

MOBILITY TRAINING

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What we are covering today:

- Mobility Training
- For the child who already has a power wheelchair
- Also refer to our last webinar, Developing readiness (pre-mobility training)

Handouts

- Mobility Training Guidelines for Power Wheelchairs
- PDF of the powerpoint

What Does the Research Say?

- Mobility Training

Children with Severe Intellectual and/or Sensory Impairments

- Many children, **even those with significant and multiple impairments**, can use a power wheelchair with appropriate training, support and supervision
 - Developmental benefits may outweigh functional and completely independent mobility



Children with Severe Intellectual and/or Sensory Impairments

- Many children with severe intellectual and/or sensory impairments can learn to use a power mobility device competently with appropriate practice and environmental support
 - Bottos M, Bolcati C, Sciuto L, Ruggeri C, Feliciangeli A. Powered wheelchairs and independence in young children with tetraplegia. *Dev Med Child Neurol* 2001; 43: 769–77.
 - McGarry S, Moir L, Girdler S. The smart wheelchair: is it an appropriate mobility training tool for children with physical disabilities? *Disabil Rehabil Assist Technol* 2012; 7: 372–80.
 - Nilsson L, Eklund M, Nyberg P, Thulesius H. Driving to learn in a powered wheelchair: the process of learning joystick use in people with profound cognitive disabilities. *Am J Occup Ther* 2011; 65: 652–60.

Children with Severe Intellectual and/or Sensory Impairments

- What does that mean for us?
- Many children with **severe intellectual and/or sensory impairments** can learn to use a power mobility device competently with appropriate practice and environmental support

Mobility Training

- Successful learning of power mobility skills may depend at least as much on **practice time and quality of learning support** within the child's environment as the child's motor, cognitive, or sensory abilities
 - Bottos M, Bolcati C, Sciuto L, Ruggeri C, Feliciangeli A. Powered wheelchairs and independence in young children with tetraplegia. *Dev Med Child Neurol* 2001; 43: 769–77.
 - Nilsson L, Nyberg P, Eklund M. Training characteristics important for growing consciousness of joystick-use in people with profound cognitive disabilities. *Int J Ther Rehabil* 2010; 17: 588–95.

Mobility Training

- Wow, listen to that again!
- The quantity and quality of mobility training matter as much as what the child's skill set is!



Mobility Training Goals

- Mobility training **optimizes driving efficiency**
- Even if the client was evaluated for a PWC and one was recommended, this does not mean further training is not required
- Mobility training completes the evaluation, possibly indicating the need for programming changes or other interventions



Driver's Training: motor vehicles

- Let's put this in context:
 - Teenagers have to get a permit, often practice for a full year, putting in 40-50 hours with a parent, before even taking a test to get a license
 - These teens have average motor, sensory and cognitive skills
 - For a teen...
 - These teens have ridden in cars and watched other drivers their entire lives (modeling)



Driver's Training: PWCs

- Many PWC users have motor, sensory and/or cognitive limitations
- Many PWC users have never seen another person use a PWC
- Often, little or no training is provided



Mobility Concepts Training

- Some clients hop in and take off!
- Other clients require extensive and long-term training
- Many are in-between

Continuum

Mobility Concepts Training

- Tips for training children:
 - Minimal instructions
 - Simple and consistent vocabulary
 - Allow for processing time
 - Trial and error
 - Large, quiet environments



Mobility Concepts Training

- What about driving in context?
- For school age children, driving in a crowded hallway is equivalent to a teen starting driver's training on the freeway!
- Start slow and move up in difficulty through other environments
 - Empty gym
 - Gym with a few kiddos
 - Empty hallway
 - Hallway with a few kiddos
 - Hallway with many students



Before You Start...

- Make sure the client is positioned well
- Make sure the client is using an appropriate driving method

Mobility Concepts Training

- Stop and Go
 - Directional
 - Problem Solving
 - Judgment
-
- This is most often required with children, but the following strategies can be applied to all ages

Stop and Go Concepts

- Pull Out Activities
 - In the power wheelchair, have the child Go and Stop on verbal command
 - Explain why stopping quickly is important for safety
 - Play games such as Red Light, Green Light
 - Goal: stopping on command quickly



Stop and Go Concepts

- As a part of the school day
 - While driving from the classroom to the cafeteria (or another destination), walk next to the student
 - Encourage the student to stop and go when appropriate



Tip Time

- Stay calm and the child will stay calm
- If the situation is too stressful, loud, or not safe... downshift
 - Quiet, large spaces
 - Slowly advance to other environments



Directional Concepts

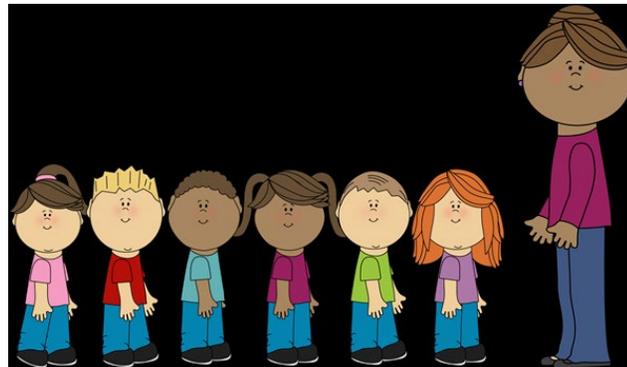
- Pull out Activities

- In the power wheelchair, ask the child to move in an indicated direction. This gives the child an opportunity to discriminate between directional switches or joystick movement
- The client does not need to understand “Left” and “Right”
- Play Follow the Leader
- Bring in peers!



Directional Concepts

- As a part of the school day
 - Have the student follow the rest of the class from the classroom to the cafeteria or library

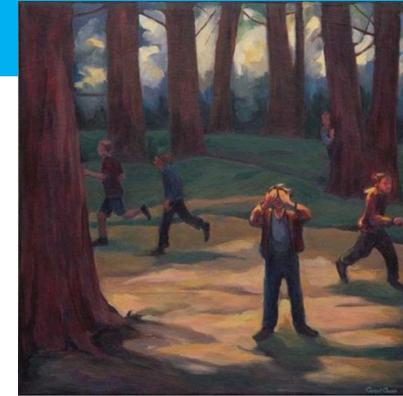


Tip Time

- What if the student hits the wall?
- The power wheelchair can be programmed to stop when this occurs, rather than causing damage or continuing movement
- Calmly redirect the student to choose another direction



Problem Solving



- Pull out Activities
 - In the power wheelchair, have the child move to a location in the room that requires more than one directional command to reach
 - Developing Accuracy
 - Play Follow the Leader, Hide and Seek
 - Pull in peers!
 - As the child progresses, move on to more realistic situations, such as going down hallways, through doorways, etc.

Game Time!

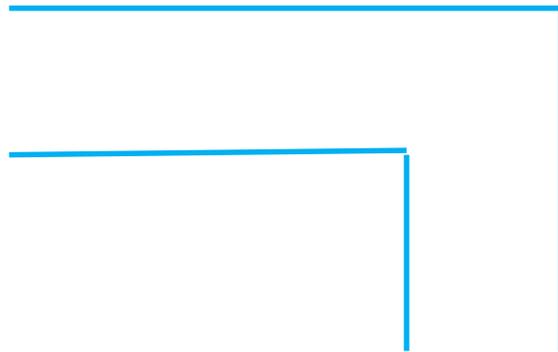
Problem Solving

- Straight Course
 - Start with driving through a straight course
 - As the driver improves, make the course longer and more narrow



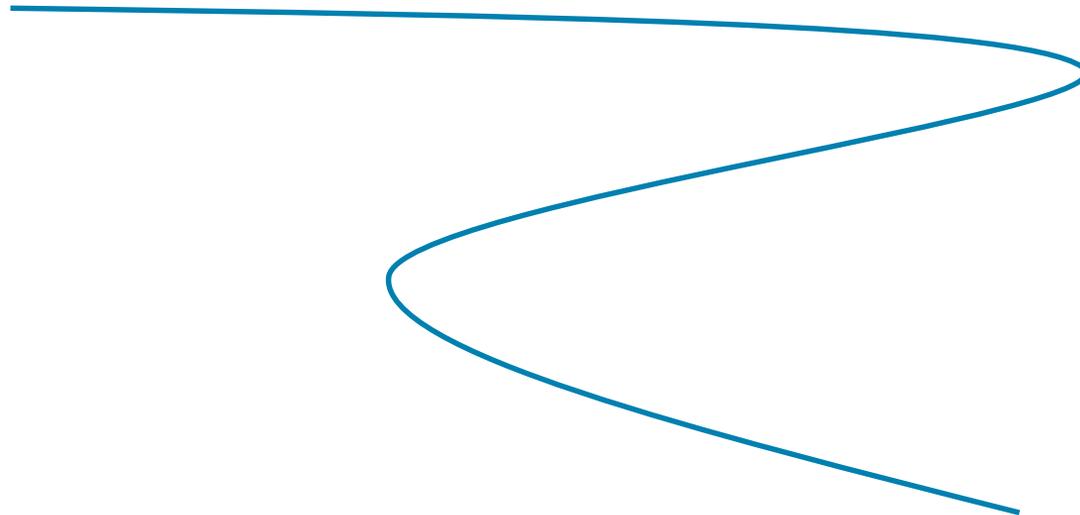
Problem Solving

- Corners Course
- Mark out a course that has a 90 degree turn
- Start wide and then narrow
- Have the driver go through the course from both sides to work on Left and Right turns



Problem Solving

- Curves Course
- Mark out a course with curves in either direction of various degrees
- Narrow the course as the driver improves
- Curves are more difficult to negotiate than a corner!



Problem Solving

- As a part of the school day – **driving in context**
 - Have the student deliver attendance to the office or other papers
 - They will have to problem solve getting around obstacles, etc.
 - When the class moves to a different area, have the student try the following:
 - Go through the classroom door without assistance
 - Go down the hallway
 - Go in and out of the bathroom



Tip Time

- Remember:
 - The average teen has “normal” cognitive, sensory and motor skills
 - The average teen has had many years of “modeling” in driving a motor vehicle
 - The average teen still has to put in 40-50 hours of supervised driving before even taking a test
 - It takes time

Judgment

- Pull Out Activities
 - Place obstacles in the child's way to see if they will stop and/or go around these.
 - Move on to real life situations to train appropriate judgment, i.e. crossing the street



Judgment

- As a part of the school day
 - Provide rewards for safe driving



Tip Time

- Many of the kids we work with do not have opportunities to develop judgment

Outside

- As the client is ready, you can also train driving outside
- Sidewalks
- Up and down ramps and curb cuts
- Managing door openers
- Managing non-accessible situations
 - No power door opener
 - No curb cuts
 - Sprinklers are on...



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Questions?

Newer Option!

- Virtual Reality
 - Options are now available that allow someone in a static base to experience movement. A PWC driving method is used, along with VR goggles and a variety of environments
 - Stealth Products
 - <https://www.youtube.com/watch?v=lpNclPPTpM8>



Student safety

- Training in context increases risks of bumping walls and other students
- Solution:
 - Don't start in context training around a lot of other students right away
 - Like learning to drive a car
 - Reduce power and/or torque so PWC has less force



Train the Trainer

- The clinician may not be available for consistent training
- Funding may not support the amount of visits necessary for adequate mobility training sessions
 - Training is typically more effective using shorter and more frequent sessions
- The clinician may train others to perform Mobility Training and supervise the process



Behavioral Issues

- If a student is acting up, try and address this the same way you would a typical student whenever possible

Behavioral Issues

- Gabriel
- CP, age 5
- Behavioral issues:
 - Driving too fast
 - Bumping walls
- Solutions:



Behavioral Issues

- Shannon
- Down's syndrome, age 15
- Behavioral issues:
 - Crashing
 - Thinks it is funny
- Solutions:



Behavioral Issues

- Kristi
- CP, age 14
- Behavioral issue:
 - crashing
 - Defiant, not listening
- Solutions:



Behavioral Issues

- Brian
- TBI, age 19
- Behavioral Issues:
 - Crashing
 - Aggressive
 - Poor judgment
- Solutions:



Questions?

Take Home Message:

- Pre-Mobility Training develops readiness
- Mobility Training optimizes driving
- Training ultimately reduces the chances of equipment abandonment

Your Turn!

- Think of a child you are working with who already has a power wheelchair.
- What Mobility Training strategies can you use to optimize driving?

Thanks!

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