Prescriber Manual
Adult
Wheelchairs & Scooters

A Manual devised by the SWEP Clinical Advisory Team to assist SWEP registered prescribers

Acknowledgments for information and use of images go to:
Independent Living Centre; Yooralla AT Learning

Table of Contents

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Background

The prescription of wheelchairs and scooters is a complex and multifaceted process. It requires a high level of technical knowledge from a clinician, in a collaborative partnership with the client, to ensure that equipment meets the person's physical and functional needs. A large range of tools and resources have already been developed by other people and organisations.

To enhance prescription capability among prescribers, the SWEP Clinical Advisors have developed this resource manual primarily to provide links to existing evidence, recommended assessments and measures, and ranges of product types. Some short checklists of factors to consider have also been developed for wheelchair and scooter prescription.

Wheelchairs

Recommended Assessments and Measures

There is no standardised format or legislation governing the requirements for wheelchair assessment. However, wheelchairs are not allowed to exceed 10 KMPH when travelling on a footpath, and wheelchair users are required to use the footpath wherever possible.

The SWEP application form asks for information about, and hence expects assessment of:

Physical presentation:
Prescribers need to be able to identify

- weight/height
- postural abnormality
- high/low tone
- limited joint range
- complex postural needs and/or
- a rapidly changing condition

A physical hands on evaluation (or MAT assessment) will be required to determine tone and range of movement. This assessment does not have a standardised procedure and many templates are available (refer to references). It is important that therapists understand how different joint limitations or postures can impact the sitting position, and how

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wheelchair features may need to be adjusted to suit the client's physical presentation.

Pressure care and skin integrity:
The therapist needs to know about existing pressure issues and risks for skin integrity. This may impact on the recommended sitting posture as well as materials used in the wheelchair.

Cognitive assessment: Formal or informal assessment is required so that the therapist can determine if there are any cognitive issues and how equipment needs to be set up to accommodate these needs. Questions on the application form regarding behaviours of concern and whether or not a support person is needed may also be linked to a client's cognitive function.

Environment assessment: Again there is no formalised assessment, but the therapist needs to be confident that the requested equipment is suitable for the home and community environments used by the client. A trial of the equipment in the relevant environments is the most reliable way of identifying potential issues and required adjustments.

A wheelchair assessment also needs to consider the client's functional abilities and how their daily activities will interact with the requested equipment. It is important to consider your clients' expectations of the wheelchair and how it will impact on their daily life. Templates that help the therapist consider these factors can be found in the references.

Items that may assist with….

In addition to the references and tools provided at the end of this manual, a short reference guide to commonly encountered situations and equipment features that may assist is provided below.

Items that may assist with transfers in and out of the wheelchair:

- Anterior tilt – standing transfers
- Tilt in Space – position person back in chair
- Seat to floor height – standing transfers
- Removable / folding footplates – step transfers
- Removable arms supports – side transfers, sling in and out
- Swing away laterals
- Removable thigh laterals – increase ease of sling attachment

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Items that may assist with bariatric clients

- Allowance for gluteal shelf in considering backrest type and position
- Use of fabrics in cushion covers that breathe, wick moisture and /or conduct heat away from the skin surface
- Use of scrotal support for males at risk of impingement when seated
- Be aware of manufacturers weight limits
- Chair set up where centre of mass and centre of gravity will be different to a standard set up

Items that may assist with pressure care

- Tilt in Space
- Recline
- Combination of tilt and recline
- Adjustable cushions – pelvic obliquity, hip flexion contractures
- Moulded seating systems
- Before using pelvic obliquity build ups check if postural asymmetries are fixed or flexible using a MAT evaluation

- Thigh laterals – improve lower limb and foot position
- Orthotics made in conjunction with the WC prescription
- Thoracic laterals
- Hip blocks
- Pelvic positioning belts – consider design and placement

Items that may assist with positioning

- Tilt in Space
- Adjustable cushions – pelvic obliquity, hip flexion contractures
- Moulded seating systems
- Thigh laterals
- Thoracic laterals
- Positioning belts

Items that may assist with wheelchair performance

- Yearly chair service
- Battery size
- Tyre style and tread width
- Cushions
  - o Supply clear washing and drying instructions
  - o Note use of creams that may degrade the cushion and cover

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- Timely replacement of covers and cushions
- Correct cushion size to allow for inserts when used.
- Chair set up
- Centre of mass

- Centre of gravity

Items that may assist with accessing the environment

- Suspension
- Frog legs
- Battery size
- Training
- Rigid frame
- Low seat to floor height with reduced seat depth - leg propulsion
- Arm rest design

Items that may be added to assist with health and daily activities:

- Ventilator transport mounting
- Oxygen transport mounting
- Suction transport mounting
- PEG poles
- Canopies
- Lifestyle accessories (bag hooks, cup holders, etc)

Items that may assist with storage and maintenance

- Annual service
- Location of power points for charging
- Powered door access to storage location

Items that may assist with moving the chair

- Attendant control
  - Consider RWD for ease of operation
- Power pack
  - Consider weight limits, proposed terrain
- Push rims
- Power assist wheels
- One arm control wheels
- One arm drive
- Height adjustable or stroller push handles
- Wheel size, tyre width and type

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- Extended brake handles and location of brakes
- General set up as above

Items that may assist with continence management and personal care

- Continence cover
- Consider impact on skin integrity
- Two covers
- Chair height
- Vertical lift
- Cut out in mid anterior foam (replaceable) for bottle use
- Recline
- Impact of TIS and recline on catheter drainage

Items that may assist with transportation

- Tie downs
- Head rests
- Seat belt
- Folding frame
- Transportation aides such as frames, hoists and trailers
- Manual handling
- Overall all weight and use of removable backrests and cushions
- Weight of individual parts such as backrest and hardware

Considerations for frequency of use

SWEP have identified that there are two broad categories of manual wheelchairs

- a more durable high frequency use wheelchair and
- a lower frequency use wheelchair

More durable high frequency use wheelchair

This category of manual wheelchair is most appropriate when a client

- uses the wheelchair on a daily basis
- requires more adjustment in the wheelchair to give precise postural support due to the time spent in the chair
- needs a more robust manual wheelchair due to regular or ‘heavy’ use, or to hold additional postural supports such as backrests, harnesses etc

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Lower frequency use wheelchair

This category of manual wheelchair is most appropriate when a client

- does not use the wheelchair on a daily basis and may be able to use other methods for some mobility
- can manage if the wheelchair frame or postural supports are not as customised or robust due to reduced frequency of use. Client may need a lighter weight wheelchair to assist support people to lift the equipment in and out of a vehicle boot etc (please check weight specifications for each product).

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Scooters

Recommended Assessments and Measures

There is no standardised format or legislation governing the requirements for assessment of a powered mobility scooter. A scooter is usually prescribed for someone who has difficulty accessing their community however is able to mobilise in their home environment.

Scooters are not designed to have modified seating and pressure care products. They are designed for community access. Therefore this needs to be considered with any scooter prescription.

Scooters or wheelchairs are not allowed to exceed 10 KMPH and scooter users are required to use the footpath wherever possible.

Storage: SWEP requires the client to have an accessible and appropriate storage and point to recharge scooters prior to the scooter being funded.

Recommendations when assessing capacity to use a scooter
Obtaining medical clearance: signed clearance from GP to state client has no medical conditions which impact on their capacity to operate a scooter.

Vision: As per wheelchairs there are no set standards. However for a drivers licence, a person's vision needs to be equal or better than 6/12 with both eyes together.

Visual fields should be assessed. If a client has worse than 6/9 vision they should be referred for an optometric assessment.

Cognition: Attention, visual, verbal memory and relearning capacity are important to consider when assessing a client's suitability to use a scooter.

Trial and follow up training: A trial should be completed around the home environment.

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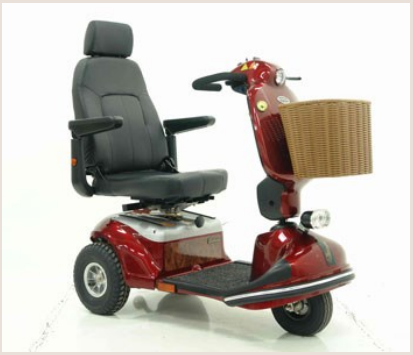
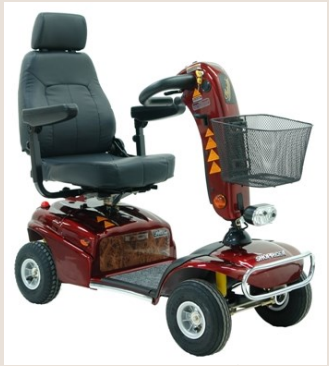
Considerations when choosing a scooter

Three-wheeled versus four-wheeled scooters:
Four-wheeled scooters often feel more stable for clients on uneven terrain. However, three-wheeled scooters have a smaller turning circle are easier to manoeuvre and have more leg room.

Suspension:
Can differ greatly on scooters so if the client has a history of back pain a scooter with good suspension is required.

Environment:
Where the scooter will be used. In a hilly environment a client may require a scooter with a stronger motor.





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References, Further Readings and Resource Links

Summary of evidence

Wheelchair and scooter prescription must be evidence based with best practice guidelines being applied to individual clinical needs. Included in this manual is a non exhaustive list of research and evidence pertaining to wheelchair and scooter prescription. Please refer to the following reference list.

New resources for Provider of Wheelchairs and Seating Systems

In 2013 a clinical guide and a glossary of terms and definitions were published to standardise the language and measures used to describe seating.

After eight years of International collaboration the following Standard was published by the International Standards organisation (ISO)

- ISO 16840-1 (2006): Wheelchair Seating – Vocabulary, reference axis convention and measures for body posture and postural support surfaces.

Its purpose was to:

- Objectively describe and measure posture of the wheelchair seated person
- Quantify angular orientation of seating support surfaces, and be able to relate these to the posture of the person
- Standardize terms and definitions for linear dimensions of seated person's body
- Standardize terms and definitions for linear dimensions of seating support surfaces

In 2011 a grant was awarded to fund the development of a Clinical Application Guide based on this standard.

1. **A Clinical Application Guide to Standardized Wheelchair Seating Measures of the Body and Seating Support Surfaces, Revised Edition**

This guide aims to translate the content of the Standard into a resource manual as standards are complex documents and expensive to purchase.

In this resource manual defining over 130 measurement terms, the authors present a complex ISO standard in a format and language that is easy to understand and practical to use. It includes the correct terminology for angular and linear measurements of the seated person's body and the seating support system.

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For each term the guide explains the purpose of the measure and its clinical relevance, with an accurate definition, a sample measurement procedure, and 1 to 2 illustrations helping to clarify each measure.

2. Glossary of Wheelchair Terms and Definitions, Version 1.0

This glossary includes a searchable list of 550+ defined terms related to wheelchairs, wheelchair seating, and wheelchair seated posture. The terms are organized functionally in four sections: (1) Wheeled Mobility Device Types and Related Terms, (2) Wheelchair Components and Features, (3) Seating Support System and (4) Angular and Linear Dimensions. Reference sources are included for each term and definition, and historical terms are linked to the preferred term in a comprehensive index.

This and the glossary of terms are available in PDF format, free to download, so that everyone has access to the information.

The link to download these two resources is:-
http://www.ucdenver.edu/academics/colleges/medicalschool/programs/atp/Resources/WheelchairGuide/Pages/WheelchairGuideForm.aspx

Resources for Wheelchair Prescription:

The NSW government Health Support Services Enable NSW have produced an excellent reference titled 'Guidelines for the prescription of a seated wheelchair or mobility scooter for people with a traumatic brain injury or spinal cord injury'. Much of the information can also be generalised to the prescription of wheelchairs for clients with other conditions. http://www.enable.health.nsw.gov.au/documents/ clinical_guidelines/3053_01_wheelchair_guide_line_low_2.pdf

Manual for Clinical Outcome Measurement in Adult Neurological Physiotherapy. 4th Edition. Available through the Australian Physiotherapy Association.

NSW agency for clinical innovation, spinal seating professional development site: http://www.aci.health.nsw.gov.au/networks/spinal-seating

This link has a detailed mechanical assessment tool including guidelines for use and a chair measurement guide: www.simplestuffworks.co.uk

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Bariatric measurement forms:
www.mobilitymgmt.com/articles/2010/06/01/anatomy-of-bariatric-mobility.aspx
http://www.pdgmobility.com/PDG-FAQs/PDG-Bariatric-Measurement-Sheet.pdf

Refer to SWEP and Independent Living Centre websites for updates on current equipment
http://swep.bhs.org.au/
http://www.ilcaustralia.org/home/victoria.asp
http://www.therohogroup.com/proper_adjustment.jsp
http://www.sunrisemedical.com/index.jsp

General wheelchair prescription information can be found at numerous sites including:
http://www.wheelchairskillsprogram.ca/eng/wspforms.html

Scope is one of the largest providers of services to people with a disability in Victoria. For information on prescribing and safely using harnesses please refer to this link: http://www.scopevic.org.au/index.php/site/resources/harnesssafety

Bibliography of current articles

Arva, J.,Schmeler, M., Lange, M., Lipka, D., Rosen, L., RESNA Position on the application of seat elevating devices for wheelchair users. Assistive technology, 2009. 21:p. 69-72.

RESNA - Rehabilitation Engineering and Assistive technology Society of North America, position on the tilt, recline and Elevating leg rests. 2008, RESNA: Arlington

RESNA _ Rehabilitation Engineering and Assistive Technology society of North America. Terms and definitions for specialized seating D.Hobson, Editor. 2007

Mortenson, W, B., Miller W, C., & Miller-Pogar, J., (2007). Measuring wheelchair intervention outcomes: Development of the wheelchair outcome measure, Disability and Rehabilititation: Assistive technology, 2(5), 275-285

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Useful websites for scooter users and therapists

A guide for choosing and using motorised mobility devices: Mobility devices and electric wheelchairs
http://www.vicroads.vic.gov.au/NR/rdonlyres/A9E5F4AF-F1CD-40E5-9FD2-EEDFD9083918/0/MotorisedMobilityDevices.pdf

http://www.vicroads.vic.gov.au/Home/SafetyAndRules/RoadRules/ScootersAndWheeledDevices.htm

Government of South Australia disability services: Guide to choosing a wheelchair or scooter: Choosing a scooter.
http://www.sa.gov.au/upload/entity/1646/DS%20documents/information-sheets/wheelchairs-scooters-selecting-scooter.pdf

How scooters work: For more information on components of scooter and mechanics
http://www.scootersaus.com.au/index.php/small-mobility-scooter/how-scooters-work

The EWC/scooter trial form at this link maybe a useful guide for therapists
http://www.dva.gov.au/dvaforms/Documents/D1325.pdf

Met Link: Mobility Aids. This includes a link on using mobility aids on public transport.
http://www.metlinkmelbourne.com.au/accessible-transport/mobility-aids/

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