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Technical issues with the Recording?

- Clear browser cache using these instructions
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Still having issues?

- Call 866-782-9924 (M-F, 8 AM-8 PM ET)
- Email customerservice@OccupationalTherapy.com
Please review these learning outcomes:

After this course, participants will be able to:

- List 3 mobility concepts required to use a power wheelchair functionally.
- List 2 strategies to develop directional concepts.
- List 2 strategies to develop problem solving concepts.
WHAT WE WILL BE COVERING:

Determining Readiness
Developing Motor Skills
Developing Mobility Concepts
Goal: Preparing for Assessment

IS MOBILITY THAT BIG A DEAL?

Research clearly indicates that early independent mobility increases:
- Cognitive skills
- Psychosocial skills
- Vision and visual perceptual skills
HOW DO I BACK THAT UP?

RESNA Position Paper on Pediatric Mobility
www.atilange.com under Resources
Compilation of expert opinion and very comprehensive listing of research
Being updated now

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BARRIERS TO MOVING FORWARD

Someone on the team wants to hold off on exploring power mobility…

- Concerns about motor development
- Concerns that the child can use other mobility if we just wait a bit longer
- Concerns about funding
BARRIER #1

“If this child gets a power wheelchair, they will never walk…or use their other mobility equipment…or get lazy”

- Kids who use a power wheelchair are MORE likely to attempt any other form of mobility
- The child will not become lazy

BARRIER #2

“Wait, I’m not done with therapy yet”

- A power wheelchair is not a failure of therapy, just another tool to provide independent mobility
BARRIER #3

“no one will fund a power wheelchair for this child...they are too young...the school has no money”

- Funding is not as hard as you think, with a comprehensive evaluation and proper documentation
- Work with the supplier

POLL #1

Do you encounter these barriers when working with others?
- Motor concerns
- Therapeutic concerns
- Funding concerns
COMMON SCHOOL SCENARIO:

Ok, I get it. I think this student could use a power wheelchair, but I’m not sure how to determine if he is ready for the “big evaluation”…

DETERMINING READINESS

Motor Readiness
- Access Method

Cognitive Readiness

Are you ready?
DETERMINING MOTOR READINESS

Can the student access a joystick?
- Directional control
- Timed and consistent release
- Joystick use requires grading of the force and distance of movement

DETERMINING MOTOR READINESS

Can the student access at least 3 switches volitionally?
- Any switch locations
- Any switch types
- Sustained contact
- Timed and consistent release
DETERMINING COGNITIVE READINESS

Varied opinions out there
Nothing validated yet
Criteria used by The Children’s Hospital in Denver for over 5 years with approximately 200 children
- Goal: to objectify evaluations and provide a starting point for training

POWER MOBILITY CRITERIA

See Criteria handout
- www.atilange.com, under Resources
Cause and effect
Stop and go concepts
Directional concepts
Judgment
Problem solving
Following directions
and … Motivation
CAUSE AND EFFECT CONCEPTS

The client realizes that activating the access method is causing movement of the power wheelchair.
Measure: verbal or non-verbal expression.

STOP AND GO CONCEPTS

The client realizes that activating the access method is moving the power wheelchair and that releasing the access method stops that movement.
Measure: verbal, following directions to Stop and Go or stopping for obstacles. Does not require accuracy.
DIRECTIONAL CONCEPTS

The client realizes that the power wheelchair will move in different directions, depending on how the access method is used.
Measure: the client responds verbally or non-verbally to different movement caused by different input or attempts to move to a location using different directional commands.

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JUDGMENT

The client demonstrates developmentally appropriate judgment
Measures:
• the client recognizes obstacles and attempts to avoid
• the client is not aggressive
• The client demonstrates caution

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PROBLEM SOLVING

The client demonstrates developmentally appropriate problem solving during driving
Measure: the client will maneuver the power wheelchair to a designated destination without cues

FOLLOWING DIRECTIONS

The client demonstrates the ability to follow directions while driving
Measure: the client will follow directions such as Stop, Go and Come Here
MOTIVATION

Motivation is important, too

POLL #2

Do you use any form of screening tool in your setting?

- Yes
- No
- No, but I think we should
DEVELOPING MOTOR SKILLS

Joystick control

Switch control
- Sustained contact
- Timed release

Joystick Control
- Joystick Mouse
- Computer Software
  - i.e. painting program
- This doesn’t translate over very well to learning how to move a power wheelchair through space, but does develop motor skills
DEVELOPING MOTOR SKILLS

Sustained switch contact is required to continue movement of the power wheelchair.

Latch on a power wheelchair can be used in Forward and sometimes Reverse.

- Safety issues with children

SUSTAINED SWITCH CONTACT

Switch Toys and other Battery Operated Devices

- Direct connection with battery interrupter or pre-adapted device
SUSTAINED SWITCH CONTACT

Switch Toys and other Battery Operated Devices

- Working with a toy that moves around a lot? Try out the AbleNet Wireless Jellybeamer

![Mini Beamer](image1)

SUSTAINED SWITCH CONTACT

Switch Toys and other Battery Operated Devices

- AbleNet Series adaptor can be used to develop sustained switch contact with more than one hand or other switch site
  - Forward and Left or Right can be combined for a diagonal movement

![Toy with switch](image2)
SUSTAINED SWITCH CONTACT

Direct Mode on AbleNet PowerLink 4
- Provides practice sustaining switch contact with electrical devices
- Two switch mode allows development of sustained two hand skills

DEVELOPING MOTOR SKILLS

Switch Release for accurate stopping
- Start developing activities or games to encourage the child to release the switch at a specific time
- i.e. connect a train set to the PowerLink. Encourage the child to stop the train at a certain location.
DEVELOPING COGNITIVE SKILLS

Cause and Effect
Stop and Go
Directional Concepts
Problem Solving
= Pre-mobility training

TWO METHODS

1. Use Basic EADLs to develop specific cognitive skills
2. Use dependent mobility base to “simulate” movement of a power wheelchair
3. Use both to increase learning!
DEVELOPING COGNITIVE CONCEPTS

Cause and Effect: Method #1
- Switch Toys
- PowerLink 4 in Direct Mode

Differentiated Cause and Effect: Method #1
- Switch Toys with AbleNet Dual Switch Latch and Timer (SLAT)
- PowerLink 4 with two devices in Direct Mode or Timed
DEVELOPING COGNITIVE CONCEPTS

Stop and Go: Method #1
- Switch Toys, Direct connection
- PowerLink in Direct Mode
- SLAT in Latch Mode
- PowerLink in Latch Mode

Stop and Go: Method #2
If the child is in an adaptive stroller or manual wheelchair…
- Place a switch where the client can access it
- When the child presses the switch, push the mobility base
- When the child releases the switch, stop pushing
DEVELOPING COGNITIVE CONCEPTS

Stop and Go: Method #2
- Verbalize Stop and Go when pushing the mobility base, driving the car, etc.
- Play Red Light, Green Light

Directional Concepts: Method #1
- 3 switches, 3 devices
  - Reinforces that each switch has a different function

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Directional Concepts: Method #2

Place 3 switches where the child can access them
- Tell the child how this works
- Move the chair in the corresponding direction when the child activates a switch

Directional Concepts: Method #2

- Verbalize direction of movement while pushing the mobility base or driving the car
- Play Follow the Leader
DEVELOPING COGNITIVE CONCEPTS

Problem Solving: Method #1
Dual SLAT
- The first switch activates one device. The second switch activates another device.
- Client has to determine which switch to hit and when

DEVELOPING COGNITIVE CONCEPTS

Problem Solving: Method #2
Place 3 switches where the child can activate them
- Tell them how this works
- When the child activates a switch, move the mobility base in the corresponding direction
- Encourage them to “drive” to a specific location
DEVELOPING COGNITIVE CONCEPTS

Problem Solving: Method #2
- Allow the child time to explore
- Play Hide and Seek

POLL #3
Do you use strategies to develop motor skills and cognitive concepts before a power wheelchair assessment?
- Yes
- No
- No, but I want to!
CASE STUDY

Alexi
20 years old
TBI at age 6
Initially seen at age 10 for switch assessment
He demonstrated a slow but steady learning curve

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CASE STUDY

Step 1: Find a Switch Location and Type
Alexi demonstrated potential at left lateral knee with Jellybean

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CASE STUDY

Step 2: train motor skills
Alexi could access a switch in this location, but with difficulty
We used single switch software, SLAT and PowerLink with a variety of devices to encourage numerous switch hits throughout his day

CASE STUDY

Step 3: train scanning concepts
Our initial goal was communication, mobility came later
- SLAT in timed mode
- PowerLink in timed mode
- Single switch software
CASE STUDY

Step 4: train sustained switch activation

Alexi received a SGD and used this for about 6 months to firm up his communication skills

We knew we would eventually have to share a switch site, meaning he would have to use it in 2 different ways

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CASE STUDY

Step 4: train sustained switch activation

- PowerLink in Direct Mode
- Switch toys

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CASE STUDY

Step 5: develop 2 more switch sites and train sustained activation
- PowerLink in Direct Mode
- Switch toys

CASE STUDY

Step 6: develop Cognitive concepts
- Alexi demonstrated understanding of Cause and Effect and Stop and Go already
- Directional Concepts:
  - We placed 3 switches in locations Alexi could access and moved the chair when he activated switches
CASE STUDY

Step 7: formal power wheelchair evaluation

- Alexi was ready to go and did very well
- After the PWC arrived, he received additional mobility training to optimize skills
CASE STUDY

Timeframe: 2 years from initial appt. to PWC evaluation
Today: Alexi drives independently and controls his power tilt and SGD through his driving switches
Alexi’s case took time, but the outcome was worth it!

TAKE HOME MESSAGE:
Some kids hop in a power wheelchair and start driving immediately
Other children need time and training to develop the skills required prior to a power wheelchair assessment
Many strategies can be used to determine and develop readiness
RESOURCES

Access to Independence Website
- www.atilange.com
- Indoor Power Mobility Criteria
- Pre-mobility Training Guidelines
- Mobility Training Guidelines

QUESTIONS?

Type them into the chat box
THANKS!

CONTACT INFORMATION

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