Paediatric power mobility - increasing options for early independent mobility Handout
Tim Adlam, Rae Baines, Debbie Field, Scott Langmead, Roslyn Livingstone, Ginny Paleg


Program Description: This workshop will present research and best practice supporting use of power mobility with infants, toddlers and preschool children. It will incorporate videos, case-studies and hands-on experience. Presenters from different countries will highlight recent research in this area as well as innovations in child-friendly technology and creative service delivery programs.

Objectives:
• compare features of at least three equipment options and describe their benefit to children and families
• describe at least four considerations for developing a loan program for assessment and provision of power mobility
• discuss at least three physical, social and environmental considerations when introducing power mobility

Reviews of paediatric power mobility literature


Individual Studies referenced in our presentation (in order of presentation)


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*Physical Therapy*, 83(3):253-262.
Case study 1 child 20 months of age with SMA

Cohort study without control group 6 children 24-26 months of age 5 with SMA 1 with congenital MD

Qualitative study of 5 mothers of children aged 3-7 years when they first received a power wheelchair.

Cohort study without control group 25 children aged 3-8 years with CP

Additional studies of young children referenced in our systematic review (Livingstone & Field 2014)

<table>
<thead>
<tr>
<th>Reference</th>
<th>Study Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lynch et al, 2009</td>
<td>1 7 months of age with spina bifida; UD1 robotic trainer</td>
</tr>
<tr>
<td>Ragonesi et al, 2012</td>
<td>1 11 months of age with CP; Koala power wheelchair</td>
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<tr>
<td>Galloway et al, 2008</td>
<td>1 14 months with Down syndrome + 1 7 months typically developing age, UD1</td>
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<tr>
<td>Butler et al, 1986</td>
<td>6 23-38 months of age with CP, SB, OI; power wheelchair</td>
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<tr>
<td>Ragonesi et al, 2010</td>
<td>1 3 year old with CP; UD2</td>
</tr>
<tr>
<td>Ragonesi et al, 2011</td>
<td>1 3 year old with CP; UD2</td>
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<tr>
<td>Benedict et al, 1999</td>
<td>13 children, one a power wheelchair user, 2-4yrs with CP or a metabolic disorder</td>
</tr>
<tr>
<td>Douglas &amp; Ryan 1984</td>
<td>1 4 year old with SCI; Everard turbo power wheelchair</td>
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<tr>
<td>Deitz et al, 2002</td>
<td>2 5 year olds with CP; motorized toy car</td>
</tr>
<tr>
<td>McGarry et al, 2012</td>
<td>4 5 years olds and older with CP; Smart wheelchair</td>
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<tr>
<td>Tefft et al, 2011</td>
<td>23 parents of 18-72 months of age with CP + other diagnoses; power wheelchair</td>
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<tr>
<td>Pope et al, 1994</td>
<td>10 2.5-9 year olds with CP; specialized seating &amp; mobility system (SAM)</td>
</tr>
<tr>
<td>Home &amp; Ham 2003</td>
<td>57 parents of 2-7 year olds with CP &amp; SMA; power wheelchair</td>
</tr>
<tr>
<td>Ostenjo et al, 2005</td>
<td>22 of 95 2-7.5 year olds with CP; power wheelchair</td>
</tr>
<tr>
<td>Wiart et al, 2003</td>
<td>66 children under 18 years of age (some as young as 2); power wheelchair</td>
</tr>
</tbody>
</table>

Other Early Childhood Power Mobility Literature

Count Me In Report (Disability Services Western Australia - A summary of interviews and research into international best practice in early powered mobility compiled following a scholarship funded study tour in 2013-2014). Available by contacting scott.langmead@abilitycentre.com.au

Other power mobility devices


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Ride-on toy vehicles


Expert opinion supporting the early use of power mobility


Sunny Hill Health Centre for Children (SHHC) Power mobility resources
http://www.seatingandmobility.ca/PowerMobility/pm_PowerMobilityIntro.aspx
Also available through wheeled mobility pages on http://www.childdevelopment.ca/Home.aspx

SHHC Power mobility training ideas
http://www.seatingandmobility.ca/Libraries/Pdfs/Power_Mobility_Training_Ideas_forCHILDREN.sflb.ashx

SHHC Evidence4Practice Power mobility for infants and preschoolers
http://www.childdevelopment.ca/Libraries/Evidence_for_Practice/Power_Mobility_for_Infants_Preschoolers_2012.sflb.ashx

SHHC Evidence4Practice Power mobility for school-aged children
http://www.childdevelopment.ca/Libraries/Evidence_for_Practice/Power_Mobility_for_School_Aged_Children_2012.sflb.ashx

SHHC Power Mobility Assessment: Choosing the Driving Method elearning module
https://learninghub.phsa.ca/Courses/6000/power-mobility-assessment-choosing-the-driving-method

SHHC Beginning power mobility: for young children with cerebral palsy parent handout
http://www.cw.bc.ca/library/pdf/pamphlets/BCCH1467MobilityRead2012.pdf

SHHC Power to participate parent handout (introducing benefits of power mobility use)

SHHC-sponsored Environmental scan of power mobility use practices across Canada
https://www.cadth.ca/power-mobility-for-preschool-children
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**Paediatric Power Mobility Equipment Manufacturers/Suppliers**

*Early childhood power mobility devices*

- Designability Wizzybug  

- MERU Bugzi  

- University of Delaware Go Baby Go (ride-on toy car modifications)  
  [http://www.udel.edu/gobabygo/](http://www.udel.edu/gobabygo/)

- Babybot (BBot) website Christy Byers PT (plans to share fabrication plans online)  
  [http://www.bbot.me](http://www.bbot.me)

- Enabling Devices scooterboard  
  [https://enablingdevices.com/catalog/mobility](https://enablingdevices.com/catalog/mobility)

- Kids Loco and Baby Loco Project (Japan)  

- Do It Yourself (DIY) instructions for Powered mobility training device for toddlers  
  [http://www.instructables.com/id/Powered-mobility-training-device-for-toddlers-1/](http://www.instructables.com/id/Powered-mobility-training-device-for-toddlers-1/)

*Power wheelchairs*

- Invacare Tiger Cub and TDX Spree  
  [http://www.invacare.ca/cgi-bin/imhqprd/inv_catalog/prod_cat.jsp?s=0&catOID=-53687494](http://www.invacare.ca/cgi-bin/imhqprd/inv_catalog/prod_cat.jsp?s=0&catOID=-53687494)

- Ottobock Skippi  

- Permobil  
  K450 (rearwheel)  Koala (frontwheel)  K300 PS Jr (frontwheel)  M300 PS Jr (midwheel)  
  [http://www.permobil.ca/wheelchairs.php](http://www.permobil.ca/wheelchairs.php)

- Quantum Rehab Q6 Edge 2.0 and Q610  

- Quantum Rehab Sparky (Australia & the UK)  
  [http://www.quantumrehab.co.uk/product-range/Jazzy-Power-Chair-Range/Jazzy-Sparky](http://www.quantumrehab.co.uk/product-range/Jazzy-Power-Chair-Range/Jazzy-Sparky)

- Sunrise Medical Zippie ZM-310  
  [http://www.sunrisemedical.ca](http://www.sunrisemedical.ca)

- Open Wheelchair Foundation (Brigham Young University open access plans for DYI power wheelchair)  
  [http://openwheelchair.org](http://openwheelchair.org)

- Permobil Tiro  

- Smile Rehab Smart wheelchair  
Measurement Tools & Wheelchair Training

*Wheelchair driving tests*

**Assessment of Learning Powered mobility use (ALP)**


**Power Mobility Program (PMP)**


**Butler’s 7 wheelchair skills**


**Participation & goal setting**

**Canadian Occupational Performance Measure (COPM)**

**Goal Attainment Scaling (GAS)**

**Individually Prioritised Problem Assessment (IPPA)**

**Wheelchair Outcome Measure for Young People (WhOM-YP)**
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Other resources


Dalhousie University Faculty of Medicine Wheelchair Skills Program (materials for adult manual & power)
http://www.wheelchairskillsprogram.ca

Karen Kangas Powered mobility training for children with complex needs. International Seating Symposium notes
http://www.seatingandmobility.ca/Libraries/word_documents/019_PoweredMobilityTrainingforChildren.sflb.ashx

Michelle Lange and Ablenet Inc. recorded webinars: (1) Is your client ready for a power wheelchair? (2) Pre-mobility training—developing readiness to use a power wheelchair (3) Power Mobility: Mobility training
https://www.ablenetinc.com/resources/recorded_webinars/

WhizzKidz charitable organization in the UK offers manual and power wheelchair equipment and training

Leckey Firefly GoTo Seat http://www.fireflyfriends.com/goto-seat

Special Tomato positioning supports http://www.specialtomato.com

Please contact us for further information:

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