Considerations for Seating, Positioning & Mobility for Children with Complex Communication, Physical Needs and CVI

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Mobility Equipment Features and Intervention Strategies for Children with CVI

Support Walker Features to Consider for Children with CVI

- Hands Free with minimal hardware in front of child to move close to objects and people.
- Small turning radius for indoor mobility (Either a large mid-wheel (KidWalk, ProneWalk) or 4 swivel casters (FCI walker, Mustang, Pacer with swivels.)
- Sensory components like jumping, spinning (KidWalk,) because movement like bouncing might assist some children in attending and using their vision.)
- If a walker is to be used over uneven terrain, choose wheels larger than 6" diameter, which will move over uneven surfaces more easily than smaller casters (student may not see uneven surfaces.) A design such as the KidWalk with anti-tips rather than front casters, and a large mid-wheel, maneuvers indoor/outdoor surfaces more efficiently.
- Let the child choose the color or the walker (will probably choose preferred colors).
- Use RAM mounts for attaching switches and low tech AAC devices to walkers.

Headrest Options for using a walker or wheelchair

- MetalCraft-Industries.com. Angle Bar, RATS & H.A.W.C headrests 
- Whitmyer Heads Up Wheelchair Headrest by Sunrisemedical.com. 

TIP: Get the Short cradle height with Occipital Pad. Measure length of swing away arm you need.

- Adjust-A-Plush headrest by Sunrisemedical.com 
- Get an offset bracket. 

Power Wheelchair Features and Factors to Consider for Children with CVI

- Choose a pediatric power chair with minimal hardware behind the child, which may be more easily maneuvered and turned than a power chair with extended hardware behind the child. Rear wheel drive designs tend to have less hardware behind the user, but more difficult to find for young children.
- Many children with CVI prefer learning to drive indoors in a familiar environment which is not crowded vs outdoors such as a playground where glare and fast movement of other children at recess time may be more challenging for learning to drive.
- It may take using the power chair every day and children may need up to 2 years to learn.
- If special controls other than a joystick are necessary, such as a head array from Adaptive Switch Labs, (turning the head towards the proximity switch will turn the chair in that direction and pressing backwards will make it move forward,) try placement of the turn switches down near the chin so the user can look side to side, but in order to turn will need to tuck the chin and turn the head slightly to turn the wheelchair. This allows the child to look around and scan the environment before moving.
- Consider the newest product, Luci, (www.luci.com) as an add on, which will stop the chair automatically before a drop off or object is too close.
- If a joystick is used, consider adding a preferred color like red or yellow to the joystick.
- Consider a pediatric powered mobility device like the Permobil Explorer Mini for children from 1-4 years of age, who cannot move in a walker. (Note: at this time, it is driven with a midline large joystick.)

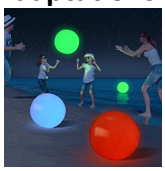
CVI considerations and Mobility Intervention with a Support Walker

- Know the child's visual field preferences, likes, dislikes.
- Know the child's preferred color/s.
- Know how the child communicates.
- Don't expect the child to take steps during initial use in a walker. Expect the child to first explore body movements and the feel of the walker, by standing in it rather than walking in it. (Even novice infant walkers only take a few steps at a time and stop (Adolph 2019.)
- Familiar environments, are preferred when introducing new interventions like mobility, because unfamiliar places can be complex and contribute to variable attention/inattention.
- Try placing a large brightly colored ball in front of the feet for a kicking game, play music, gently move the child in the walker back and forth.
- If a child walks up close to an object or person, describe the encounter and salient features of the objects.
- Many children with CVI will prefer wearing sunglasses or transition glasses outdoors.
- Encourage activities that require mobility (kicking ball, chasing, exploring, pushing toys) rather than providing stationary activities like books, hand held toys.
- **Phase I**: Goal is to get the child to look. Child may need time to just stand in the walker close to an activity with a preferred object. Use quiet surroundings & single colored item, reduce complexity of background. Don't expect the child to start moving or "waking" right away. Start in an uncluttered, familiar environment, place familiar preferred objects closer to the child to

be seen, may need moving, shiny, lighted objects to attract attention. Moving, reaching and looking is a challenge. Some children may need movement to engage vision. Complexity and looking at faces are typically not preferred. Best vision may be peripheral (side) rather than central and up to 2'. Give time for the child to respond and learn to enjoy moving for the sake of movement. May need to darken the room with a well-lit window open that might attract attention for moving towards the light. Track tolerance to the activity as some children may do better with short interventions. Personalize intervention with the child's likes/dislike and strengths. Ideas: Bright balloon placed a short distance from the child's walker against a black background, for children who like body movements, consider a dynamic walker that has the ability for the child to experience movement like jumping, spinning, wiggling (KidWalk, Buddy Roamer). Explain when child moves that he is moving towards the _____. If he bumps into an object "you found the _____."

- **Phase II**: Integrating vision with function. Encourage reaching, touching. The child can see 4'-6'away, can use preferred and multi colored objects in preferred field. There may be more interest in daily environmental objects: Bright colored push toys like a stroller, cart, pushing bright balls on black table top, opening/closing drawers and taking/putting objects out/in, watching peers, outdoor walks with near objects. More background noise can be tolerated and music, if the child enjoys it, as will outdoor play time in a mobility device. Be certain to describe features and experiences the child encounters with salient feature descriptions and comparisons. When child looks and fixates on object, describe features. Group gatherings (assemblies) even while in mobility device might be overwhelming visually and auditorily.
- **Phase III**: Resolving characteristics. Distant viewing is about 10-20', so may need bright or lit objects, if further away. Can look closely at non-moving objects. Looks at themselves in a mirror, can imitate actions (music group), can reach for objects and interacts while looking (walks to adapted sand box with toys in it), water play table, dances to music or musical toys, can find an automatic door button to open it to "go outside." Can take favorite 3 D toys to 2D (communication book.) Help child understand salient visual features in a more complex setting.

Toy/Adaptations for children with CVI


Large Floating in the Dark Beach Ball Toy with Color Changing Lights Amazon 16.99


LED Hula Hoop Rechargeable and Collapsible Amazon 47.99

  WolVol Electric Fire Truck Toy with 3D lights, bump and go.

 WisToyz Kids Toys Hover Soccer Ball Set Rechargeable Air Soccer, Soccer Ball with LED light and Foam Bumper 19.99

 Fun Central LED Light Up Round Tambourine Amazon, 9.99

 Alvantor Kids Tents Amazon 26.99

Kid Trax Easy Pop-Up Kids Magical Play Tent, Large Front and rear Openings 44.99 Amazon

 Window Clings Gel Sticker for window, refrigerators 12.99 Amazon

 APH.ORG Trifold Board covered in hook/loop

 APH.ORG All-in-One Board: hook/loop, whiteboard, magnetic

 My First Crayola Touch Light

 Skip Hop Vibrant Village Light up Dog Piano

 TickiT 9200 Ultra Bright LED Light Panel

 Lamaze Rainbow Glow Rattle

 NogginStik

Enabling Devices: Bright Red Switch, Light up Gel Switch, Glitter Gumball Switch,

4 choice sequential scanner for the VI.  Enabling Devices

Glitter Gumball Switch  Enabling Devices 

Light up Gel Switch

References/Resources:

1. Adolph, K., Hoch, J., O'Grady, S., It's the Journey, Not the Destination: Locomotor Exploration in Infants., Dev Sci. 2019 Mar: 22(2): e12740.
2. CVIteacher.wordpress.com