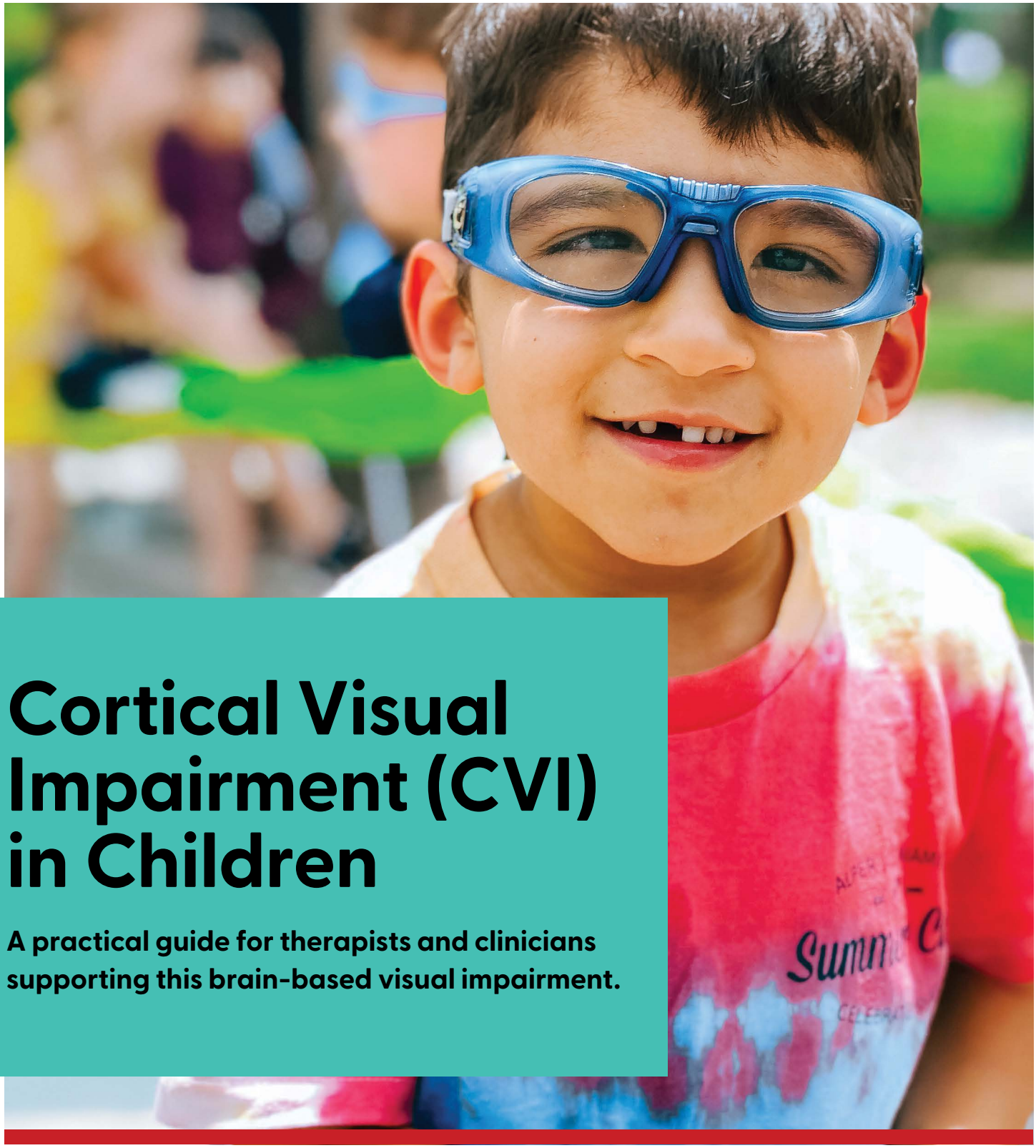

Cortical Visual Impairment (CVI) in Children

A practical guide for therapists and clinicians supporting this brain-based visual impairment.

PCVIS
Pediatric Cortical Visual Impairment Society

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What is Cortical Visual Impairment?

Cortical Visual Impairment (CVI) is a brain-based visual impairment. The eyes can see, but the brain has difficulty interpreting the visual world.

A Child Has CVI When

- An eye exam cannot fully explain their vision loss.
- They have a history of a neurological condition or brain injury, even if brain scans appear normal.
- They show specific visual and behavioral patterns identified in medical and educational research.[1,2]

Common Causes of CVI

CVI can occur when visual pathways in the brain are affected. Causes include:

- Hypoxic-ischemic encephalopathy
- Prematurity with periventricular leukomalacia
- Traumatic brain injury
- Hydrocephalus
- Seizures
- Genetic or metabolic conditions

UP TO 70%
of children with cerebral palsy are estimated to have CVI.[3]

Behaviors Associated With CVI

- Little interest in new objects, toys, or places.
- Needs extra light, movement, or bright color to draw attention to an object.

- Trouble coordinating eyes and hands—looking and reaching may not happen together.
- Responds to sound before sight.
- Difficulty focusing or finding objects in busy places (grocery store, playground), or locating objects on a cluttered surface or from a distance (classroom board).
- Trouble recognizing faces or expressions.
- Difficulty navigating a crowded or new space (may freeze or move too fast).
- Needs extra time to look at or process visual information.
- May tilt head to look at items in a specific visual field and may miss drop-offs, curbs, stairs, and other objects in the lower field.

Your Role as a Therapist

- Assess functional vision, sensory, and motor skills.
- Develop treatment plans that support visual and movement skills.
- Help children build social and daily living skills.
- Recommend assistive technology such as mobility aids, seating, and communication devices.
- Guide caregivers on environmental adaptations at home, school, and in the community.
- Support with guidance and resources.
- Collaborate with other professionals to support vision and daily function.

Some of these characteristics can be mistaken for other diagnoses, such as autism. Similarities include lack of visual curiosity, preference for moving targets, and preoccupation with light. These differences must be explained in the context of a child with a history of neurological condition.

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Tips for Visual Adaptations

- Reduce visual clutter and background distractions; offer preferential seating.
- Limit the number of items offered at one time.
- Allow extra time to look at objects before moving them.
- Place materials in the child's best visual field.
- Use bright color or light to highlight important objects; eliminate distracting light.
- Name key visual features aloud.

Things to Consider

- Consider accommodations throughout the day and adjust them, depending on the environment, familiarity with the task, and level of visual fatigue.
- Consider the importance of vision in identifying any motor delay.
- Collaborate with team members who understand the child's vision.
- Challenge vision during highly motivating or preferred activities.

What To Do if You Suspect CVI

- Refer to an ophthalmologist, neuro-ophthalmologist, neurologist, or optometrist.
- Communicate with the physician and/or give families specific language to discuss at appointments.
- Engage school personnel to ensure child has services, such as a TVI, O&M, and OT.
- Share your observations and ask for a CVI-specific functional vision assessment, such as the CVI Range©.[1,2]
- Trial environmental and task adaptations to support vision.

References

[1]Roman-Lantzy, C. (2018). Cortical Visual Impairment: An Approach to Assessment and Intervention. 2nd ed., New York, NY: AFB Press.

[2]Roman-Lantzy, C. (2019). Cortical Visual Impairment: Advanced Principles. Louisville, KY: APH Press.

[3]Durkin MS, Benedict RE, Christensen D, et al. (2016) Prevalence of Cerebral Palsy among 8-Year-Old Children in 2010 and Preliminary Evidence of Trends in Its Relationship to Low Birthweight. Paediatr Perinat Epidemiol.

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PCVIS is a 501(c)(3) nonprofit organization transforming outcomes for children with CVI by advocating for research, policy, education, practice, heightened awareness, and understanding of this brain-based visual impairment.

Visit PCVIS.vision **for more information and resources.**

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