NEURO: AN EMERGING SUBSET OF OPTOMETRY?

Perhaps you’ve heard the terms developmental optometry, behavioral optometry, functional optometry, and neuro-optometry before now, but do you know what they mean and how they differ? I’ve been practicing for 20 years, and, in the general clinical sense, these terms aren’t exactly a part of the common vernacular. But in the past 10 years, our knowledge surrounding the visual processing pathways and the assessment and treatment of neurologic vision problems has grown. This article examines the subspecialty of neuro-optometry and how it relates to developmental, behavioral, and functional optometry.

PO-TAY-TOE, PO-TAH-TOE?

We have all heard the terms developmental, behavioral, and functional optometry used interchangeably, so I want to define these branches of optometry, at least for the purposes of this article. For now, we are going to accept the theory that behavioral optometry is an umbrella term under which developmental and functional optometry fall. That said, foundational to the thinking of the behavioral...
A brain injury occurs in the United States every 9 seconds.¹

90 percent of all TBI patients experience visual dysfunction.³

69 out of 100 adolescents diagnosed with a concussion are also diagnosed with a functional vision problem.⁴

Traumatic brain injury (TBI) is the leading cause of disability and death in children between the ages of 0 and 4 years and in adolescents between the ages of 15 and 19 years.²

Optometrist is that vision (ie, your visual skills and how they function for you in day-to-day life) is a learned skill and can therefore be improved with intervention over and above the visual acuity component.

The typical optometrist provides routine care and is primarily concerned with vision problems caused by health issues or by the need for vision correction. Optometrists generally measure and assess various components of vision and aim to achieve 20/20 VA with eyeglasses or contact lenses.

Those who consider themselves behavioral, developmental, functional, or neuro-optometrists look not only at the quantity of vision but also the quality of vision. Humans are no longer hunters and gatherers. We don’t spend the majority of our time looking 20 feet away. We spend most of our time focused on up-close tasks for long periods of time, so sustained near vision is something that must be analyzed much more thoroughly. Developmental and behavioral optometrists are interested in how the ambient and focal processing pathways operate to allow patients to track, focus, fuse, and visually process the world around them and how they integrate these skills with other sensory modalities. These specialists also look at how vision informs the body’s orientation in space and how we communicate with other people, relative to how we process visual information.

Neuro-optometry goes even deeper. It looks not only at quality of vision, but specifically at how vision is affected by a neurologic event (eg, traumatic brain injury, concussion), a condition (eg, multiple sclerosis, cerebral palsy, autism spectrum, Parkinson disease), or a cerebrovascular accident (stroke). Neuro-optometric services include visual processing evaluations, ocular health examinations, the evaluation of sensorimotor, visual field, accommodative, and oculomotor function, and special testing.¹ Neuro-optometrists also provide patients with therapeutic options ranging from specialty lenses and prisms to selective occlusion and neuro-optometric rehabilitation and frequently coordinate their care with other health care professionals. Neuro-optometry may be considered a subset of behavioral, developmental, and functional optometry, but I like to think of it as a subset specialty.

There is also a fundamental difference between general optometry and behavioral optometry from a prescribing standpoint. That is, general optometrists use lenses and prisms to compensate for refractive error and eye alignment issues. Behavioral optometrists use lenses and prisms in a compensatory manner as well, but they additionally consider using these optical tools to address visual performance.

THE PATH TO SPECIALIZATION

Think you might want to specialize in neuro-optometry? Here’s some advice for getting started.

Get Mentored
If you’ve been out of school for a while and are interested in specializing in neuro-optometry, I would recommend seeking out a professional mentor, someone who is already practicing at the highest level in the field.

Consider Higher Learning
Another suggestion would be to get involved with either the College of Optometrists in Vision Development (COVD, covd.org) or the Neuro-Optometric Rehabilitation Association (NORA, noravisionrehab.org). Both offer fellowship programs to practicing optometrists that include research, high-level case analysis, presentation, and, in NORA’s case, publishing. The COVD program is a bit broader in that it includes learning and vision as well as neuro, whereas NORA is all neuro. Note: These credentialing programs can take anywhere from 4 to 10 years to complete for fellowship status.

Work With What You Have

Again, if you’re already a practicing optometrist and you have patients with a history of any amount of brain injury, even a mild concussion, start listening to them to identify what might be functional vision problems. Keep an ear out for complaints about not being able to focus on visual tasks, having difficulty with comprehension, or experiencing frequent headaches or unsatisfactory vision despite glasses or contact lenses in a new prescription. These patients are your target demographic for increasing your clinical neuro-optometry skills. When you identify them, do some research, consult your mentor, and try out some treatment strategies. Be sure to give these patients plenty of time to fully describe their visual experiences, and follow-up with them regularly.

For those of you who are currently in optometry school, check with your educational institution. Several schools now offer neuro-optometric vision rehabilitation residencies.

GETTING RECOGNIZED FOR NEURO SERVICES

Neuro-optometrists interested in vision rehabilitation may rely on vision therapy as a treatment option, but we may also use counseling, lenses and prisms, or partial occlusion. Or we might collaborate with neurologists, physical therapists, occupational therapists, or physiatrists. I think we’re better situated to be brought into the fold by medical providers, especially neurologists and physiatrists who have worked with neuro-optometrists in a collaborative way and have seen what we can do to help patients functionally.

One of the most helpful things for me was to establish a relationship with the rehabilitation center at a local hospital. I have given several informational seminars for the physical therapists, occupational therapists, and speech and language pathologists there, and, in turn, they have specifically given my name and my practice information to their patients. I would say roughly 80% of my neuro-optometry referrals have come from professionals who work at the rehabilitation center with people who have had traumatic brain injuries and strokes. I have also visited the care facilities that are the next step for patients out of rehab and performed vision assessments there. After making those connections, I have had the facilities transport patients to my office for care. Making those connections is vital.

LEAD THE WAY

With neuro-optometry, we have an opportunity to move our profession into the forefront of medicine. Being recognized as a subspecialist of this type could prove beneficial in terms of job security, as we are all well aware of the disruptors and the tumultuous medical marketplace affecting our practices and livelihood.

LEANNE LIDDICOAT, OD, FCOVD
- Optometrist at ClearVue Eye Care, Roseville, California
- drml@clearvue.org
- Financial disclosure: None