Building Strategies Around CVI Phases

Ellen Cadigan Mazel, M.Ed., CTVI
CVI Advisor

Concord Area Special Education Collaborative: CASE
Why Do I Need to Know This?

An audience poll
Tell us about your current interaction with a child who has CVI. (check all answers that apply to you)

<table>
<thead>
<tr>
<th>Option</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have daily interaction in a classroom setting.</td>
<td>6.25%</td>
<td>1</td>
</tr>
<tr>
<td>I have daily interaction in a home or center setting.</td>
<td>37.5%</td>
<td>6</td>
</tr>
<tr>
<td>I have daily interaction in a medical, therapy, or clinical setting.</td>
<td>12.5%</td>
<td>2</td>
</tr>
<tr>
<td>I am a parent/guardian of a child with CVI.</td>
<td>12.5%</td>
<td>2</td>
</tr>
<tr>
<td>I have frequent (but not daily) interaction.</td>
<td>37.5%</td>
<td>6</td>
</tr>
<tr>
<td>I have infrequent interaction.</td>
<td>0%</td>
<td>0</td>
</tr>
<tr>
<td>I have never worked with a child who has CVI.</td>
<td>12.5%</td>
<td>2</td>
</tr>
<tr>
<td>I used to have frequent interaction, but do not currently work with a child who has CVI.</td>
<td>6.25%</td>
<td>1</td>
</tr>
<tr>
<td>I am a researcher in the area of CVI.</td>
<td>6.25%</td>
<td>1</td>
</tr>
</tbody>
</table>
Why Do I Need to Know This?

- CVI is the #1 cause of visual impairment in children.

- It requires new understanding of brain function.

- It requires new understanding for assessment to build strategies.
CVI Defined

- Damage to the visual cortex.
- Damage to the visual pathways
- Both
Eye and Brain are One
Ocular Impairment with CVI:

- Any child can have both types of visual impairment.
- Gather information
- Assess for both
- Create strategies for both
Ten Characteristics

- Color
- Movement
- Latency
- Visual Field
- Complexity
- Light Gazing
- Distance
- Visual Reflexive Response
- Visual Novelty
- Visual Motor
Color

What colors alert this child’s brain to look?

• The brain is wired to notice color.

• Red and yellow colors seem to alert the brain.
Movement

How does movement affect a child’s ability to look?

- Movement alerts the brain especially in the periphery.

- Movement is a primitive defensive response in all animals.
Movement

- Movement should be off to the side, shaking without noise, in a small area.

- Shiny items make the brain think it sees movement due to the light’s reflection.
Latency

How long does it take a child to visually locate materials?

- Quiets when the object is presented peripherally:
  - Takes time to turn to use central vision.
Visual Field

Does the child seem to see best in some visual fields?

Assess:
- Left
- Right
- Upper
- Lower
Complexity

What level of multisensory presentation is tolerated?

Complexity includes three areas:

- Visual complexity
- Auditory complexity
- Positional complexity
Visual Complexity

- Background “busyness”.

- The child needs to see things at a very close.

- Lower light levels in the environment reduce the complexity of the room.

- Children will sleep to avoid complexity.
Auditory Complexity

- Auditory background distractions which draw the child’s attention away from seeing.

- Children have difficulty fixating on anything in a noisy environment.
Positional Complexity

- The child struggles to see in difficult physical positions.

- In supported positions children can locate, sustain and look with greater speed.
Light Gazing / Non-purposeful Gaze

- How does the child respond to light?
- Light perception is a primitive visual ability.
- Children will seek out light sources and stare.
Light Gazing / Non-purposeful Gaze

- Children will be distracted by light sources.
- Children will have difficulty re-engaging with materials.
- Children perform better when light levels are behind them.
- The child stares without looking.
Distance Viewing

At what distance can a child:

- Look and locate?
- Look and recognize?

- As children improve, they may be overly attentive to distant movement.
Visual Reflexive Responses

How the child react to touch near the eyes or to visual threat?

- Immediately
- Delayed
- Not at all
Visual Novelty

What items does the child already look at because they are familiar?

- Parents report favorite toys.
- Looks at objects always present in their environment.
Visual Motor

What is the child’s quality of looking and reaching?

- Quiets and looks only with peripheral vision.
- Locates and looks: no reaching.
Visual Motor

- Looks but turns away to reach.
- Looks and reaches but looks away as soon as they reach the material.
- Looks and reaches together.
- Continues to look while playing.
CVI

- Child is not looking.
- Child is not looking and reaching.
- Child is not processing visual information.
The child functioning?

- Each characteristic: continuum from 1-10.
- Assess each characteristic: determine the level of support.
- Parent input is essential.
- Assess to chart progress
- Remove supports
Levels of Severity: Phases of CVI

1. Phase I
2. Phase II
3. Phase III
Specific Goals for Each Phase

- **Phase I**: Building Visual Behaviors. Getting the child to look.

- **Phase II**: Integrating Vision with function.

- **Phase III**: Resolving Characteristics
Strategies

- Ocular impairment assessment is inappropriate for a child with cortical visual impairment.

- Strategies are based on assessment of the ten characteristics.
Phase I: Building Visual Behaviors

- Single colored objects (often red, yellow but not always)
- Peripheral presentations
- Increased response time.
Gently moving visual targets
Active Learning: Littlerooms

Materials that stay at near
Active Learning
Attribute trays
Active Learning

Attribute trays
Active Learning

Vests and materials near hands
Phase I: Building Visual Behaviors

- Use shiny items.
- Quiet environments, quiet toys.
- Reduced background complexity
- Single item presentations
Reducing complexity: single item
Reducing Complexity
Phase I: Building Visual Behaviors

- Well positioned child
- Staff should wear plain clothes
- Use three dimensional symbols: no pictures!
- Control and use light
Phase I: Building Visual Behaviors

- No programming for visual reflexes.
- Use familiar objects.
- Build lateral skills
- Targets everywhere at near: Preferential seating
Lateral Skills

The child is looking at one kind of item now try different colors
Lateral skills

- The child looks at one kind of item now try items with similar shapes.
Phase 1: Building Visual Behaviors

- Use large targets.
- Place items in the best visual field.
- Challenge the weaker visual field.
- Register the child with state agencies for children with visual impairments.
Other Phase 1 Strategies

Tell us other strategies you use or have used in Phase 1:

Answers (5)
- painting fingers and toes
- use of yellow and red switches
- Mylar balloons are a great tool for working on near and then distance
- shiny stainless steel bowl
- peripheral presentation,
Phase II: Integrating Vision with Function

- Reduce complexity: auditory, visual and positional.

- Use highlighting color as part of visual target.

- Use embedded symbols
Embedded Symbols
Phase II: Integrating Vision with Function

- Movement to gain visual attention.
- Allow for latency.
- Familiar items especially with new learning.
- Predictable books with salient feature.
Yummy Yucky
Leslie Patricelli

Blue crayons are yucky.
Spaghetti is yummy.
Worms are yucky.
Phase II: Integrating Vision with Function

- Backlight materials/control light
- Use large print.
- Highlight best place to reach.
Cognitive
Other Phase I I Strategies

Tell us other strategies you use or have used in Phase I I:
Phase III: Resolving Characteristics

- Reduce complexity: auditory, visual and positional.
- Increase word and letter spacing.
- Use color highlighting
- Use predictable books/materials.
Phase III: Resolving Characteristics

- Use large print
- Use covers and line keepers.
- Use backlit technology
- Check facial recognition: Support social skills
Phase III: Resolving Characteristics

- Assess using CVI Complexity cards from APH

- Move carefully from 3D to 2D.

- Assess 2D against levels of complexity.
3D to 2D
Pick a Salient Feature
I like your bouncy-bounce puppy.
But you can’t spin like a top!
Tell us other strategies you use or have used in Phase 111:
- All strategies are in place only until skills are built.

- Assessment drives the strategies and the reductions in strategies.
Children are visually impaired.

Best practice for level of visual functioning

- Register with agency for the blind.
- Assess using Learning Media Assessment.
- Provide direct service.
- Alert the child by addressing them by name.
Best practice for level of visual functioning

- Support compensatory skills.

- Use touch cues.

- Inservices to staff around CVI

- Inservice to staff around the specific child’s skills.
Fluctuating Vision

- Consider the environment.
- Then consider the child.
To Read More:

- Christine Roman-Lantzey, Ph.D.
- Jim Jan, M.D.
- Gordon Dutton, M.D.
- Lea Hyvarinen, M.D.
- Mary Morse, Ph.D.
Resources

- *Cortical Visual Impairment: An Approach to Assessment and Intervention* by Christine Roman-Lantzy

- *CVI Perspectives* available on quota from APH

- APH website

Resources

- Texas School for the Blind website
- New England CVI mentors
- Perkins eLearning
Building Strategies Around CVI Phases

Ellen Cadigan Mazel, M.Ed., CTVI
CVI Advisor

Concord Area Special Education Collaborative: CASE

The End