



Texas School for the Blind and Visually Impaired Outreach Programs

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CVI Coffee Hour: Features and Needs of Individuals with CVI Across the Phases

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CVI Phases & The CVI Range

- Phase I: Primarily dorsal stream visual function
- Phase II: Dorsal and beginning ventral stream visual function
- Phase III: Refinement of ventral stream visual function

Why Phases AND Range scores?

- The changes in functional vision must be described in distinct ways that differentiate abilities and levels of access
- Phases provide 3 broad categories that represent a progression toward greater degrees of functional vision

Phase I

- The overarching goal is to build stable visual responses
- The individual scores 0-3 on The CVI Range
- Primarily functions using dorsal stream, “where” vision

What does an individual in Phase I do?

- visual behavior is fleeting
- generally, visual attention is to a familiar object
- may stare at lights
- generally, is unable to demonstrate eye contact or “find” the face of another
- visually attends to targets of a single, sometimes preferred color
- has frequent and prolonged visual latency
- may “fall asleep” or, close their eyes in a noisy, busy place
- notices objects only at near (within 12=18 inches)

What does the individual in Phase I need?

- a single, vibrant-color object
- objects that have movement or are shiny
- objects that are not constantly noisy
- when attempting to view a target, a darkened room and light on the target
- LOTS of wait time because of visual latency
- familiar objects, or, those that are visually similar to the familiar ones (Elmo to Clifford the Big Red Dog)

has limited visual field function, a “preferred” field and/or head position

Fig 1. Image of boy looking at a lightbox while a woman holds a phone.

Fig 2. Image of a boy in a wheelchair touching a backlit device.

Fig 3. Image of child looking at a red pom pom on a black surface.

Phase II

- Dorsal and beginning ventral stream visual function
- The individual scores above 3 to 7 on The CVI Range
- vision + function & “vision precedes the action”
- Transitions from dorsal (Phase I) to dorsal + ventral as the score improves

What does an individual in Phase II do?

- demonstrates eye to object contact with targets, improves across Phase II

- is able to maintain visual attention even when sound is present, improves across Phase II
- will visually attend to targets of almost any vibrant, highly saturated color
- has less latency-may demonstrate latency when tired, hungry, or over stimulated, improves across Phase II
- is generally able to visually attend at both right and left lateral fields though a dominant field may prevail; lower visual field is often impacted

What does an individual in Phase II need?

- controlled visual arrays but generally, not a totally quiet or totally dark space
- 3D objects but also, images that are paired with backlighting (lightbox. iPad)
- to be positioned in a learning setting with their back to sources of random movement
- O&M or assistance with independent movement due to likelihood of difficulties in lower field
- targets presented within 3-10 feet depending on the CVI Range score
- additional time to “notice” a target due to visual latency
- instruction in salient visual features and comparative thought

Fig 4. Image of a child looking at a tambourine with a red outline on a black surface.

Fig 5. Image of a woman holding a traffic cone that is on a chair in a cluttered room.

Fig 6. Image of two children in wheelchairs looking at a backlit screen while a woman points to a figure of a dog.

Fig 7. Image of a child in a walker reaching toward a red button on a door.

Fig 8. Image of a child in a wheelchair and a woman with a backlit device with an animal figure showing.

Fig 9. Image of a boy touching a lightbox with images on it.

Fig 10. Image of a boy in a wheelchair and woman by a door.

Phase III

- Refinement of ventral stream visual function
- The individual with CVI scores above 7 to the theoretical score of 10
- the overarching goal is the refinement of the CVI characteristics
- is using both dorsal and ventral streams of visual function though detail/ventral function remains challenging

What does an individual in Phase III do?

- the individual is generally able to make eye to eye contact but not able to discriminate facial expressions
- is able to use 2D materials that are adapted for less complexity
- continues to have difficulties in their lower field
- may demonstrate some visual curiosity in new settings but prefers familiar activities and materials
- likes YouTube but generally not TV programs or traditional movies
- has latency occasionally, especially if fatigued
- continues to require color highlighting of novel/salient features and pre-teaching of the visual elements of new places
- detect targets at distances as great as 20 feet away

What does an individual in Phase III need?

- a profound understanding of “CVI meltdowns” due to visual fatigue or frustration in new settings or with new materials
- O&M, use of a cane to help with safety due to lower field difficulties
- support with social engagement due to on-going difficulties interpreting facial expressions

- backlighting for 2D materials
- color highlighting of salient features of words, images, environments
- previewing of routes & novel settings

Fig 11. Image of a young man looking at a backlit communication device.

Fig 12. Image of child and a woman looking at images on a black background.

Fig 13. Image of child and woman who is pointing to words on an all-in-one-board.

Fig 14. Image of child looking at words and images on a lightbox.

Fig 15. Image of child looking at words on a device while a woman holds a photograph.

Fig 16. Image of child touching plastic figurines on a tray.

Fig 17. Image of child looking at letters on a lightbox.

Fig 18. Image of child looking at a word on a grey board.

The Phases

- Provide others a method to think about CVI as a continuum
- Are meant to be a way to describe broad stages of visual function
- Are used as a method for adults to avoid “lumping” individuals into a one-size approach

Because, CVI is a condition that impacts access to learning, engagement, and self-determination...and therefore, we must support the child’s visual needs

Fig 19. Image of two children in wheelchairs looking at objects on the ground.

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Thank you for joining us!

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Figure 1: TSBVI logo



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Figure 2: IDEAs that Work logo and OSEP disclaimer.