

How CVI Is Diagnosed: Assessment Methods & What to Expect

When a parent suspects something is different about the way their child sees the world, getting the right cortical visual impairment diagnosis requires knowing exactly where to look – and who to ask. That is not always straightforward. CVI is still widely underdiagnosed, and the standard eye exam that most children receive is not designed to find it. Many families spend months, sometimes years, seeking answers before reaching a specialist who can accurately assess what is happening in their child's brain.

This guide is for parents navigating that process. It explains what CVI diagnosis actually involves, which specialists are equipped to evaluate it, what the key assessment tools look like, and how to prepare so that every appointment moves your child forward. If you are not yet familiar with what CVI is or how it presents, start with our [CVI overview](#) before reading this guide.

Why CVI Is Often Missed or Misdiagnosed

Understanding why CVI goes undetected so often is not just interesting background information – it is the key to knowing how to advocate effectively for your child. There are three main reasons CVI is frequently missed.

Standard eye exams test the eyes, not the brain. A routine pediatric vision screening checks whether the eyes can see clearly and whether they are structurally healthy. It does not evaluate the visual cortex – the part of the brain that processes visual information. A child with CVI can have perfectly healthy eyes and pass a standard exam with no flags. This is not a failure of the exam; it is simply not designed to detect brain-based visual processing differences.

CVI symptoms overlap with other conditions. Visual inattention, difficulty with complex environments, and inconsistent visual responses can look like attention problems, autism spectrum differences, developmental delay, or behavioral issues. Providers who are not familiar with CVI may pursue evaluations for other conditions before vision processing is considered.

CVI awareness varies among providers. Despite being one of the leading causes of pediatric visual impairment in developed countries, CVI is not yet a standard part of all pediatric ophthalmology training. Many ophthalmologists are not routinely screening for it, and many families are not told to ask about it. As a result, the average time from first parental concern to CVI diagnosis can be a year or longer.

If you suspect CVI, you may need to specifically request a CVI-focused evaluation. You have every right to do so.

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Who Diagnoses CVI?

A complete CVI evaluation typically involves more than one specialist. Each brings a different lens to the diagnosis – medical, neurological, and functional. In practice, you may not see all three specialists in sequence, and sometimes a single experienced TVI is the first professional to correctly identify CVI behaviors. Here is what each role contributes.

Pediatric Ophthalmologist or Neuro-Ophthalmologist

An ophthalmologist's primary role in CVI evaluation is to rule out eye-based causes for the visual behaviors you are observing. If your child's optic nerve, retina, or eye structures show damage, that is a different diagnosis pathway. An ophthalmologist may also identify CVI indicators – such as a visually inattentive child with structurally healthy eyes – and order brain imaging to investigate further.

A neuro-ophthalmologist, when available, bridges ophthalmology and neurology. They are well positioned to evaluate the connection between brain function and visual behavior and may be particularly valuable if your child has a known neurological history.

Pediatric Neurologist

A pediatric neurologist evaluates brain involvement and, in many cases, identifies the underlying cause of CVI – such as hypoxic-ischemic injury, periventricular leukomalacia, or other neurological events. They interpret brain imaging (MRI) results and can diagnose CVI as part of a broader neurological picture. If your child has already had a brain MRI showing changes to the visual cortex or white matter pathways, a pediatric neurologist may be the first to raise CVI as a possibility.

Teacher of the Visually Impaired (TVI)

For many families, the TVI is the most important diagnostic partner. A TVI with CVI expertise conducts the CVI Range assessment – the primary functional evaluation for CVI. While a neurologist interprets brain imaging and an ophthalmologist evaluates eye health, the TVI evaluates how your child actually uses their vision in the real world. This functional picture is often the most useful for both confirming a CVI diagnosis and guiding treatment.

In many cases, a TVI experienced with CVI is the first professional to recognize the pattern of behaviors as CVI and to recommend additional evaluation or formal diagnosis. If you have seen an ophthalmologist and neurologist but have not yet had a TVI-conducted CVI Range assessment, that is an important next step.

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The CVI Range Assessment

The CVI Range, developed by Christine Roman-Lantzy, is the most widely used assessment tool for cortical visual impairment. It is a structured functional evaluation – not a test your child passes or fails, but an observation of how they use their vision across a range of specific behaviors.

The assessment measures a child’s visual function across the ten characteristics associated with CVI: color preference, need for movement, visual latency, visual field preferences, difficulty with visual complexity, light-gazing, difficulty with distance viewing, atypical visual reflexes, difficulty with visual novelty, and absence of visually guided reach. Each characteristic is scored on a scale that reflects how much it affects the child’s functional vision, generating an overall range score from 1 to 10.

The three phases of the CVI Range correspond to the scores:

- **Phase I (Range 1-3):** Minimal visual response. The child may respond to light, preferred color, or slow movement, but vision is not yet functional for most daily activities.
- **Phase II (Range 4-7):** Vision is developing and beginning to integrate with other sensory information. The child uses vision more consistently but still struggles in complex environments.
- **Phase III (Range 8-10):** Visual behaviors are approaching typical, with some residual difficulties in busy or unfamiliar environments. The child may perform well in structured settings but still struggle in visually complex ones.

A full CVI Range assessment typically takes one to two sessions of 45 to 90 minutes each. The evaluator presents objects in controlled conditions – varying color, contrast, movement, background complexity, and environment – and observes the child’s responses carefully. Parents are often present and asked to share what they observe at home, which provides critical context that cannot be replicated in a single evaluation session.

For a detailed description of the ten CVI characteristics and what they look like in daily life, see our guide on [CVI symptoms and behaviors](#).

Other Diagnostic Tools and Tests

The CVI Range is the cornerstone of functional CVI diagnosis, but other evaluations may complement or support it. Understanding what each test tells you helps you ask informed questions and interpret results.

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Functional Vision Assessment (FVA)

A Functional Vision Assessment is a broader evaluation of how a child uses their vision across daily activities. While the CVI Range focuses specifically on the ten CVI characteristics, an FVA looks at a wider range of visual behaviors – including visual acuity, visual fields, eye movements, and how vision supports mobility, communication, and learning. The FVA complements the CVI Range and is typically conducted by a TVI.

Brain Imaging (MRI)

An MRI may show structural changes to the visual cortex, optic radiations, or other visual processing pathways that are consistent with CVI. Brain imaging can confirm a CVI diagnosis and often identifies the underlying neurological cause. However, it is important to know that CVI can occur with a “normal” MRI. The brain’s visual processing difficulties do not always show up clearly on standard imaging, so a normal MRI does not rule out CVI. Functional evaluation by a TVI remains essential regardless of imaging results.

Visual Evoked Potential (VEP)

A VEP test measures the brain’s electrical response to visual stimuli – essentially, whether and how quickly the brain “sees” a flashing pattern. Reduced or delayed responses can confirm that the brain’s visual processing is affected. VEP testing can be particularly useful in very young children or nonverbal children who cannot participate in behavioral assessments.

Electroretinogram (ERG)

An ERG tests the retina’s electrical response to light. Its primary role in CVI evaluation is elimination – confirming that the retina itself is functioning normally, which helps rule out eye-based causes for the visual behaviors being observed.

How to Prepare for Your Child’s CVI Evaluation

Parents who come to a CVI evaluation prepared with specific observations and documentation consistently get more from the appointment. Here is how to make your child’s evaluation as informative as possible.

Document your observations in writing before the appointment. Note specific behaviors: Does your child look at objects from the side rather than straight on? Do they respond to movement but not to still objects? Are there times of day when vision seems better? Is vision affected by fatigue, illness, or new environments? Be specific. “She doesn’t look at things” is less useful than “She will look at her red cup when it moves, but not when it’s sitting still on the tray.”

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Video record examples of concerning behaviors. This is one of the most valuable things you can bring to an evaluation. A short clip of your child at home, in their natural environment, showing the visual behaviors you have noticed is worth far more than a description alone. Evaluators cannot always reproduce home conditions in a clinical setting.

Bring all previous eye exam and neurological records. Any imaging results, ophthalmology reports, or neurological evaluations provide important context, even if they did not result in a CVI diagnosis.

Share contextual information about when behaviors occur. Time of day, fatigue level, illness, and environment all affect CVI behaviors significantly. An evaluator who knows that your child's vision is much better in the morning than the afternoon, or much better at home than in new environments, has a more complete picture.

Ask these questions to ensure you are seeing a CVI-experienced provider:

- “Do you have specific experience evaluating children with CVI?”
- “Will you use the CVI Range assessment as part of this evaluation?”
- “How do you distinguish CVI from other visual or developmental conditions?”
- “If CVI is confirmed, what are the next steps for treatment planning?”

A provider who is confident with CVI will answer these questions readily and specifically.

After Diagnosis: What Happens Next?

A CVI diagnosis, once confirmed, is the starting point for a treatment plan — not a final answer. Your child's CVI Range score guides the intensity and focus of interventions. A child in Phase I needs a different approach than a child in Phase II or III, and treatment plans should evolve as your child progresses.

If your child is under three years old, the next step is referral to early intervention services through your state's IDEA Part C program. Services can begin even before a formal diagnosis is finalized if a developmental delay is suspected. For children over three, the school district takes over through an IEP process. Read more in our guides on [CVI early intervention](#) and [CVI classroom accommodations](#).

Begin environmental modifications as soon as possible — you do not need to wait for services to start. Simplifying your home visual environment, identifying your child's preferred color, and controlling lighting are things you can do today. These changes

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support the treatment work that specialists will do and can make an immediate difference in your child’s visual experience.

Reassessment using the CVI Range is typically scheduled every six to twelve months to track progress and adjust the treatment plan. For a detailed guide to what CVI treatment involves, see our [CVI treatment guide](#).

About This Document

This white paper was created by New England Low Vision and Blindness. Portions of the content were generated using AI technology and reviewed for accuracy. However, the information is provided “as is” and is not intended as a substitute for professional advice or a comprehensive product assessment.

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