



## Understanding Visual Processing Issues

By Beth Arky

### What You'll Learn

What are visual processing issues?

How common are visual processing issues?

What causes visual processing issues?

What are the symptoms of visual processing issues?

What skills are affected by visual processing issues?

How are visual processing issues diagnosed?

What conditions are related to visual processing issues?

How can professionals help with visual processing issues?

What can be done at home for visual processing issues?

What can make the journey easier?

When your child passes the vision test at her checkup but doesn't see the difference between a triangle and a square, her eyes aren't the problem. The issue is her visual processing skills. If your child has been diagnosed with visual processing issues, or you think she might have them, there are things you can do to help.

While kids don't outgrow visual processing issues, there are ways to help them compensate for their challenges. Read on to find out about the common symptoms, along with supports that can help.

## What are visual processing issues?

When people think of eyesight, they usually think about accuracy, as in 20/20 vision. But vision is much more than that. The brain, not the eyes, processes the visual world, including things like symbols, pictures and distances. Weaknesses in these brain functions are called visual processing disorder or visual processing issues.

While there are ways to help kids compensate for those weaknesses, visual processing issues present lifelong challenges. They are not considered a learning disability. But they're fairly common in kids who have learning issues.

Visual processing issues don't just affect how a child learns. They also impact his ability to do ordinary things like sorting socks or playing a simple game of kickball. Visual processing issues can cause problems with socializing and self-esteem, too. Some kids may become frustrated and withdrawn.

### **Eight Types of Visual Processing Issues**

Visual processing issues are complex. That's because there are eight different types, and people can have more than one. These issues often go undetected because they don't show up on vision tests. Here are the different types of visual processing issues scientists have identified:

- **Visual discrimination issues:** Kids with this type have difficulty seeing the difference between two similar letters, shapes or objects. So they may mix up letters, confusing *d* and *b*, or *p* and *q*.
- **Visual figure-ground discrimination issues:** Kids with this type may not be able to pull out a shape or character from its background. They may have trouble finding a specific piece of information on a page.
- **Visual sequencing issues:** Kids with these issues have difficulty telling the order of symbols, words or images. They may struggle to write answers on a separate sheet or skip lines when reading. They also may reverse or misread letters, numbers and words.
- **Visual-motor processing issues:** Kids with these issues have difficulty using feedback from the eyes to coordinate the movement of other parts of the body. Writing within the lines or margins can be tough. Kids also may bump into things and have trouble copying from a book.
- **Long- or short-term visual memory issues:** Kids with either type have difficulty recalling what they've seen. Because of that they may struggle with reading and spelling. They may also have trouble remembering what they've read and using a calculator or keyboard.
- **Visual-spatial issues:** Kids with these issues have difficulty telling where objects are in space. That includes how far things are from them and from each other. It also includes objects and characters described on paper or in a spoken narrative. Kids may also have a tough time reading maps and judging time.
- **Visual closure issues:** Kids with these issues have difficulty identifying an object when only parts are visible. They may not recognize a truck if it's missing wheels. Or a person in a drawing that is missing a facial feature. Kids may also have great difficulty with spelling because they can't recognize a word if a letter is missing.
- **Letter and symbol reversal issues:** Kids with these issues switch letters or numbers when writing. Or make letter substitutions when reading after age 7. They also have trouble with letter formation that affects reading, writing and math skills.

[Back to the top](#)

---

## How common are visual processing issues?

It's not clear how many kids have visual processing issues. But the symptoms often occur among kids with learning issues. That includes [dyslexia](#), the most common learning issue. As many as one in five kids in the United States may have dyslexia.[1]

[Back to the top](#)

---

## What causes visual processing issues?

Researchers don't know exactly what causes visual processing issues. They do know that the issues occur when the brain fails to accurately receive and read the visual cues sent by the eyes.

Some research suggests that low birth weight and having been extreme preterm may play a role.[2] It's also possible that mild traumatic brain injury could lead to visual processing issues. But there isn't enough research to fully support that theory.[3]

[Back to the top](#)

---

## What are the symptoms of visual processing issues?

It can be very hard to recognize the signs of visual processing issues in your child. But once you do, you'll be better able to find the strategies and supports that will help. Here are some of the most common symptoms of visual processing issues:[4]

- Doesn't pay attention to visual tasks
- Is easily distracted by too much visual information
- Is restless or inattentive during video or visual presentations
- Lacks interest in movies or television
- Has difficulty with tasks that require copying (taking notes from a board)
- Reverses or misreads letters, numbers and words

- Bumps into things
- Has difficulty writing within lines or margins
- Has trouble spelling familiar words with irregular spelling patterns
- Can't remember phone numbers
- Has poor reading comprehension when reading silently
- Can't remember even basic facts that were read silently
- Skips words or entire lines when reading, or reads the same sentence over
- Complains of eye strain or frequently rubs eyes
- Has below-average reading comprehension and writing skills, despite strong oral comprehension and verbal skills
- Has weak math skills; frequently ignores function signs, omits steps, and confuses visually similar formulas
- Routinely fails to observe or recognize changes in bulletin board displays, signs or posted notices

[Back to the top](#)

---

## What skills are affected by visual processing issues?

Kids may not show signs of visual processing issues until they start school. But the longer they go without help, the greater the impact may be on a wide range of skills. Here are some of the areas visual processing issues can affect most.

- **Academic:** Kids can have great difficulty with reading, writing and math. They may struggle to tell letters, numbers and symbols apart. They may also have a hard time remembering and recognizing what they read.
- **Emotional:** As kids fall behind at school, their self-confidence can take a big hit.
- **Life skills:** Visual processing issues can make simple tasks hard, from matching socks to learning phone numbers.

[Back to the top](#)

---

## How are visual processing issues diagnosed?

When your child starts struggling in school and it seems like it's a vision problem, the first step is a trip to the pediatrician. Before you go it's important to take notes on what you've been seeing in your child. The doctor will most likely give your child a vision test and look for any health issues with his eyes. If everything checks out the doctor may refer you to a specialist for further evaluation.

**Pediatric ophthalmologist:** Your child's doctor may refer you to a pediatric ophthalmologist, a medical doctor who treats eye and vision problems in children. This specialist will likely perform a complete examination of your child's eyes and vision to look for physical reasons for your child's issues. If there are none there will be no further vision testing.

**Pediatric optometrist:** Instead of sending you to a pediatric ophthalmologist your child's doctor may refer you to a pediatric optometrist. This is a health-care professional who provides primary eye care to children. In addition to prescribing glasses, optometrists can also evaluate patients for vision or eye problems.

**Neuropsychologist:** If everything checks out with your child's vision and eye health, the eye specialists or your child's doctor may refer you to a neuropsychologist. This is a psychologist who is trained to diagnose learning issues and weakness. The neuropsychologist may perform a series of tests to see how your child's visual issues are affecting her development. The tests are designed to measure intelligence, academic skills (reading, writing, math), language skills (vocabulary, listening comprehension, verbal expression), memory and attention abilities.

The specialist also may interview you and your child's teachers for more information. This is the specialist who can tell you if your child has visual perception issues.

**Behavioral optometrist:** This is an optometrist who, after ruling out physical issues, can provide something called vision therapy. This approach involves a variety of exercises using devices like prisms and lenses. There is no scientific evidence that vision therapy helps, however.

[Back to the top](#)

---

## What conditions are related to visual processing issues?

Visual processing issues aren't a recognized learning disability on their own. But the symptoms often appear in kids with reading, writing and math issues. Some experts believe visual processing issues are risk factors for learning issues such as dyslexia. But a comprehensive report from the American

Academy of Pediatrics states that visual processing issues are a *result* of that condition, not the *cause*.<sup>[5]</sup>

[Back to the top](#)

---

## How can professionals help with visual processing issues?

There are no medications or recognized cures for visual processing issues. Some pediatric optometrists may recommend vision therapy for your child. There's no scientific proof this approach works, however.<sup>[6]</sup> It involves your child doing exercises using lenses, prisms and filters. The exercises are done at home and in the office. The goal is to reduce the signs and symptoms of visual processing issues.

### Help at School

The professionals who may help the most are the ones working with your child at school.

- If your child has been evaluated and qualifies for special services, you and your school will come up with an Individualized Educational Program (IEP). This written plan guarantees your school will provide specific supports for your child. Those supports can include things like tutoring in reading and writing skills. But even without an evaluation, your child may be able to get support.
- Response to intervention (RTI) is a program some schools use to screen all students and find the ones who need extra help. It starts out with small group instruction. Kids who still don't progress receive intensive one-on-one instruction.
- Your teacher also can use informal supports. For example, she might give your child books with enlarged print or allow him to write test answers on the same sheet of paper as the questions.
- If your child isn't eligible for an IEP, the school may recommend a 504 plan. A 504 plan lists the things your child's school will do to meet your child's needs. That might include things such as giving less homework or having tests read aloud to your child.

[Back to the top](#)

---

## What can be done at home for visual processing issues?

Raising a child with visual processing issues takes extra patience and work. But there are many ways you can help your child improve skills. Here are some strategies you might want to consider:

- **Learn as much as you can.** The more you know, the more you'll be able to help your child.
- **Observe and take notes.** Observe your child closely and take notes on problem areas. You'll develop a better understanding of what he's going through. Your notes will also be helpful when you're talking to family members, your child's doctor, teachers and anyone else helping your child.
- **Write out schedules or instructions clearly.** Break instructions into concise steps, and number each step. Write information in large, clear letters. Color coding can be helpful too.
- **Offer lots of practice.** Help your child hone his visual processing skills through fun activities. Try doing simple puzzles or reading the *Where's Waldo?* books together. Play catch or roll a ball back and forth together.
- **Celebrate victories.** If your child has struggled with learning a specific spelling rule, and aces the latest test, be generous with praise. Your support and recognition for genuine achievement may give your child the boost he needs to keep striving.

[Back to the top](#)

---

## What can make the journey easier?

Wherever you are in your journey with visual processing issues, this site can help you find support, strategies and resources.

- **Connect with other parents.** Remember that you're not alone in your experience. Join our online community to share insights and suggestions with parents facing similar challenges.
- **Get behavior advice.** You can also explore Parenting Coach for tips from experts on how to handle behavior challenges.
- **Look into technology.** Tech Finder offers suggestions for apps and other technology that could be helpful for your child.
- **Find out about local resources.** Every state has at least one Parent Training and Information Center sponsored by the U.S. Department of Education's [Office of Special Education Programs](#). You can find one in your area through the Parent Technical Assistance Network's website.

Understanding visual processing issues is a great first step to finding ways to help your child. As you navigate your journey, do your best to stay positive. Your love and support can make a big difference in your child's life.

[Back to the top](#)

---

## Key Takeaways

- **Visual processing issues affect a child's ability to recognize letters, symbols and numbers.**
  - **Many children with learning issues like dyslexia have visual processing issues.**
  - **There's no cure for visual processing issues, but there are many strategies and supports that can help.**
- 

## Sources

[1] Handler, Sheryl M., and Walter M. Fierson. "Learning Disabilities, Dyslexia, and Vision." *Pediatrics* 127.3 (2011): E818–856. Pediatrics.aappublications.org. American Academy of Pediatrics, 28 Feb. 2011. Web. <http://pediatrics.aappublications.org/content/127/3/e818.full?sid=bd9574fb-4575-4d35-a46e-a63394e68331>

[2] Molloy, C. S., M. Wilson-Ching, et al. "Visual Processing in Adolescents Born Extremely Low Birth Weight And/or Extremely Preterm." *Pediatrics* 132.3 (2013): E704-712. NCBI. Web. <http://www.ncbi.nlm.nih.gov/pubmed/23918899>

[3] Brousseau-Lachaine, O., I. Gagnon, et al. "Mild Traumatic Brain Injury Induces Prolonged Visual Processing Deficits in Children." *Brain Injury* 22.9 (2008): 657-68. NCBI. Web. <http://www.ncbi.nlm.nih.gov/pubmed/18698516>

[4] "Visual Processing Disorder." *LDANL.org*. Learning Disabilities Association of Newfoundland and Labrador. Web. <http://www.ldanl.org/lda/?q=VPD>

[5] Olulade, Olumide A., Eileen M. Napoliello, and Guinevere F. Eden. "Abnormal Visual Motion Processing Is Not a Cause of Dyslexia." *Neuron* 79.1 (2013): 180-90. Cell.com. Cell Press. Web. [http://www.cell.com/neuron/abstract/S0896-6273\(13\)00395-4](http://www.cell.com/neuron/abstract/S0896-6273(13)00395-4)

[6] "Learning Disabilities, Dyslexia, and Vision."

---

### About the Author



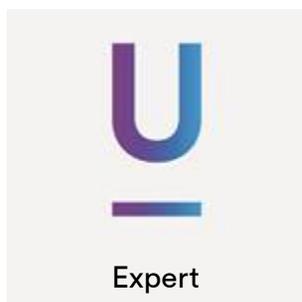
**Beth Arky**

### Reviewed by



**Mark Griffin, Ph.D.**, was the founding headmaster of Eagle Hill School, a school for children with specific learning disabilities.

## Chat With an Expert



**Thu Apr 12 at  
12:00pm ET**

**Easing the  
Transition to  
College for  
Students with  
Learning and  
Attention  
Issues**

The Understood Team

**RSVP**

[See all Expert Chats](#)

Copyright © 2014-2018 [UNDERSTOOD.ORG](http://www.understood.org) USA LLC. All rights reserved. "Understood" and related logos are trademarks of [UNDERSTOOD.ORG](http://www.understood.org) USA LLC and are used with permission. **This website provides information of a general nature and is designed for**



**information and educational purposes only and does not constitute medical or legal advice. Understood does not and will not take money from pharmaceutical companies. We are a nonprofit initiative.** For more information, please review the [Terms and Conditions](#).

"Understood" as used above includes [UNDERSTOOD.ORG](#) USA LLC and NCLD, and their officers, affiliates, parents, and related entities, and their respective employees, contractors, or other personnel.

For more information like this, visit [Understood.org](#)

