FIRST TIME PEDIATRIC POWER USERS, PROBLEM SOLVING FOR COMPLEX ACCESS

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Learning Objectives

1. Participants will understand assessment criteria for power mobility.
2. Participants will develop strategies to assess for access to drive control.
3. Participants will be introduced to set-up of specific equipment showing complex access solutions.
4. Participants will understand the importance of considering client’s communication needs and how technology can be interfaced with drive control.

Introduction

For some children with severe motor disabilities, a power wheelchair is their first mobility experience and for others it builds on previous experiences. The power wheelchair can allow children independent exploration with decreased reliance on caregivers leading to more age-appropriate interaction with their peers. With this independence comes a sense of achievement which may not have been reached with previous mobility experiences. It is important to think about all children who are not functional in their mobility as potential power mobility users. In children with spastic cerebral palsy if certain milestones requiring good trunk control have not been achieved by age three, then the chances of functional independent ambulation is limited. Restricted early mobility is associated with the onset of learned helplessness and has a lasting impact. Not all of the children we introduce to power mobility will become power wheelchair owners, but the movement experience may stimulate cognitive development and be a valuable part of their therapy. Efficient and independent locomotion can lead to increased confidence, a greater opportunity to make choices and more active participation in their own lives rather than remaining spectators. With intervention focusing on participation goals such as keeping up with peers and energy conservation for other activities, introducing power mobility early can lead to social inclusion and community integration.

Assessment

Prior to starting a power mobility assessment, the child’s seating must first be assessed. Without a well supported base of support from which to work, the child will not be set up for success. Assessment for first time power mobility is a complex, team process. The process can be lengthy involving changes in drive control, programming, wheelchair configuration, ongoing training and reassessment. The following areas should be considered:

Areas to Assess

- Seating assessment
  - Well supported and positioned
- Previous mobility experience
- Driver control access points
  - Most reliable movement
  - Avoid reflexive movements
- Position for vision
- Requirements for position change
- Wheelchair configuration
  - Mid wheel
• Rear wheel
• Front wheel
• Consideration of electronic capabilities – inclusion of devices through the wheelchair electronics
  o Communication
  o Seat functions
  o Computer
  o Environmental controls
• Other mounting needs
  o Life support
• Accessibility – home and school
• Transportation

Criteria for Selection of Driver Controls:
• Points of access – how many and where
• Proportional vs. digital
• Caregiver friendliness
• Electronic requirements of the wheelchair
  o ECU

Driving Assessment
• Movement and exploration
• Variety of environments – quiet and busy
• Ability to problem solve
• Reaction time
• Safety

Some checklists are available to assist clinicians with their assessments of children\textsuperscript{13,14} but these cannot replace clinical judgment.

The process of assessment, trial, skill building and reassessment should be thoroughly completed prior to developing the prescription. Sometimes it is difficult to complete the assessment without specific modifications to the equipment. Clinical judgment must be used to determine what equipment and modifications are required for the system to be functional for the child. It can be difficult to determine when enough learning has been witnessed to ensure that the child is safe and competent in their driving to proceed with developing a specific prescription. As with all children, “independence” is individual and age appropriate supervision is needed. Given that a child is still learning and developing it is recommended the equipment be flexible and modular in order to meet ongoing functional and growth needs.

This presentation will utilize case studies to illustrate the assessment and prescription process.

References


**Speaker Bios**

Marlene Holder, BSc., P.T.
Marlene is a Physiotherapist working in seating and mobility at Bloorview Kids Rehab. She has a strong interest in custom seating and power mobility with a focus in paediatrics. Marlene can be reached at mholder@bloorview.ca.

Kathy Fisher, BSc (OT), ATP, Education Manager, Shoppers Home Health Care
As an equipment supplier and educator Kathy has worked with a wide variety of client age and diagnostic groups with a special interest in pediatrics. Kathy has presented at a variety of international conferences including Canadian Seating and Mobility Conference, European Seating Symposium, International Seating Symposium and Medtrade.