medication, assistance required	☐ ICSC ☐ SPC ☐ Indwelling with bag ☐Indwelling with valve ☐ Voiding ☐ urgency ☐ incontinence
Bowel Management methods, aperients medication, assistance required	☐ nil deficit ☐ UMN ☐ LMN ☐ mixed U/L MN ☐ urgency ☐ incontinence ☐ enema ☐ suppository ☐ rectal stimulation ☐ manual removal of faeces ☐ transanal irrigation

Clinician name/s	Designation	Signature	Date

Part 4 Function

Client name:		URN:		D.O.B:	

Upper & lower limbs, trunk	*Use of AT , level of independence, activity strategies, falls risks*
Power *Manual muscle tests*	
Flexibility *Muscle length, range of motion, contractures*	
Sensation *Light touch/Pin prick Temperature/Proprioception*	
Pain *Type, location, triggers, severity, timing*	
Tone *Hypertonicity, spasticity, spasm patterns*	
Dependent oedema *Location, circumference, management & aids*	
Positioning splints/orthoses *Type, purpose, regime*	
Hand function *Grasp type and strength, dexterity*	
Mobility skills	*Use of AT , level of independence, activity strategies, falls risks*
Bed mobility *Rolling ⇔ lying, supine ⇔ sitting*	
Sleeping positions	
Sitting balance *Long sitting, short sitting, seated reach*	
Standing balance *Sit ⇔ stand, standing, standing reach*	
Transfers *Type, AT used, locations (bed, shower, toilet, lounge, floor, vehicle, other).*	
Walking *Gait pattern, endurance, indoor & outdoor skills*	
Manual wheelchair skills *indoor & outdoor skills*	
Power wheelchair skills *indoor/ outdoor skills, primary/secondary*	

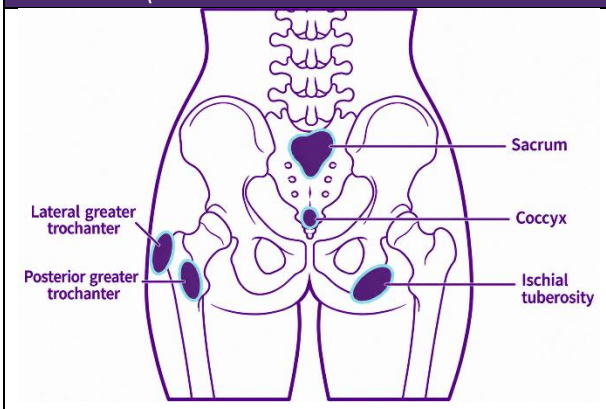
Activities of daily living	*Use of AT , level of independence, activity strategies, falls risks*
Bathing	
Grooming	
Toileting (bladder)	
Toileting (bowel)	
Menstruation management	
Dressing *completed in lying/sitting/standing*	
Eating	
Drinking	
Skin checking *Positioning, use of mirrors*	
Meal preparation	
Domestic tasks *laundry, cleaning, gardening*	
Communication *Writing, reading, phoning, computer access, voice*	
Calling for assistance *Carer & emergency calls*	
Driving *Control type, vehicle type/s*	
Transport *Vehicle access, public transport, taxis*	
Leisure	
Vocational	
Exercise	
Parenting	

Clinician name/s	Designation	Signature	Date

Part 5: Skin integrity

Use the QSCIS Interactive 3D model to determine skin breakdown location

Client name:		URN:		D.O.B:	

Location *(mark current or historical areas on image)*	Staging key
	**Stage 1** *Non-blanchable redness on intact skin* **Stage 2** *Partial thickness skin loss with exposed, viable dermis* **Stage 3** *Full thickness skin loss* **Stage 4** *Full thickness tissue loss* **Unstageable** *Full thickness loss obscured by slough or eschar*

Risk profile			
Braden Scale		Date	
Waterlow Scale		Date	
SCIPUS		Date	

Skin breakdown

	Location *(describe in relation to bony prominences)*	Stage	Size *(L x W x D)* & shape	Risk factors external/internal e.g. wasting, fragile skin, incontinence, positioning, spasm	History and interventions trialled e.g. first detected, frequency of breakdown, positioning tolerance e.g. RIB, change to AT
A					
B					
C					
D					

Key findings and potential AT features to consider:

Clinician name	Designation	Signature	Date

Part 6: Posture Mechanical Assessment Tool (MAT)

Learning to perform a MAT assessment: Watch the ACI videos of supine and seated assessments
Understanding postural descriptors: See the QSCIS Interactive 3D model

Client name:		URN:		D.O.B:	

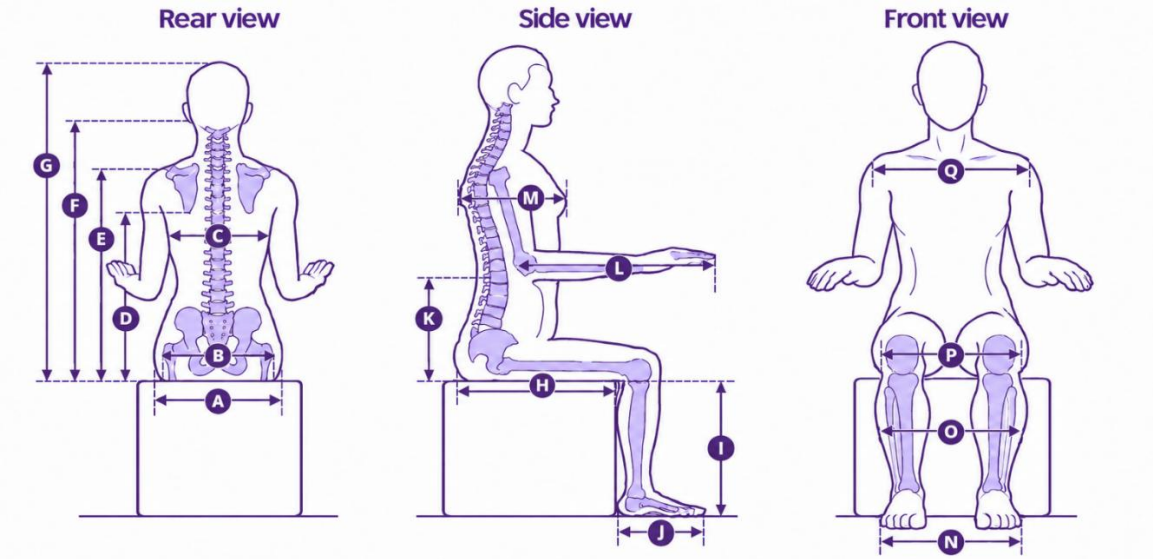
	Seated in chair	Supine on plinth	Seated on plinth	Comments
Pelvis				
Obliquity R lower than L by L lower than R by	☐ None cm cm	☐ None cm cm	☐ None cm cm	
Tilt	☐ Neutral ☐ Anterior ☐ Posterior	☐ Neutral ☐ Anterior ☐ Posterior	☐ Neutral ☐ Anterior ☐ Posterior	
Rotation R forward of L by L forward by R by	☐ None cm cm	☐ None cm cm	☐ None cm cm	
Trunk				
Spinal surgical fixation levels				
Lumbar lordosis	☐ Normal ☐ Flattened ☐ Lordotic	☐ Normal ☐ Flattened ☐ Lordotic	☐ Normal ☐ Flattened ☐ Lordotic	
Thoracic kyphosis ☐ Mid thoracic ☐ Upper thoracic	☐ Normal ☐ Flattened ☐ Kyphotic	☐ Normal ☐ Flattened ☐ Kyphotic	☐ Normal ☐ Flattened ☐ Kyphotic	
Scoliosis Convex to Apex at	☐ None ☐ R ☐ L	☐ None ☐ R ☐ L	☐ None ☐ R ☐ L	
Spine/ribs rotation Forward on	☐ None ☐ R ☐ L	☐ None ☐ R ☐ L	☐ None ☐ R ☐ L	
Head and neck				
Spinal surgical fixation levels				
Head alignment ☐ Lateral flexion ☐ Rotation ☐ Forward flexion ☐ Hyperextension	☐ Neutral ☐ R ☐ L ☐ R ☐ L ☐ ☐	☐ Neutral ☐ R ☐ L ☐ R ☐ L ☐ ☐	☐ Neutral ☐ R ☐ L ☐ R ☐ L ☐ ☐	
Lower limbs				
Thigh/lower leg Externally rotated Internally rotated Abducted Adducted Windswept to the	☐ Neutral ☐ R ☐ L ☐ R ☐ L ☐ R ☐ L ☐ R ☐ L ☐ R ☐ L	☐ Neutral ☐ R ☐ L ☐ R ☐ L ☐ R ☐ L ☐ R ☐ L ☐ R ☐ L	☐ Neutral ☐ R ☐ L ☐ R ☐ L ☐ R ☐ L ☐ R ☐ L ☐ R ☐ L	
Foot/ankle Plantarflexion Inversion Eversion	☐ Neutral ☐ R ☐ L ☐ R ☐ L ☐ R ☐ L	☐ Neutral ☐ R ☐ L ☐ R ☐ L ☐ R ☐ L	☐ Neutral ☐ R ☐ L ☐ R ☐ L ☐ R ☐ L	
Hip range True hip flexion	L R	L R	L R	
Knee range Hamstring length	L R	L R	L R	
Ankle range	L R	L R	L R	

Upper limbs (list any asymmetries/positioning issues)		
Sitting balance		
Sitting balance on firm surface	☐ Hands free ☐ Hands dependent ☐ Not able	Comments
Assistance from examiner	☐ Maximum ☐ Moderate ☐ Minimal ☐ None	Comments
Demonstrates	☐ Righting response ☐ Equilibrium response ☐ Protective response	Comments
Postural support simulation observations	Comments	
Key findings and potential AT features to consider:		

Name	Designation	Signature	Date

Part 7: Body dimensions

Client name:		URN:		D.O.B:	



	Body dimension	Measure	Measurement
A	Hip width	Across each lateral hip, including soft-tissue bulk	
B	Greater trochanter width	Across each greater trochanter, excluding soft-tissue bulk	
C	Trunk width	Widest part of the trunk at the chest or abdomen	
D	Scapular height	Sitting surface to the inferior angle of the scapula	
E	Shoulder height	Sitting surface to the acromion	
F	Occiput height	Sitting surface to the lower aspect of the occiput	
G	Overall seated height	Sitting surface to the top of the head	
H	Thigh depth	Rear of sacrum, including soft-tissue bulk, to popliteal fossa	
I	Lower leg length	Popliteal fossa to the base of the heel	
J	Foot length	Full length of the foot	
K	Elbow height	Sitting surface to underside of the forearm, elbow flexed to 90°	
L	Forearm/hand length	Back of the elbow to the wrist or tip of the third finger	
M	Chest depth	Posterior trunk to the anterior chest wall	
N	Feet width	Overall width across both feet	
O	Lower leg width	Across the lower legs at their widest point	
P	External knee width	Between the outermost aspects of the knees	
Q	Shoulder width	Between the outermost aspects of the shoulders	
Height:			
Weight:			
Body shape/habitus:			

Name	Designation	Signature	Date

Resources
Skin management learning ACI Pressure Injury Toolkit for Spinal Cord Injury and Spina Bifida The Canadian Best Practice Guideline for Prevention and Management of Pressure Ulcers in People with SCI **Skin breakdown rating scales** Pan Pacific Pressure Injury Classification System: Multicultural SCIRE Braden Scale for Predicting Pressure Sore Risk: Worksheet SCIRE Braden Scale for Predicting Pressure Sore Risk: Overview SCIRE Spinal Cord Injury Pressure Ulcer Scale (SCIPUS): Worksheet SCIRE Spinal Cord Injury Pressure Ulcer Scale (SCIPUS): Overview SCIRE Waterlow Pressure Risk Assessment Scale: Worksheet SCIRE Waterlow Pressure Risk Assessment Scale: Overview **Seating & AT selection learning** ACI Spinal Seating Modules: Module 3 ACI Spinal Seating Modules: Module 4 QSCIS Knowledge Hub: Assistive technology QSCIS 3D Anatomy Viewer