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

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Christine Wright Ott, OTR/L, MPA cwrightott@bridgeschool.org
Joy McCollum-Franco jmccollu@bridgeschool.org

Observations of Bridge School Students with CVI Using Support Walkers.

Approximately 60% of the students at the Bridge School have Cortical Visual Impairment (CVI.) There are 10 Visual Behavioral Characteristics of CVI as described by Roman-Lantzy (2007.)

- Need for Movement
- Visual field preferences
- Difficulty with complexity (object, array, sensory faces)
- Difficulty with distance viewing
- Difficulty with visual novelty
- Absence of visually guided reach
- Color Preference
- Need for Light
- Visual latency
- Atypical visual reflex responses

Since 2012, we have observed behaviors of Bridge School students with CVI using support walkers. Observations of students using support walker, some based on the visual behavioral characteristics of CVI, include the following:

1. **Difficulty with Distant Vision**. Children with CVI frequently have difficulty with distant vision, yet they are dependent on others to bring objects to them or for depending on others to move them to a destination. When students are seated in their dependent wheelchairs/strollers they have no ability to move close to see objects or people on their own.
   Support walker Mobility Observations: When students are in their walkers, they are free to decide when and where to move which encourages them to reach, touch and explore. We have observed preschool children with CVI choosing to move close to their peers, even reaching out to touch their faces, which may be helping them understand the complexity of faces. A preschool student with CVI demonstrated his preferences by moving towards his favorite place in the classroom, a mirror, where he would spend time looking at his face close up while making movements with his mouth.

2. **Difficulty with Visual Novelty**: Students with a physical disability that limits self-directed mobility experiences cannot discover new and novel objects. The world may continue to be confusing and overwhelming.
   Support Walker Mobility Observations: Self-directed mobility allows children the opportunity to discover something new on their own as the teacher describes what they have found, thereby increasing their descriptive understanding of the world. Hallowell

(2011) reminds us that children are more likely to remember an action or object when they discover it through experience than when told about it.

3. **Need for Movement**: Movement for children with CVI, whether it is movement from the objects or movement from themselves can assist in attaining and sustaining visual attention. When a child cannot wiggle, jump or move in their seated position, which typically positions them with chest straps, headrests and pelvic belts, they have few options to move their bodies to help them see.
   Support Walker Mobility Observations: Students frequently jump, wiggle and spin in their support walker, if the walker is dynamic. This movement may help them attain and sustain visual attention. They have more freedom to move their bodies without body supports and straps. A preschool student with CVI would wiggle in his KidWalk right before his turn to look at a picture his teacher was sharing with each student.

4. **Absence of Visually Guided Reach**: Students with CVI often have difficulty with visual reach. If visually guided reach is absent, they cannot look and reach simultaneously. When they are seated in a wheelchair, there is no motivation to use their arms and hands to reach, as reaching is limited to their arm's length, and there is typically no stimulus which encourages reaching.
   Support Walker Mobility Observations: Students, even those with difficulty using their hands or those with absence of visually guided reach, try to reach and touch objects they have discovered, such as door knobs, handles, items on shelves and toys like reaching to push a baby stroller or grocery cart during dramatic play. Surprisingly, many of them reach above shoulder height, which is never observed when sitting in their wheelchairs or strollers.

5. **Visual Field Preferences:** Children with CVI usually have a preferred field of vision: lateral or to either side, upwards, central or lower visual fields. Sitting in a wheelchair may reduce their ability to use all visual fields, particularly the lower visual field.
   Support Walker Mobility Observations: In a support walker, children with CVI can do activities not possible in a seated position. Standing in a support walker provides access to activities such as kicking a bright colored ball, running, dancing, painting with their feet on a floor canvas, or even playing hide and seek. These activities may encourage use of different visual fields. Children who are kicking a ball look at their legs moving and the ball rolling, which encourages use of the lower visual field.

6. **Orienting to Sounds in the Classroom**: Students in wheelchairs, who cannot maneuver themselves, can only look at what is in front of them. Any activity to the side or behind them can only be heard. They cannot use vision and hearing simultaneously for half of the activities that occur in a room, because they are unable to orient themselves towards the activity.
   Support Walker Mobility Observations: When they are in their walkers, they are free to turn around and orient themselves to an activity, thereby looking and listening simultaneously to the activity.

These observations suggests that students with CVI who have significant speech and physical disabilities can benefit from self-directed mobility experiences in the school environment and may be acquiring skills they would have otherwise not demonstrated without the opportunities to experience mobility through the use of hands-free support walkers. They also encounter more problem-solving opportunities, use their upper extremities, often reaching above shoulder height, use gestures, signs and AAC tools and technologies, express preferences, choose to move towards or even away from an activity or person, grow in their self-determination skills and achieve meaningful peer interactions.

References

Roman-Lantzy, C., Cortical Visual Impairment: An Approach to Assessment and Intervention. New York: AFB Press, 2007.