Assistive technology assessment tool - *Power wheelchair supplement*

- Structured framework for assessing power wheelchair (PWC) needs in people with spinal cord injury (SCI)
- First use the **general** assistive technology (AT) assessment tool covering core domains common to most AT
- Then use this device-specific **supplement** for additional assessment considerations
- Also see **postural back support** and **pressure redistribution cushion** supplements

Part 1: Power wheelchair safety profile

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

	Impact on skills or safe operation	**Management plan** *e.g. visual/cognitive assessments, medical review, supervision, supports, training, attendant controls*
Sensory		
Visual impairment *(e.g. acuity, fields)*		
Hearing impairment		
Medical		
Medications affecting operation		
Seizures		
Blood pressure or syncopal episodes		
Obstructive sleep apnoea impacting alertness		
Spasm and hypertonicity		
Cognition		
Alertness, orientation		
Attention (sustained, divided)		
Judgement, impulsivity, insight		
New learning, information processing		
Problem solving (familiar & unfamiliar environments)		
Mental health		
Anxiety		
Mood (depression / elevation)		
Psychosis		
Alcohol use		
Substance use		
Functional neurological disorder		
Other behavioural considerations		
Respiratory		
Respiratory supports e.g. ventilator		

	Impact on skills or safe operation	Management plan *e.g. visual/cognitive assessments, medical review, supervision, supports, training, attendant controls*
Physical and sensory		
Upper limb impairments (PWC hand control)		
Neck, head, eye and postural control (PWC chin, head or eye control)		
Other		
Other safety considerations		
Power wheelchair risk matrix and management strategies		

Risk Matrix Table

Likelihood	SEVERITY				
	Negligible (no injuries)	**Minor** (first aid treatment only)	**Moderate** (medical treatment)	**Major** (extensive injuries)	**Extreme** (death)
Rare (may occur, only in exceptional circumstances)	Low	Low	Low	Medium	High
Unlikely (could occur at some time)	Low	Medium	Medium	High	Very High
Possible (might occur at some time)	Low	Medium	High	Very High	Very High
Likely (will probably occur in most circumstances)	Medium	High	Very High	Very High	Extreme
Almost Certain (expected in most circumstances)	Medium	Very High	Very High	Extreme	Extreme

Image source: health.qld.gov.au/mass

Risk Identified	Likelihood	Severity	Risk matrix	Risk mitigation options

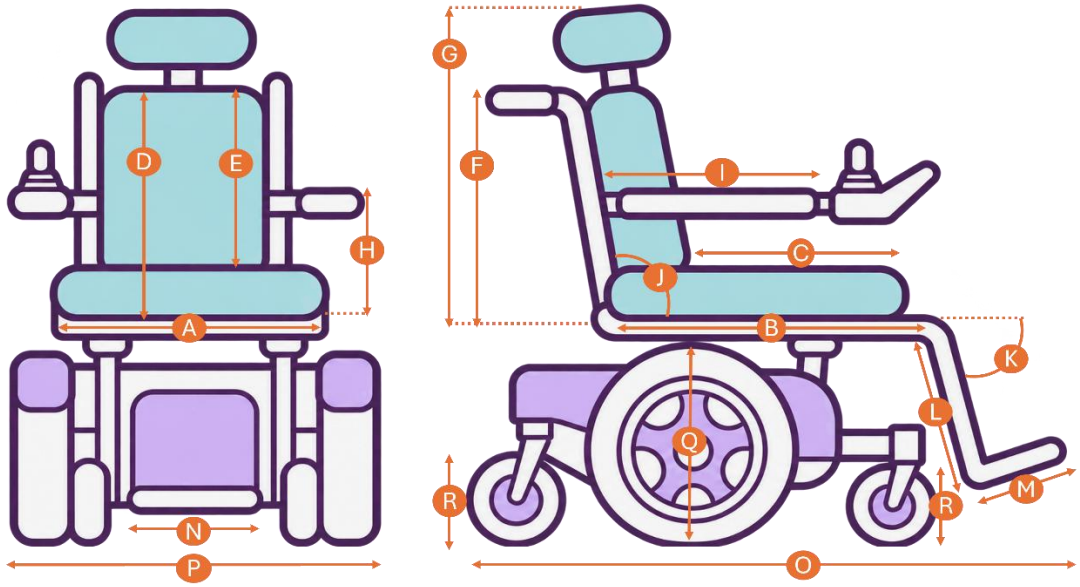
Clinician name/s	Designation	Signature	Date

Part 2: Current power wheelchair dimensions

Client name:		URN:		D.O.B:	

Power wheelchair details				
Make / model:		Drive type:		☐ Current/existing chair ☐ Trial chair

Power wheelchair measurements



		Measurement	Comments
A	Seat width		
B	Seat depth		
C	Effective seat depth		
D	Seat surface to top of backrest		
E	Top of cushion to top of backrest		
F	Back upright (post/cane) height		
G	Seat pan to headrest height		
H	Armrest height	L R	
I	Armrest length	L R	
J	Seat to backrest angle (°)	°	
K	Leg hanger angle (°)	°	
L	Footplate hanger length		
M	Footplate length		
N	Footplate width		
O	Overall chair length		
P	Overall chair width		
Q	Drive wheel diameter		
R	Caster diameter	Front Rear	
	Other		

Clinician name/s	Designation	Signature	Date

Part 3: Goals and predicted mobility

Use to record existing chair features that are currently successful; or new predicted requirements.

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

Goals

Goals for power wheelchair use *List functional activities and environments of anticipated use*	
Goal 1	
Goal 2	
Goal 3	
Goal 4	

Predicted mobility

Predicted mobility *Select all that apply*				
☐ Ambulation ☐ no aids ☐ 4 wheeled walker ☐ 1 ☐ 2 crutches ☐ Rollator frame ☐ Walking stick ☐ Other:	☐ Manual wheelchair ☐ Rigid ☐ Folding frame ☐ Power add-on: ☐ rear attachment ☐ push rim activated ☐ front attachment ☐ Joystick control	☐ Power wheelchair ☐ indoor/outdoor ☐ all-terrain ☐ lightweight/ folding ☐ Scooter ☐ self-balancing	☐ Private vehicle-travel in car seat ☐ Driver ☐ Passenger ☐ Private vehicle-travel in wheelchair ☐ Driver ☐ Passenger	☐ Taxi ☐ Transfer into car seat ☐ Seated in wheelchair ☐ Bus ☐ Train ☐ Ferry ☐ Tram

Part 4: Predicted features and requirements

Use to record existing chair features that are currently successful; or new predicted requirements.

Client name:		URN:		D.O.B:	

Drive configuration, wheels and motors

Drive type			
☐ Mid wheel drive	☐ Rear wheel drive	☐ Front wheel drive	☐ All wheel drive
Drive wheels/tyres			
☐ Indoor	☐ Outdoor / community	☐ Off road/all-terrain	
Castor size front / rear:		Tyre colour considerations:	
Motors, battery and suspension			
Battery considerations:			
Suspension considerations:			
Torque considerations:			
Power base function			
☐ Tilt in space (posterior tilt)	☐ Anterior tilt	☐ Recline	
☐ Seat elevation	☐ Elevating legs ☐ power ☐ manual	☐ Standing	
Notes / customisations			

Controls

Hand controller					
Joystick type:					
Hand controller mounting					
☐ Left ☐ Right	☐ Swing away	☐ Drop down	☐ Offset	☐ Rotated	☐ Swivel
Controller display					
☐ No display	☐ Display	☐ Enhanced display			
Buttons for power/mode/power functions					
☐ Standard ☐ Quick access ☐ Seat memory ☐ External switches	*External switch type (e.g. round, light touch, sip/ puff)*				
	External switch mount location (e.g. controller, head, mouth)				
Alternate drive controls - *proportional*					
☐ Chin control ☐ Manual boom ☐ Electric boom ☐ Chest harness-mounted	☐ Eye movement controller ☐ Gyroscopic controller	☐ Heavy-duty controller ☐ Foot controller ☐ Mini joystick controller			
Alternate drive controls – *non-proportional*					
☐ Direct switch drive with ☐ head ☐ sip/puff switches					
☐ Switch-scanning drive with ☐ head ☐ sip/puff switches					
Attendant controls					
☐ Attendant control	☐ Remote disable /cut out switch				
Electronic driving features					
Custom drive parameter programming for fwd/ rev / turn / accelerate / decelerate:					
☐ Tracking and steering technology to improve straight line driving					
Connectivity					
☐ Infrared (IR) for environmental control (e.g. TV)	☐ Bluetooth (e.g. for phone/computer mouse)				
Notes / customisations					

Seating

Seating size	
Seat width:	
Seat depth:	

Pressure redistribution cushion	
Predicted cushion *(Make, model, WxD, height):*	
Predicted cushion modifications:	

Back support mounting			
☐ Back upright posts (canes)	☐ Centre mounting	☐ Integrated seating	☐ Folding

Back support	
Predicted postural back support (Make/model/ height/width/depth):	
Lumbar support, foam build up/ other postural accommodation or correction supports:	

Back support laterals			
Style ☐ Integrated ☐ Detachable ☐ Swing away ☐ Custom manufacture e.g. REC	Depth ☐ Shallow depth ☐ Moderate depth ☐ Deep	Detachable lateral size (LxW):	
		Height/location on back support:	
		Style (shape/angle/flare):	

Postural supports			
☐ Headrest ☐ standard ☐ complex	☐ Chest strap ☐ Leg strap ☐ Pelvic belt ☐ Postural harness	Comments / other postural supports:	
Notes / customisations			

Upper limb supports

Armrests			
Mounting and operation style ☐ Independent operation required ☐ Flip up ☐ Drop down ☐ Removable ☐ Single post ☐ double post ☐ Heavy duty / reinforced ☐ Offset ☐ Swivel ☐ Side guards	Armrest surface ☐ Wide ☐ Waterfall ☐ Foam padded ☐ Gel padded ☐ Gel liner ☐ Forearm trough ☐ Hand pad ☐ Elbow guides ☐ Forearm guides	Dimensions or features:	
Notes / customisations			

Lower limb supports

Leg rests			
Mounting and operation style ☐ Independent operation required ☐ Individual swing away ☐ Centre mount ☐ Stump support	☐ Hanger angle _____ ° ☐ Tapered hanger	☐ Calf strap ☐ Calf panel ☐ Calf pad/s	☐ Thigh guide ☐ Adductor pads ☐ Padded hangers

Footplates			
☐ Single footplate ☐ Two-piece footplate ☐ Angle adjustable ☐ Depth adjustable ☐ Custom	☐ Padded ☐ Footplate guides	Footplate dimensions LxW	
Notes / customisations			

Transport and safety

Transport		
☐ Tie down points ☐ Docking system	For travel seated in chair Vehicle clearance height:	
	Internal space available for chair LxW	
	Lift platform SWL	
Safety		
☐ Meets Australian standards	☐ Safe working limit should accommodate (client weight)	
Notes / customisations		

Function

Accessories		
☐ Tray table ☐ Drinking system (hydration ☐ Drink bottle holder ☐ Urine bag drainage system ☐ Electric ☐ manual	☐ Ventilator mounting ☐ Rear-view camera ☐ Lighting ☐ USB charging port ☐ Phone/tablet mount ☐ Spare tyre/tube	☐ Push handles ☐ Storage bags ☐ Accessory hook ☐ Luggage holders
Notes / customisations		

Compatibility

AT compatibility for transfers	
Describe requirements for compatibility with Hoist (passive lifter or standing transfer aid) Bed Shower commode chair Desk/workstation/table Other	
Environmental compatibility needs:	
Describe requirements for compatibility with Home – internal Home - external Work or study Local community (roads, kerbs, paths, amenities)	

Clinician name/s	Designation	Signature	Date

Part 5: Trial evaluation

Client name:		URN:		D.O.B:	

	Brief description of trial experience
Trial dates/duration	
Trial locations	☐ hospital ☐ home ☐ outdoor/community/shops ☐ taxi ☐ public transport ☐ work/study ☐ other
Trial chair (make/model)	
	Brief description of trial chair configuration
Drive wheel type	
Power base functions	
Controller type *(hand/specialty/other)*	
Speed profiles	
Back support	
Cushion	
Headrest	
Arm support	
Leg rest hangers	
Footplates	
Seating *(width/ depth/ postural securements)*	
Functional accessories *(eg phone /hydration mounts)*	

Posture and seating	*Meets needs?*	*Comments*
Suitable: Seat width	☐ Yes ☐ No ☐ N/A	
Seat depth	☐ Yes ☐ No ☐ N/A	
Upper limb supports	☐ Yes ☐ No ☐ N/A	
Lower limb supports	☐ Yes ☐ No ☐ N/A	
Head support	☐ Yes ☐ No ☐ N/A	
Postural asymmetry correction or accommodation	☐ Yes ☐ No ☐ N/A	
**See postural back support & pressure redistribution cushion supplements*		
Secondary condition management	*Meets needs?*	*Comments*
Suitable for: Pain management	☐ Yes ☐ No ☐ N/A	
Autonomic dysreflexia management	☐ Yes ☐ No ☐ N/A	
Skin management	☐ Yes ☐ No ☐ N/A	
Oedema management	☐ Yes ☐ No ☐ N/A	
Spasticity management	☐ Yes ☐ No ☐ N/A	
Control operation	*Meets needs?*	*Comments*
Suitable for: Operating buttons switches e.g. power, mode, speed	☐ Yes ☐ No ☐ N/A	
Clear vision of display	☐ Yes ☐ No ☐ N/A	
Skill development - controller use (joystick/chin/other)	☐ Yes ☐ No ☐ N/A	

Drive performance	Meets needs?	Comments
Suitable:		
Directional control	☐ Yes ☐ No ☐ N/A	
Acceleration, declaration and stopping	☐ Yes ☐ No ☐ N/A	
Turning, reversing and manoeuvrability	☐ Yes ☐ No ☐ N/A	
Ride experience & performance	*Meets needs?*	*Comments*
Suitable:		
Suspension (on various surfaces and gradients)	☐ Yes ☐ No ☐ N/A	
Torque (on various surfaces and gradients)	☐ Yes ☐ No ☐ N/A	
Comfort (in various environments)	☐ Yes ☐ No ☐ N/A	
Tyre colour markings, noise	☐ Yes ☐ No ☐ N/A	
Power features	*Meets needs?*	*Comments*
Suitable:		
Seat elevate	☐ Yes ☐ No ☐ N/A	
Posterior tilt	☐ Yes ☐ No ☐ N/A	
Anterior tilt	☐ Yes ☐ No ☐ N/A	
Recline	☐ Yes ☐ No ☐ N/A	
Leg elevate	☐ Yes ☐ No ☐ N/A	
Standing	☐ Yes ☐ No ☐ N/A	
Memory functions	☐ Yes ☐ No ☐ N/A	
AT compatibility	*Meets needs?*	*Comments*
Compatible with required:		
Postural support backrest	☐ Yes ☐ No ☐ N/A	
Pressure redistribution cushion	☐ Yes ☐ No ☐ N/A	
Postural securements and supports	☐ Yes ☐ No ☐ N/A	
Hoist and sling	☐ Yes ☐ No ☐ N/A	
Bed and mattress	☐ Yes ☐ No ☐ N/A	
Mobile shower commode chair	☐ Yes ☐ No ☐ N/A	
Desk/ workstation/ table	☐ Yes ☐ No ☐ N/A	
Home environmental controls /smart AT	☐ Yes ☐ No ☐ N/A	
Connectivity (e.g. phone, computer)	☐ Yes ☐ No ☐ N/A	
Mounts (e.g. phone, hydration)	☐ Yes ☐ No ☐ N/A	
Private vehicle	☐ Yes ☐ No ☐ N/A	
Environment compatibility	*Meets needs?*	*Comments*
Suitable for access to:		
Indoor home: internal doorways, hallways, elevator, bedroom, bathroom, kitchen, laundry, other	☐ Yes ☐ No ☐ N/A	
Outdoor home: deck, yard, ramp, driveway, kerb, letterbox, external doorways	☐ Yes ☐ No ☐ N/A	
Community: paths, kerbs, camber, terrain, amenities	☐ Yes ☐ No ☐ N/A	
Leisure settings	☐ Yes ☐ No ☐ N/A	
Workplace or study settings	☐ Yes ☐ No ☐ N/A	
Suitable:		
Overall footprint	☐ Yes ☐ No ☐ N/A	
Turning radius	☐ Yes ☐ No ☐ N/A	
Transfers: bed, car, chair, shower chair, toilet	*Meets needs?*	*Comments*
Suitable for performance of:		
Independent adjustment of arm supports	☐ Yes ☐ No ☐ N/A	
Independent adjustment of leg supports	☐ Yes ☐ No ☐ N/A	
Side transfers	☐ Yes ☐ No ☐ N/A	
Standing transfers	☐ Yes ☐ No ☐ N/A	
Hoist transfers	☐ Yes ☐ No ☐ N/A	

Function – daily activities	Meets needs?	Comments
Suitable for performance of: Bathing, grooming, dressing	☐ Yes ☐ No ☐ N/A	
Eating, drinking	☐ Yes ☐ No ☐ N/A	
Toileting – bladder, bowel, menstruation	☐ Yes ☐ No ☐ N/A	
Kitchen and domestic activities	☐ Yes ☐ No ☐ N/A	
Function – participation, roles, community access	*Meets needs?*	*Comments*
Suitable for performance of tasks related to: Shopping	☐ Yes ☐ No ☐ N/A	
Leisure / hobbies	☐ Yes ☐ No ☐ N/A	
Work or study	☐ Yes ☐ No ☐ N/A	
Parenting	☐ Yes ☐ No ☐ N/A	
Public transport access	☐ Yes ☐ No ☐ N/A	
Maxi taxi access	☒ Yes ☐ No ☐ N/A	
Formal and informal supports	*Meets needs?*	*Comments*
Suitable for supports to perform: Repositioning / redistribution	☐ Yes ☐ No ☐ N/A	
Hoist and sling application and removal	☐ Yes ☐ No ☐ N/A	
Assisted transfers (side or standing)	☐ Yes ☐ No ☐ N/A	
Attendant control operation	☐ Yes ☐ No ☐ N/A	
Adjustment of specialty controls (e.g. chin boom)	☐ Yes ☐ No ☐ N/A	
Set up of accessories (e.g. phone & hydration mounts)	☐ Yes ☐ No ☐ N/A	
Personal care tasks (e.g. feeding, bladder care)	☐ Yes ☐ No ☐ N/A	
Respiratory cares (e.g. assisted cough)	☐ Yes ☐ No ☐ N/A	
Cost and after sales service	*Meets needs?*	*Comments*
Price point compatible with available funding	☐ Yes ☐ No ☐ N/A	
Servicing & maintenance available in local area	☐ Yes ☐ No ☐ N/A	

Overall sentiment, summary and plan for next trial	
Positive features	
Negative features	
Did the chair meet the goals? *(listed in part 3)*	
Summary of suitability	
Changes or requirements for next trial:	

Clinician name/s	Designation	Signature	Date

Part 5: Trial record form

Client name:		URN:		D.O.B:	

Power wheelchair trial record					
PWC details Make, model, drive wheel type, controller type	**Trial** dates, length & locations of Trial	**Seating** Seat width, seat depth, backrest, cushion, headrest, postural supports, armrest type, legrest & footplate type	**Met goals / needs**	**Unmet goals/ needs**	**Things to change or continue form**

Clinician name/s	Designation	Signature	Date