



NEUROVision
CLINIC
CONCUSSION REHAB
PERFORMANCE ENHANCEMENT



she knew that that was true

- Dr. Coralee Mueller

Learning Related Vision Problems



Why

“When I was in grade 3, I started having trouble reading. The words would swim on the page, I’d lose my place and skip lines. My eyes and head would ache and I felt nauseous. I figured that this was normal and how reading was for everyone, I didn’t know why I was so much slower than everyone else and why it was so hard for me to understand what I read. I did everything possible to avoid reading. I also started having trouble paying attention in class and focusing. I had little to no awareness of what was going on with my school courses. Coping strategies became my only way of getting through. It wasn’t until I was in university that it became apparent to me that this was a vision problem, as my reading became increasingly more affected by double and blurring vision even though I had 20/20 “vision”.

Through the College of Optometrists in Vision Development I discovered Optometric Vision Therapy and learned that a better way is possible. I know how it feels to not feel smart because you struggle with reading. I know how it feels to be the last one picked for the gym class baseball team because you’re uncoordinated and miss the ball. I know that greater opportunity is attainable. And that is why I do this.”

– Dr. Coralee Mueller, Optometrist in Vision Development

You see with your brain, not your eyes.

You can think of the eyes as being the brain's window through which to look. As an analogy, the visual system is like a computer system. The eyes are the hardware and the brain is the software. Most learning related vision problems are software problems.

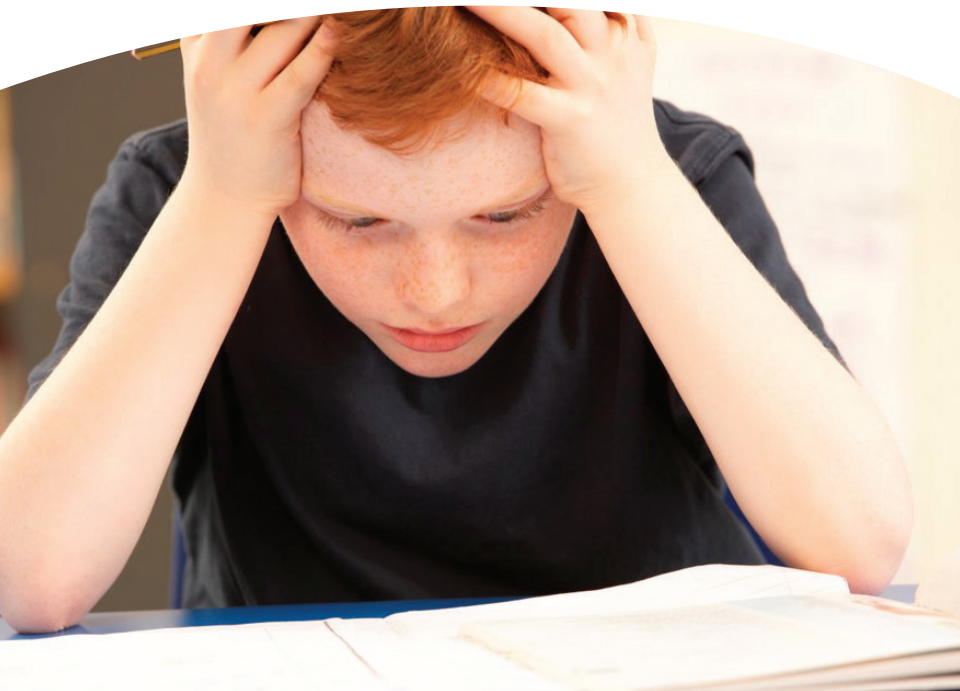
Children can have “20/20 eyesight” and still have vision problems that significantly hinder their learning.

Vision is our dominant sense, and our most important method of gathering information for learning, for deriving meaning from our environment and directing action. Visual coordination skills are critical for being able to see properly and they are separate from having “20/20 vision”. Having 20/20 vision refers to eyesight; the ability to detect fine detail. But there are many other critical visual skills that create the visual process.



Important Visual Skills:

- coordinating functional eye movements
- maintaining focus for prolonged periods of time
- changing focus readily across varied distances
- following a line of print without losing your place
- interpreting and accurately processing what you see
- eye-hand and eye-body coordination



The majority of children who are learning disabled have a deficiency in visual skill that is impeding their ability, affecting their life.¹
10% of the general population is affected.²

Testing for these types of visual skills is not necessarily included in a general routine eye examination.

Children quite often won't complain or mention any symptoms. Children assume that the way they see is normal and have no experience to know otherwise. Diagnosing learning related vision problems often depends on a more indepth assessment of functional skill in addition to the general eye examination. It is even possible to have normal results on general binocular vision tests and have underlying problems that are detected with extensive testing.

Deficiencies in visual efficiency significantly impede early reading.³

Even children who excel at their current grade level may have subtle underlying inefficiencies in their visual process that they are coping with. Other children compensate by touching, getting closer, or moving around in an attempt to interpret their environment. However, some are not able to cope and tend to disengage and avoid reading. Often children will appear inattentive and hyperactive. Many of the symptoms of functional vision dysfunction overlap with ADHD.

Common symptoms of ADHD & learning related vision problems in children over age 7

- ☐ Fails to give attention to detail or makes careless mistakes
- ☐ Often does not listen when spoken to directly
- ☐ Often forgetful in daily activities
- ☐ Often difficulty sustaining attention
- ☐ Often does not follow through on instructions or fails to finish work
- ☐ Often difficulty organizing tasks and activities
- ☐ Often avoids tasks regarding sustained mental effort
- ☐ Often loses things
- ☐ Often distracted
- ☐ Often fidgets

1 Maino, D. (2010) Editorial: The Binocular Vision Dysfunction Pandemic: Optometry and Vision Development, 41(1): 6-13.

2 Montes-Micro, R. (2001) Prevalence of General Dysfunctions in Binocular Vision: Annals of Ophthalmology, 33(3): 205-208.

3 Young B, Collier-Gorg K, Schwing S. (1994) Visual Factors - A Primary Cause of Failure in Beginning Reading: Journal of Vision Development, 32(1): 58-71.



Signs of a Vision Problem



Losing one's place while reading



Having frontal headaches



Seeing text drift in and out of focus when reading or writing



Rubbing eyes when reading and general agitation or resistance to reading



Being easily distracted from reading or other close work

COMMON VISUAL SKILL PROBLEMS

Any child can have a deficiency in a single skill or a combination of skills.

CONVERGENCE INSUFFICIENCY

This happens when the brain turns the eyes outward instead of inward when focusing close up, and can cause near vision to sometimes appear double or be strained, making it difficult to read.

a child who sees like this has 20/20 vision

ACCOMMODATIVE INSUFFICIENCY AND INFACILITY

This happens when the brain doesn't coordinate the eye's focusing muscle to readjust its focusing lens between looking far and close. This can cause near or far vision to blur in and out, making it difficult to read or focus on the board at the front of the class.

a child who sees like this has 20/20 vision

VERGENCE INFACILITY

This happens when the brain doesn't move the eye muscles freely inward and outward to reposition the eyes to look at different distances. Vision can appear blurred and double at various times, making it difficult to read and to look from the board at the front of the class to the notes on their desk.

a child who sees like this has 20/20 vision

VISUAL PROCESSING DYSFUNCTION

This happens when the brain is not coordinating the visual process and is not seeing a coordinated image. Letters can appear jumbled and words can appear reversed, making it difficult to learn how to spell and to understand what is read.

a child who sees like this has 20/20 vision

Helpful web resources: covd.org | oe pf.org

Vision is a learned process. You are not born knowing how to see, you are born with the capacity to develop your visual process through necessary experience.



Like learning how to ride a bike, children who develop an efficient visual system are riding a speed bike. Those with visual skill deficiency are riding a broken bicycle. Riding that bicycle more isn't going to fix the problem.

Thanks to our brains' ability to grow and change, these conditions are treatable.

It is possible to develop your visual process at any age through neuroplasticity. Vision therapy can be effective for learning and developing visual skill that is lacking. Treatment is individualized and may include whole body exercises for brain development as well as the use of therapeutic lenses, eye exercises, instruments, computers and 3-D techniques.



It is important to have first developed the necessary visual skills for academic activities in order to have better opportunities for success in academics.

We can help create opportunity to reach higher levels of potential.

As **Optometrists in Vision Development** we assess the visual process from a developmental and behavioural perspective. We diagnose dysfunctions in the visual process and treat them therapeutically.

What to look for in children:

Seeing single objects occasionally double into two

Skiping words or lines when reading

Having trouble finding the next line on the page

Seeing things occasionally drift in and out of focus

Having headaches or fatigue with reading or near work



Dr. Coralee Mueller BSc (Hon) OD FCOVD
Optometrist in Vision Development
Neurodevelopmental Movement Consultant

Board Certified in Vision Development,
Vision Therapy, and Vision Rehabilitation

Whitby Office

114 Dundas Street East
Suite 208, Whitby ON
L1N 2H7

P 905 430 2229

F 1 855 710 6536

E admin@neurovisiontherapy.com
www.neurovision.clinic



NEUROVision
CLINIC

CONCUSSION REHAB
PERFORMANCE ENHANCEMENT