



## Therapy for Individuals with Cortical Visual Impairment

- Learning to “look” at an object or face, i.e., **Fixation**
- Learning to “follow” an object or face, i.e., **Pursuit**
- Learning to use a jumping eye movement from one object to another object, i.e. **Saccade**
- Learning to guide the motor system with the visual system “**look, reach, grasp**”

## Why Provide Vision Rehabilitation For Children With CVI?

Many children with CVI have multiple involvement, with limited motor or communication skills. It makes a significant difference in their quality of life if they can move their eyes purposefully to

- “look” at the face of someone trying to interact with them.
- “follow” the movement of people or objects in an area
- “look” at an object of interest that they would like to play or work with
- “jump” their eyes accurately enough from object to object or picture to picture to use an eye tracking communication device.

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## Cortical Visual Impairment

And Vision Rehabilitation Therapy to  
Enable Visual Guidance of Eye  
Movements and Motor Activity

*Compliments of*

Penelope S. Suter, O.D.  
FCOVD, FABDA, FNORA  
and

Virginie F. Dang, O.D.  
Providing vision services for  
general and special needs  
individuals



## What Is Cortical Visual Impairment?

Cortical Visual Impairment (CVI) is bilateral visual impairment that occurs due to brain injury or other neurologic deficit, in the absence of physical eye problems. It involves damage or dysfunction in the many visual brain centers and/or pathways that interpret visual form and space, as well as those areas and pathways that allow us to use vision to guide eye movements, and our other motor activities. For instance, many children with CVI do not understand how to “look” at a target of interest, such as a face, even though they can see it. This limits the child’s social interactions. Children with CVI who do not understand how to move their eyes to “look” at an object that they would like to touch or hold, are limited in their ability to reach out and interact with the world.

*It is critical to work with a doctor and therapists who understand that having CVI does not mean that the child cannot better learn to use the vision that they do have.*



## Some Visual Characteristics of CVI

“The eyes are able to see, but the brain does not understand what is being seen.”

- **Focusing** for near targets is frequently impaired, which is where most therapies are applied. The vision doctor must check and prescribe for any near focus problems. Just because the child has CVI does not mean they do not NEED GLASSES!
- **Visual Field Loss or Visual Neglect** may cause difficulty getting the child to respond to a particular area of space. Following hypoxic injury it is more likely to be superior and inferior to where the child is looking or fixating. Following stroke it is more likely to be to the right or left side of fixation.
- **Long Visual Latency** is common, and frequently causes confusion for the person observing the child. When a child with CVI tries to pursue an object with their eyes, the pursuit may occur several seconds after the object movement because visual information is processed so slowly.
- **Gaze preferences** to the right or left side can occur because the child’s ability to move their eyes toward the opposite side is impaired, OR because there is a visual-spatial neglect (i.e. unawareness of an entire side of space).
- **Movement** provides better awareness compared to stationary objects and can be used to help “wake up” the ability to fixate and follow.
- **Color Preferences** may exist and can also be used to provide more effective therapy.
- **Poor Visually Directed Reach** is a hallmark of CVI. When a child cannot understand that the visual input is tied to a physical object or face, or they are unable to “look” at it even though they “see” it, they cannot reach out to grasp it under visual guidance. Children with CVI will often look away from objects they are trying to grasp.