Cortical Visual Impairment
Fact Sheet
Definitions
Causes
Indicators
Characteristics
Assessments
Interventions

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CVI is the leading cause of blindness in the Western world today. The increase in numbers of children identified with CVI has left the field of Visual Impairment unprepared to meet the demanding needs.

In response to the growing numbers and needs, the West Virginia SenseAbilities Project joined with the Deafblind Projects in Delaware, Maryland and Vermont from 2003 to 2008 to provide intensive training over a five-year period to a number of professionals in fields related to disabilities. In West Virginia, four CVI mentors were trained.

Additionally, five more professionals in areas related to disabilities were selected for training from 2008 to 2010 by an application process to become CVI Partners, following a two-year training with the four state group. Dr. Christine Roman-Lantzy, author of the book, Cortical Visual Impairment: An Approach to Assessment and Intervention, provided the training through annual conferences, self-directed study, webinars and phone support. Information written by a variety of people in the field of CVI was used in the self-study portion of the coursework.

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West Virginia Birth to Three

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West Virginia SenseAbilities Project
for Children with Combined Vision and Hearing Loss

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What is Cortical Visual Impairment (CVI)?

**Definitions...**

**...for Medical Purposes:**
- CVI may be defined as bilaterally diminished visual acuity caused by damage to the occipital lobes and/or to the visual pathway. CVI is almost invariably associated with an inefficient, disturbed visual sense due to widespread brain disturbance.

**...for Educational Purposes:**
- CVI is a neurological disorder, which results in unique visual responses to people, educational materials and to the environment. When children with these visual/behavioral characteristics are shown to have loss of acuity or are judged by their performance to be visually impaired, they are considered to have CVI.

**Causes...**

The major causes of CVI are asphyxia, perinatal hypoxia ischemia (“hypoxia” is a lack of sufficient oxygen in the body cells of blood; “ischemia” is not enough blood supply to the brain), developmental brain defects, head injury, hydrocephalus, periventricular leukomalacia (PVL), intraventricular hemorrhage (IVH) and infections of the central nervous system, such as meningitis and encephalitis.

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**Indicators...**

**CVI is suspected by:**
- A normal or close to normal eye examination. CVI may coexist with optic nerve atrophy, hypoplasia, or dysplasia and retinopathy of prematurity
- A medical history including neurological problems
- The presence of unique visual/behavioral characteristics

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**Characteristics...**

Children with CVI display a number of specific behaviors. Understanding these specific behaviors will assist individuals in appropriate interactions and interventions with children who have CVI. CVI can influence vision in a variety of ways and can be mild to severe, temporary or permanent.

- **Color:** Distinct color preference. Preferences are predominantly red or yellow, but could be any color
- **Movement:** Attraction to movement of objects or people
- **Latency:** Individual responses are slow or delayed
- **Visual Fields:** Strong preference for looking at objects when presented in specific positions of peripheral and/or central viewing field
- **Complexity:** Difficulties with visual complexity/crowding. The child performs best when one sensory input is presented at a time, when surrounding environment lacks clutter and the object being presented is simple

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**Assessments...**

The Cortical Vision Impairment Range by Christine Roman, Ph.D. is used to assess how a child can best use his/her vision. The assessment analyzes the ten visual/behavioral characteristics associated with CVI. Resolution or developmental use of vision is reported in Phases I through III. Phase I focuses on building visual behaviors. In Phase II meaning is given to what is being seen. Resolution of these characteristics is seen in Phase III.

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**Interventions...**

Intervention strategies are based on the unique visual and behavioral characteristics associated with CVI. Activities and environmental adaptations are integrated into a child’s daily routines.

**Resources**
- http://wvde.state.wv.us/osp/vi/cvi
- www.cbp.org
- www.aph.org
- www.blindbabies.org
- www.tr.wou.edu/dblink/

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