

Working with School-Ages Children With Cortical Visual Impairments And Multiple Disabilities

(compiled by Julianna in 2003 and revised in 2015 and 2018)

Each child may use their vision differently therefore it is not possible to say that all strategies will work with all children with Cortical Visual Impairments (CVI). Below is a list of suggestions compiled from readings, workshops and experience in working with children with visual impairments who also have other disabilities. Some of these strategies will also be effective for children with visual impairments other than CVI.

Points to Ponder:

- A) Cortical Visual Impairment (Cortical Blindness): The condition is caused by brain abnormalities where damage to the visual cortex or pathways make deciphering visual information difficult. Some children are totally blind, while others have some vision and even improve vision over time. Vision can also fluctuate depending on time of day, familiarity of surroundings, lighting, fatigue, medication, stress and movement. Total cortical visual loss is rare and in some of these cases some residual sight exists.
- B) Character of CVI may include the following, but note that CVI can occur in conjunction with other visual impairments:
 - Normal motility of the eyes
 - Normal pupillary response to light
 - Normal retina
 - Lack of visual fixation
 - Lack of response to stationary objects
 - Bring objects close to face (to block out confusing background information)
 - Lack of blink response to threat
 - Poor eye contact and visual communication skills
 - Appear to be disinterested in surroundings
 - Eccentric viewing, abnormal head and eye postures, or compensatory head and eye movements.
- C) 25-50% of children with CVI recover some useful vision, although they still have significant perceptual disorders.
- D) Verbal and tactile cueing can help children organize the visual messages. Tell them what they are seeing. Touch can also help make sense out of visual images.
- E) You may notice consistent body rocking, head shaking, or the need to be in motion (a self-stimulation behaviour). Children with CVI are attracted to movement and for some having

movement around them calms them. I have worked with preschool children whose parents were very surprised to see their child sit and concentrate on motor activities when put in a small room with a moving light projection mobile. In essence the room was moving so the child didn't have to.

- F) Movement is something people are visually attracted to. If you want a child to look at an object moving it may help. Be aware that reflective surfaces are also considered to be movement objects as the light bounces off of them.
- G) Many children engage in light gazing (another stimulating behaviour) therefore positioning in class is very important. Be aware of what you want the child to pay attention to; it may be more favorable if the light were behind the child so the attention is on the desk; however, a lightbox or a task light for purposeful activities in front of them may also be useful for some students.
- H) Position the child so that he can best benefit from vision. This may mean the child's head needs to be supported or the child needs to be lying on their side or back.
- I) *Repetition leads to anticipation leads to participation.* In essence if the activities are routine and the same wording is used, children will be able to predict events and eventually participate in the next step.
- J) Talk about what you are doing and seeing. There should be no surprises. I have heard people in the field of visual impairments talk about the 'Fairy Godmother Syndrome' in which food magically appears in the child's mouth or in their hand. Tell the child what you are about to do or, depending on the severity of the visual impairment, they might not see it coming.
- K) Many young children with visual impairments are also tactile sensitive. It takes a lot of trust to put your hand out to touch something when you do not know what is out there: this is especially true if some textures irritate you. DO NOT hold the child's hand and force them to touch something instead allow them to first hold your wrist and you put your hand on the desired object while encouraging them to trail down your hand and touch it.
- L) Avoid overloading the child with questions. Depending on intellectual ability it may take a while to process information.
- M) Visual activities occurring for short periods of time can produce good results.
- N) Teaching Visual Efficiency is an on-going process and for many children vision is a learned experience. Periodic Functional Visual Assessments and completion of the CVI scale are therefore necessary.
- O) Keep things simple. Children with CVI have trouble interpreting visual information and as such have trouble with foreground and background. When teaching children about concepts, avoid

cluttered areas and simplify visual information. If the child has a wheelchair tray, it should not be clear; instead cover it with black dycem.

P) Colours (especially red and yellow) or black and white simple patterns are usually favorable.

2. Activities and Strategies

a) Children with CVI are attracted to movement. To gain attention try moving object or light. You may even try working with flashlights or penlights and move the light to gain attention of the child and then direct the light onto desired object.

b) Try working in a dimly lit room with a projection light mobile. It may be a calming influence and the child may concentrate on other tasks without having to shake their head or rock their body. (Do not try this with children who have seizures).

c) Try using a light box or task light to direct attention to the activity occurring on top. Note that some educators have trouble with using a lightbox because it is not a tool that one finds readily and not considered a `real` light source. My thoughts are that I will try anything that may work.

- use transparent bowls and beads for color sorting

- create activity bags which promote touch and pushing around of marbles for fine motor practice.

d) Some children love objects that reflect light (shiny beads or sparkles) or make repetitive sounds when being shaken (pomp oms or Slinkys). Note that children with CVI may bring these close to their face.

e) When choices are to be made between two objects hold both objects about eye level (arm's length from the child). While saying the name of the object, move it a little. Wait for eye contact to be made. Encourage the child to reach for and grasp desired object. Note: some children with CVI appear to have difficulty seeing objects or pictures placed close together but may identify objects spaced further apart.

f) Blow bubbles and encourage children to track and reach for them.

g) Play in water. Pour water from higher levels to encourage horizontal tracking. The cup from which the water is being poured may even include small toys.

h) Roll or toss a colourful ball to the child. Some balls may include sounds or lights and encourage looking.

i) When encouraging self-feeding make sure there is sufficient contrast between finger foods and eating container or surface. For example carrots can be placed in a blue bowl or if the tray is black the drinking cup may be yellow.

j) Place well-spaced objects on the child's tray or table top (3-4) and keep note on which objects are being selected. Say the name and/or attribute of the object as it is being grasped or looked at. Eventually, have the child pick out the object as you name it.

k) Use familiar, favored bright objects to entice the child to move to a new space. Use real objects to teach concepts whenever possible. Note that a child will see familiar objects better.

l) String beads on a string by helping child reach and move beads (can be large).

m) Use toys that make noise and/or emit light. A multisensory approach will be key.

n) Use toys that have a cause and effect aspect (if you make a noise or hit switch, it is activated). This will eventually lead to greater environmental control.

- Lilliworks has a little room in which when a child touches something within the space it makes a sound (<http://www.lilliworks.com/al-items/major-items/>).

- Use a Powerlink or battery adapter to switch items which are controlled through electricity.

o) Play body games with the child. It is important that they know their body parts in order to be more independent in life skills and orientation and mobility skills.

p) Promote social activities that are meaningful to the child and their classmates. Have children read to him/her during silent reading. Use a spinner during math and choosing activities. Use switches to operate equipment that can have the child with CVI do something for their peers.

q) Promote fine motor activities by having children string large beads, push marbles in activities bags, having children pick up finger foods such as Cheerios or raisins, or having them pick up small objects and put them in a can.

u) Set up landmark or object clues around the school to ground children in their environment. The cues should correspond to the activity that will occur in this place. For example, a washcloth could be placed outside the bathroom and when the child is given a washcloth in class, he will know it is time to move to the washroom. He will be able to match the two objects.

v) A calendar box (or variation of such) will help children in sequencing events/activities of the day. There should never be any surprises.

w) Use a tactile strip along the ground can also serve to ground the child in his/her environment. This may help the child to trail the wall in order to get to various places in the school independently. It is important to teach children to cup their hand while trailing so the fingers do not get jammed.

x) Have a beginning, middle and end to all activities. A great example is using the TEACCH method of instruction and planning.

y) Music and rhythms are often motivational and calming for kids. For kids with tactile sensitivity using a TACPAC (<http://www.tacpac.co.uk/>) which pairs music with touch has helped reduce the sensitivity.

z) Pair vision with another sense (tactile or auditory).

Toys and Materials

- a) Find toys or objects with repetitive patterns, reflective surfaces, faces and/or have red or yellow in them.
- b) Use black and/or white plain backgrounds, paper and felt pens.
- c) Try using tools that illuminate: flashlight, penlight or light projection mobile.
- d) Try toys that make sound or has lights when activated.
- e) Try toys and activities that encourage tracking.
- f) Switches and Powerlink can open a lot of social and life skill possibilities.
- g) Apps which may help cause and effect relationships may include:
 - a. Little Bear Sees
 - b. Help Kidz Learn
 - c. Apps suggested by Wonderbaby or Paths to Technology
 - d. Cause and Effect Sensory Sound Box
 - e. Any of the Sights and Sound apps

Please see list of Websites on the CARSCD link for more great information on CVI.