

VI TIMES

Volume 5, Issue 3

MN Regions 5 & 7 Vision – O&M Staff

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Optic Nerve Hypoplasia (ONH)

What Is ONH?

Optic Nerve Hypoplasia (ONH), according to Children's Hospital in Los Angeles, CA, is "the leading ocular cause of blindness and visual impairment in young children." ONH occurs during development of the baby. It is not inherited. It does not have a cure.

Children who have been diagnosed with ONH have small or under-developed optic nerves. The optic nerve of each eye is responsible for relaying information from the eye to the brain. Without a good connection between the eye and the brain, the information will not be complete and will result in decreased vision. The range of ONH seen in our students is wide from only one eye being affected, to low vision, to legal blindness, to total blindness. Often there are accompanying endocrine conditions with the ONH (pituitary issues, growth issues, thyroid issues, hormonal issues, adrenal issues, low blood sugar or hypoglycemia, and issues with cortisol and sodium levels). Dr. Mark Borchert, a major researcher in the field, states, "more than 70% of children with ONH have some type of hormone problem." A random eye movement called nystagmus is frequently seen in children with ONH who have very low vision. Neurological or brain related differences are often associated with ONH. ONH is sometimes referred to as septo-optic dysplasia or de Morsier's syndrome (they are all names for the same condition).

Medical & Educational Factors

The child with ONH will learn in a different manner than a child without ONH. An educational plan must be in place that will address all aspects of the ONH and associated physical/medical issues. Parents, medical staff, and school staff must work closely together to provide the best support for the child.

Because the pituitary gland is involved to varying degrees, the educational team should be aware of physical growth patterns, metabolism (energy control) and sexual development patterns. The child's body may have difficulty making some hormones that promote typical growth, energy, and sexual development. The hormonal differences may not be evident until the child is a bit older.

The hormonal differences may impact educational performance. The child may experience low blood sugar/hypoglycemia, be small in size, experience low energy/hypothyroidism, etc. Thyroid hormone imbalance can lead to "poor growth, slowing of mental and muscle function, weight gain, feeling cold, irregular periods, hair loss, hoarse voice, brittle nails, and dry, coarse skin." (www.focusfamilies.org)

Characteristics

The organization, Blind Babies of San Francisco, CA, has published a list of visual and behavioral characteristics often associated with ONH. They include the following:

- "The child's vision is characterized by a lack of detail (depressed field), but this lack of detail is not comparable to the blurred reduction in vision when a person removes her glasses.
- "In certain cases of ONH a specific field defect occurs. Children may not be aware of people or objects in the periphery [side fields].
- "Children with ONH may be unable to locate objects in space precisely due to a lack of depth perception.
- "Some children with ONH have mild photophobia. These children may squint, lower their head, avoid light by turning away, or resist participating in outdoor activities.
- "When one eye is affected more than the other, an ophthalmologist may recommend a trial of patching the stronger eye, since the visual loss may be due to amblyopia.
- "Some feeding issues are associated with hormonal problems. Lack of interest in eating may be due to absent or diminished sense of smell and taste. Children with ONH may have very restricted food preferences. Some children exhibit excessive lip smacking while eating.
- "Behaviors of some children with ONH may be due to associated medical conditions, such as inattentiveness and irritability due to low blood sugar levels (hypoglycemia).
- "The child with associated central nervous system problems may be easily distracted, quickly frustrated and act in a disorganized or an impulsive way."

Strategies

The organization, Blind Babies of San Francisco, CA, has also published a list of educational recommendations to consider for children with ONH in school:

- "Each child should receive medical monitoring and comprehensive, ongoing, functional and educational assessment. Teachers need to increase the size, contrast, and lighting of materials for a child who has nystagmus and bilateral severe visual loss because of generally depressed fields.
- "When a specific field loss is identified, materials need to be presented within the child's visual field. The child should be encouraged to turn his head to look for people and objects outside his visual field.
- "A child with ONH needs the opportunity to develop learned aspects of depth perception through fine and gross motor activities, including container play, nesting and stacking, ball tossing and rolling, pouring activities, and lots of practice with stairs, slides, foam wedges for crawling, and cardboard box play.
- "The effects of light sensitivity can be minimized by adjusting lighting levels, wearing tinted lenses, and minimizing glare on surfaces.

- "A child with ONH often has other conditions that need to be considered when developing an individual education plan.
- "A child who is easily distracted, frustrated, disorganized, and impulsive may be helped by predictable physical environments, dependable daily routines, and limited distractions.
- "Slowing the pace of activities and providing predictable transition routines may help reduce resistant and irritable behavior.
- "Offering frequent snacks to children diagnosed with hypoglycemia may be helpful.
- "When a child does have feeding problems, parents and professionals need to agree on recommended strategies to create a positive feeding experience.
- "When a child has no functional vision, an approach that uses all the senses for learning is needed.
- "Evaluation by an instructor of Orientation and Mobility is essential in meeting the child's needs, due to loss of detail vision and vision field loss."

Past Newsletter Topics

Past VI Times include:

- Introduction to Blindness/Visual Impairment
- Cortical Vision Impairment
- Living Skills
- Low Vision
- Multiple Disabilities
- Orientation & Mobility
- Recreation & Leisure
- Transition
- Braille
- Early Childhood Intervention
- Technology
- Sensory Skills
- Social Skills
- Teaching Social Skills
- Transition & Self-Advocacy
- Literacy

Contact your Teacher for the Blind / Visually Impaired or Certified Orientation & Mobility Specialist if:

- You have further questions on the newsletter topic
- Would prefer the newsletter in electronic format by email or in print.