



Assistive Technology and Specialised Seating Department

Power Mobility and Access Methods



National Specialist Services (ATSS)

- Assistive Technology (AT)
- Specialised seating (SS)
- Support individuals with physical disabilities to identify solutions that enhance participation and promote independence.
- Custom moulded seating
- Power mobility and alternative access
- Manual wheelchairs
- Assistive Technology



Where are we based?

- ATSS is a national outpatient service that supports primary care, disability and acute services
- Bases in Dublin, Limerick and Waterford
- Outreach services – Portlaoise, Mullingar, Trim



Referral



Assistive Technology & Specialised Seating (ATSS) **ATSS Referral Form**



SCAN ME

Section 1: Client Details

Please complete all required fields marked with an asterisk (*)

1.1 Client's Personal Details:

Surname:*	First name:*	DOB:*
Address:*		Eircode:*
Phone #1:	Phone #2:	Email:
Medical Card No. / Long-Term Illness (LTI) No.:*		Expiry Date:
Has client given consent for this referral?*		1 st language:
☐ Yes ☐ No		English
		Interpreter required? ☐ Yes ☒ No

1.2 Key Contact Person / Guardian / Next of Kin:

Surname:	First name:	Relationship:
Address:		Eircode:
Phone #1:	Phone #2:	Email:

Referral Criteria

Any person with:

- a primary complex physical disability,
- dual diagnosis (physical and intellectual disability),
- a complex neurological and/or neuromuscular disorder

Who requires:

- specialised postural support and mobility to optimise function within their daily lives,

and/or

- technology for communication, alternative access to electronic assistive technology solutions for education, employment, mobility, leisure or community-based activities.



Power Mobility

What do we mean by 'powered mobility equipment'?

- Powered wheelchairs
- Battery-powered devices
- Adapted commercially available products



(salsa PWC picture, [Explorer Mini Pic](#); [Bugzi Picture](#);)

Who would benefit from power mobility?

- Mobility impairment
- Insufficient strength/ ROM/ Coordination/ Endurance for manual propulsion
- Cardiorespiratory endurance deficiency
- Manual mobility pain
- At risk of overuse syndrome
- Pressure risk
- Progressive condition
- Postural Asymmetries
- Spina Bifida
- Spinal Muscular Atrophy
- Spinal Cord Injury
- Multiple sclerosis
- Juvenile Arthritis
- OI
- MND
- MS
- Parkinson's
- Weight



When to consider powered mobility?

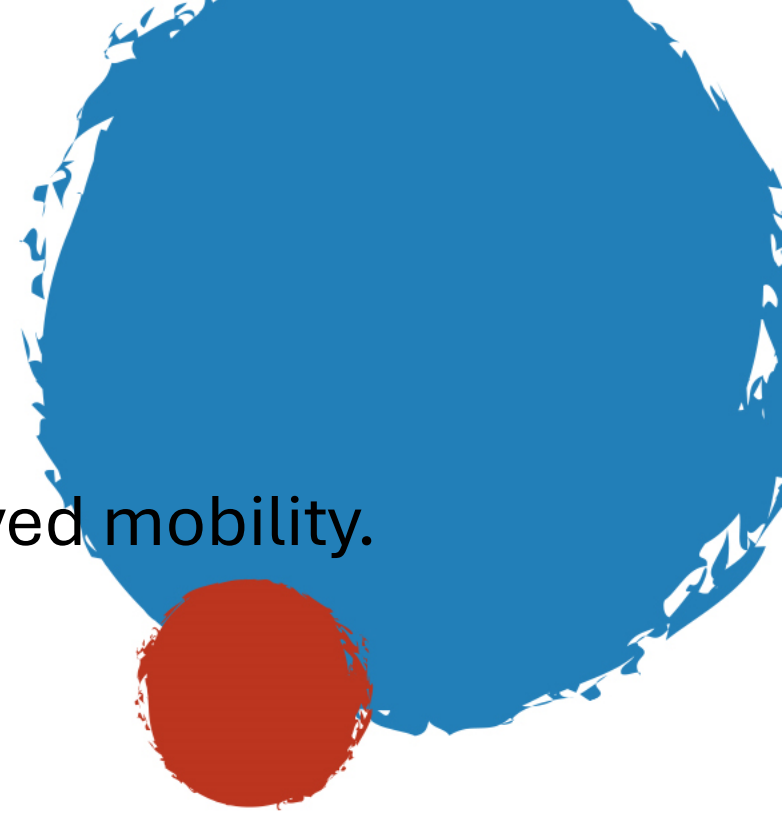
RESNA Position Statement

1. Children who will never walk
2. Children with inefficient mobility
3. Children who lose the ability to walk or to walk efficiently
4. Children who need mobility assistance in early childhood



On time mobility

- Toddlers between 12-30 months
 - primary physical disability/ delayed mobility.
 - Less than 14kg and/or 95cm
-
- Equipment is provided on a loan basis
 - CREDI at initial, 3 months and 6 months
 - Outcomes include social, emotional, cognitive and motor skill development
-
- [On Time Mobility – YouTube](#)

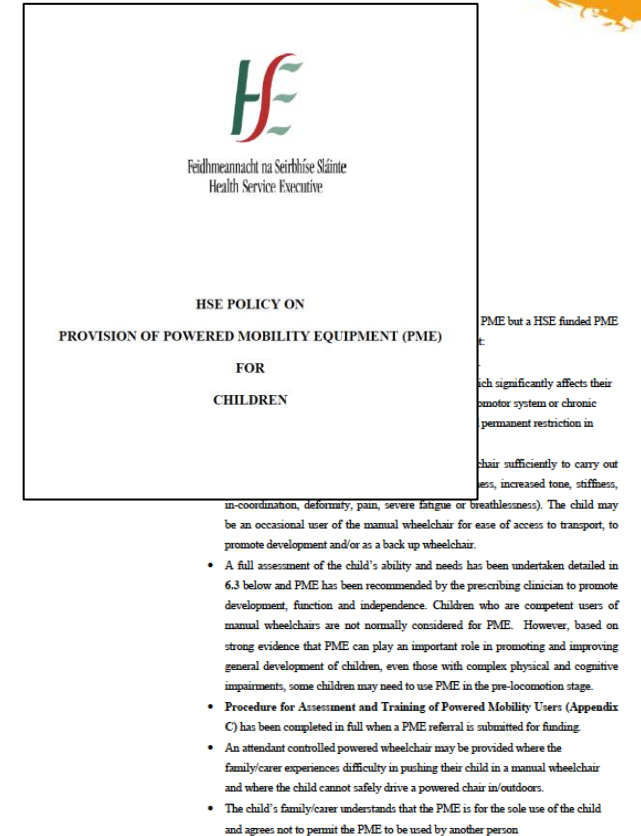


When to consider powered mobility?

HSE PME

Assessment

- ▶ Power mobility Device Assessment Training Tool
- ▶ Medical History and medical clearance
- ▶ Home environment
- ▶ Assessment of physical, cognitive, sensory and behavioural challenges
- ▶ Physical assessment to include postural alignment and stability, skin integrity, upper limb strength, ROM and measurements
- ▶ Cognitive assessment
- ▶ Impact on quality of life



- The child's family/carer acknowledges that the PME cannot be altered or modified in any way whatsoever.

(HSE, 2013, 2026)



Front wheel drive PWC

- Four wheels; drive wheels at the front
- Obstacle climbing
- Large turning radius
- Difficult to get used to
- Alternate drive control users



Mid wheel drive PWC

- Six wheels; drive wheels in the middle
- Four casters increase stability
- Smallest turning radius
- Intuitive to drive
- Casters mitigate risk of tipping
- Majority of prescription; suitable for indoor and outdoor use



Rear wheel drive PWC

- Four wheels; drive wheels at the back
- Power from the back
- Good for rough and uneven terrain
- Good shock absorption
- Suitable for heavy duty users who use it mainly outdoors
- Limited indoor use

Key Components of a Powered Wheelchair



SEATING SYSTEM

Supports posture, comfort and pressure management

- 1 Headrest
- 2 Backrest
- 3 Back Post
- 4 Armrest
- 5 Cushion
- 6 Seat Board
- 7 Calf Pad
- 8 Legrest Hanger
- 9 Footplate



ELECTRONICS

Controls driving and powered functions

- 1 Display Unit
- 2 Controller (Joystick)
- 3 Electronics Module (Under Seat)



POWER BASE

Provides movement, stability and power

- 1 Drive Wheel
- 2 Castor Wheel
- 3 Suspension
- 4 Motors (Inside Base)
- 5 Batteries (Under Base)



SEATING SYSTEM

Provides postural support, comfort and positioning for daily activities.



ELECTRONICS

Enables driving and controls all powered seating functions.



POWER BASE

Delivers power, stability and performance across different environments.

Power Wheelchair Functions

Quickie Salsa Q700 UP – Multiple powered functions for comfort, positioning and independence

1. TILT



Tilts the seat and back together to redistribute pressure and improve comfort.

2. RECLINE



Reclines the backrest independently for rest, pressure relief and comfort.

3. SEAT ELEVATION (RISER)



Raises the seat vertically to improve reach, interaction and independence.

4. STANDING



Transitions from sitting to a supported standing position.

5. LYING / FULL RECLINE



Reclines to a near-flat position for rest, pressure relief and medical needs.

The background features several large, hand-drawn style circles in blue, orange, and red. In the top left, there is a small orange circle and a larger blue circle. In the top center, there is a large red circle. In the top right, there is a large orange circle and a small blue circle. In the bottom left, there is a large red circle. In the bottom center, there is a large blue circle and a small orange circle.

Access Methods



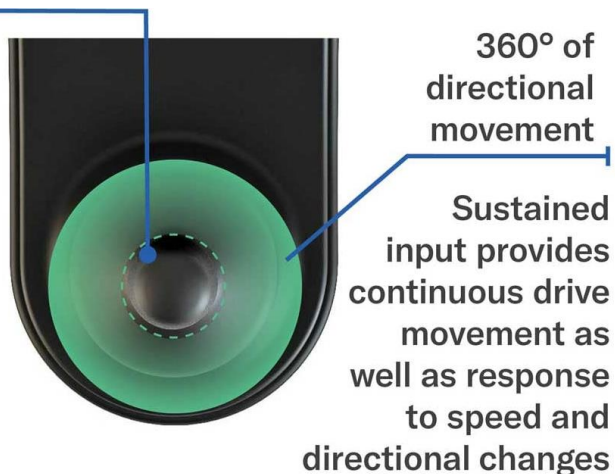
Alternative Access for Powered Mobility

- Efficiency
 - Time and Energy
 - For people who can use a standard joystick this driving method provides an effective means to control both speed and direction in one input device
 - What if a client cannot use a standard joystick?
- 



Proportional control

- Full directional control with 360 degree circle and control of speed
- The position of the joystick in relation to the centre determines the direction
- The distance from the centre determines the speed (throw)
- To stop return to centre



Switch Access

- Suitable for clients who do not have adequate motor skills or strength to control any proportional access method.
- Speed is static
- Direction of movement limited to four
- Determining location and type of switches is key



LED

- Entry level control
- Appropriate as attendant controller
- Lights/no lights
- NO switch input
- NO remote switch
- Bluetooth can be programmed
- NOT SUITABLE FOR:
 - access issues
 - Progressive conditions



LCD

- Full colour or Monochrome
- 2 switch input
- Switch input for on/off & Mode
- Bluetooth available



LCD Advanced/CJSM 2

- Large, high-resolution 3.5" VGA color display
- Infra-Red (IR) Control and Bluetooth control available
- Stylish and ergonomic design
- Built-in light sensor to automatically adjust screen brightness
- Toggle switches for easy access to user controls
- Enhanced programming and customization options

Attendant control

- Simple transfer to/from user control
- Attendant speed control and display
- Attendant control of seating functions
- Attendant control of all other modes



Joysticks

- Best option when suitable
- Positioning of the individual
- Mounting/placement of the joystick
- Alternative joystick knobs (shape, texture, height)
- Programming adjustments (ie. throw, dampening, deadband, etc)



Omni 2

- R-net speciality control Interface
- Ultra-slim 3.5" VGA screen
- Integrated Bluetooth® wireless technology
- Infra-Red (IR) control
- Built-in light sensor
- Dual-channel inputs, analogue and digital



Mini Proportional Joysticks

- Suitable for people with reduced strength or range of motion
- Require less force and travel distance to access
- Mini proportional - 10 to 50 grams of force
- Fragile and cannot be handled by carers etc.



Remote joystick

- Joystick no buttons
- Compact and robust design
- Connects directly to most specialty control interfaces
- Variety of mounting options
- Can be used with switches



Chin controls

- Mini proportional control joysticks mounted near chin
- Operated by jaw movement or tongue
- Can be challenging to control especially outdoors



Foot control

- Proportional control
- Placed on the footplate and connected directly to an alternative access source
- Designed for people with reduced hand or arm function but with good foot control.
- Operated by foot movement



Head array

- Can be proportional/ switch/ combination of both
- Limited hand or arm movement but good head and neck control
- 3 main pads – occipital and lateral pads
- Can add additional switches for functions
- Programming is key to success



Switch tray array

- Proximity switches can be mounted under tray
- When client runs hand over tray they activate switch.
- Fiber optic Switch Array
- When the client interrupts the light beams it activates of light
- Reduces need for vertical movement
- Leave space between switches for resting

PROXY TRAY ARRAY



OPTIONS

FEATURES

FIBER TRAY ARRAY

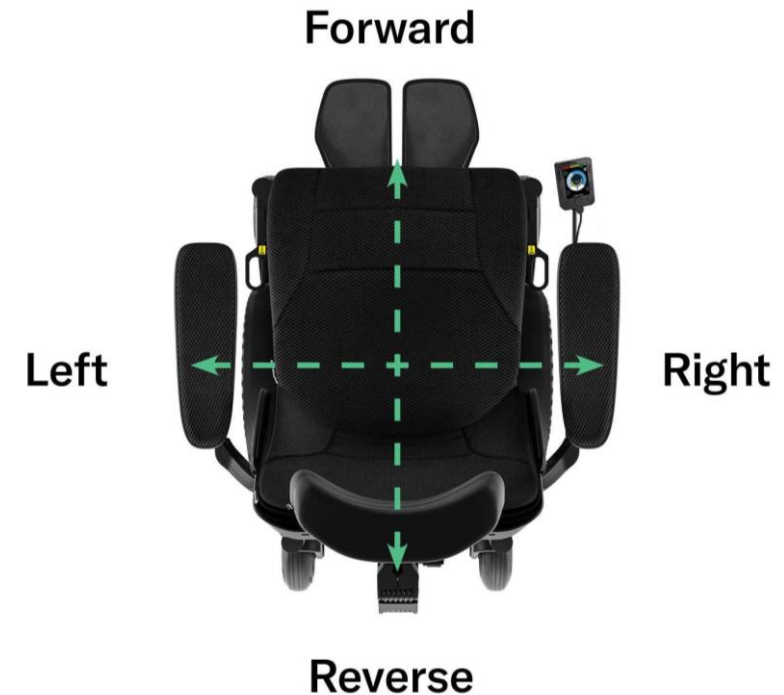
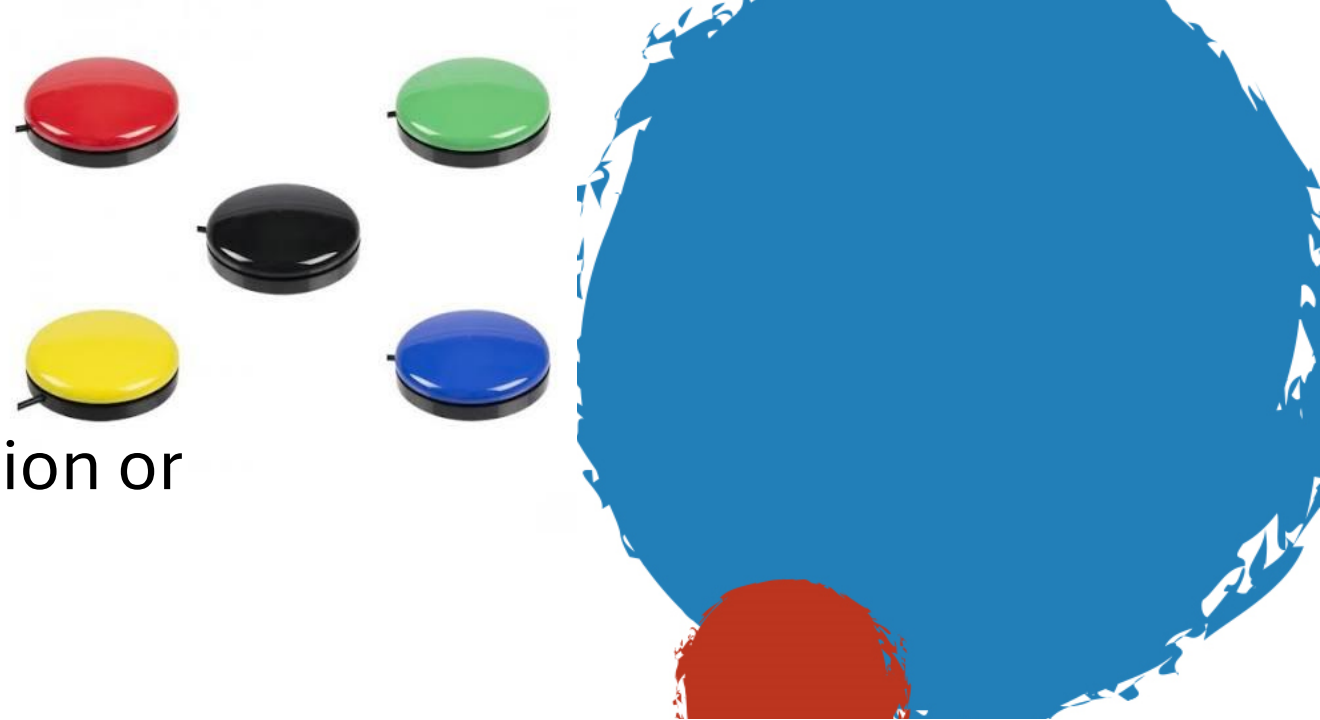


OPTIONS

FEATURES

Switch access

- Reduced strength, range of motion or coordination
- Not proportional
- Multi switch array or switch scanning
- A speciality control interface is required
- One switch typically used for switch scanning
- Programming is key to success



References/ Resources

Plummer, T., Logan, S. W., & Morress, C. (2021). Explorer Mini: Infants' Initial Experience with a Novel Pediatric Powered Mobility Device. *Physical & Occupational Therapy In Pediatrics*, 41(2), 192–208.

<https://doi.org/10.1080/01942638.2020.1819935>

Rosen, L., Plummer, T., Sabet, A., Lange, M. L., & Livingstone, R. (2023). RESNA position on the application of power mobility devices for pediatric users. *Assistive Technology*, 35(1), 14–22. <https://doi.org/10.1080/10400435.2017.1415575>

Powered Mobility Device Assessment Training Tool – PoMoDATT

- <https://hub.permobil.com/alternative-drive-controls#switched>
- <https://stealthproducts.com/481/>
- <https://www.mo-vis.com/>



Thank you

Any questions?



ATSS TRAINING LECTURE SERIES

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*Building knowledge. Enhancing care.
Empowering better outcomes.*



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YOUR KNOWLEDGE AND PRACTICE IN ASSISTIVE TECHNOLOGY

OCTOBER
7TH



TRAINING SERIES 1

Introduction to ATSS and our
Enhanced Care Pathways

🕒 2-3pm

OCTOBER
14TH



TRAINING SERIES 2

Introduction to
custom moulded seating

🕒 2-3pm

OCTOBER
21ST



TRAINING SERIES 3

Introduction to
manual wheelchairs

🕒 2-3pm

OCTOBER
28TH



TRAINING SERIES 4

Introduction to power mobility
and alternative access

🕒 2-3pm

NOVEMBER
4TH



TRAINING SERIES 5

Introduction to
assistive Technology

🕒 2-3pm



ALL SESSIONS ARE
HELD 2-3PM

Mark your calendar and
join us for each session!



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