



NORTHAMPTON
VISION
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Optometric Vision Therapy

What is it? How does it work?

Who will benefit?



14th Annual “Focus” on Vision Impairment and Blindness Conference March 13, 2019

Goals for Today's Talk:

- Overview of Neuro-developmental optometry
- Common visual problems in the intellectually disabled (ID) population
- Understanding Optometric Vision Therapy
- Identifying individuals that may benefit
- Locating an appropriate practitioner

The Three O's

- Ophthalmologist
- Optician
- Optometrist
 - General
 - Developmental
 - Neuro



“Meeting the needs of individual’s
with intellectual disability and
vision loss”





**“It is a terrible thing to see
and yet have no *vision*”**

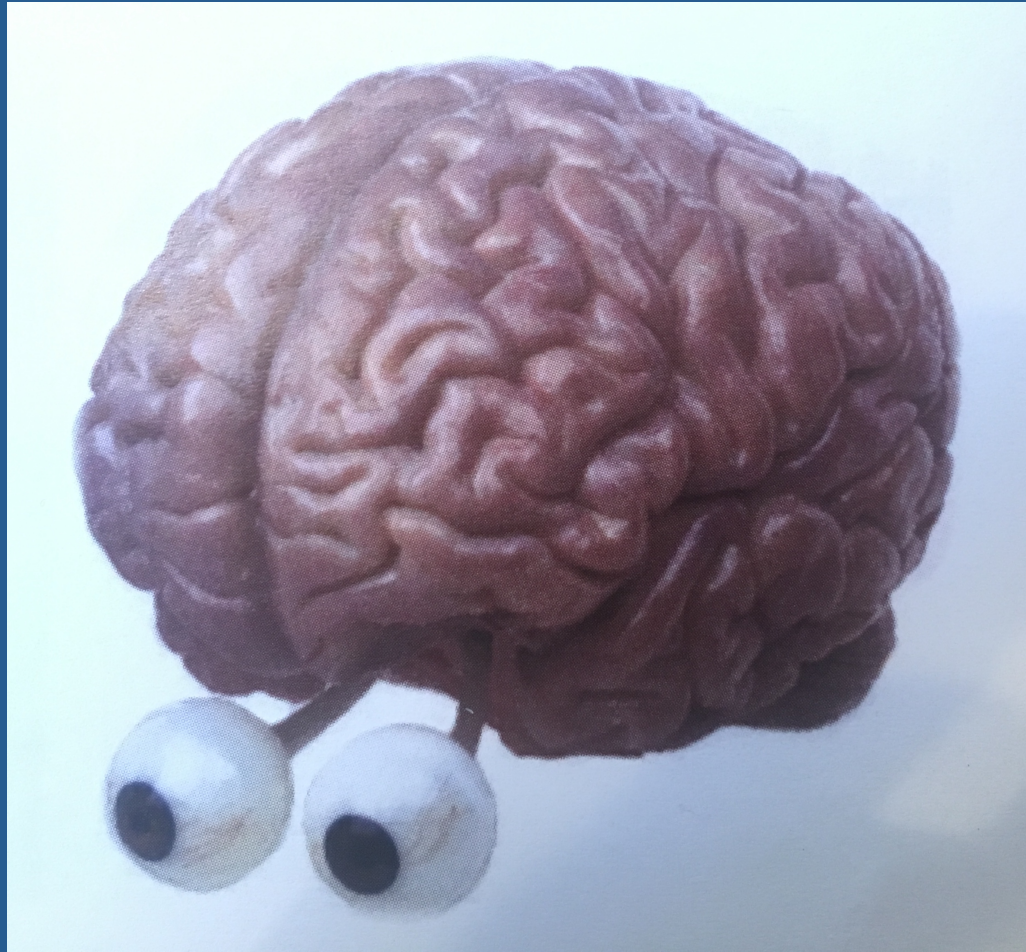
Helen Keller

1880 - 1968

What Does it Mean to See?

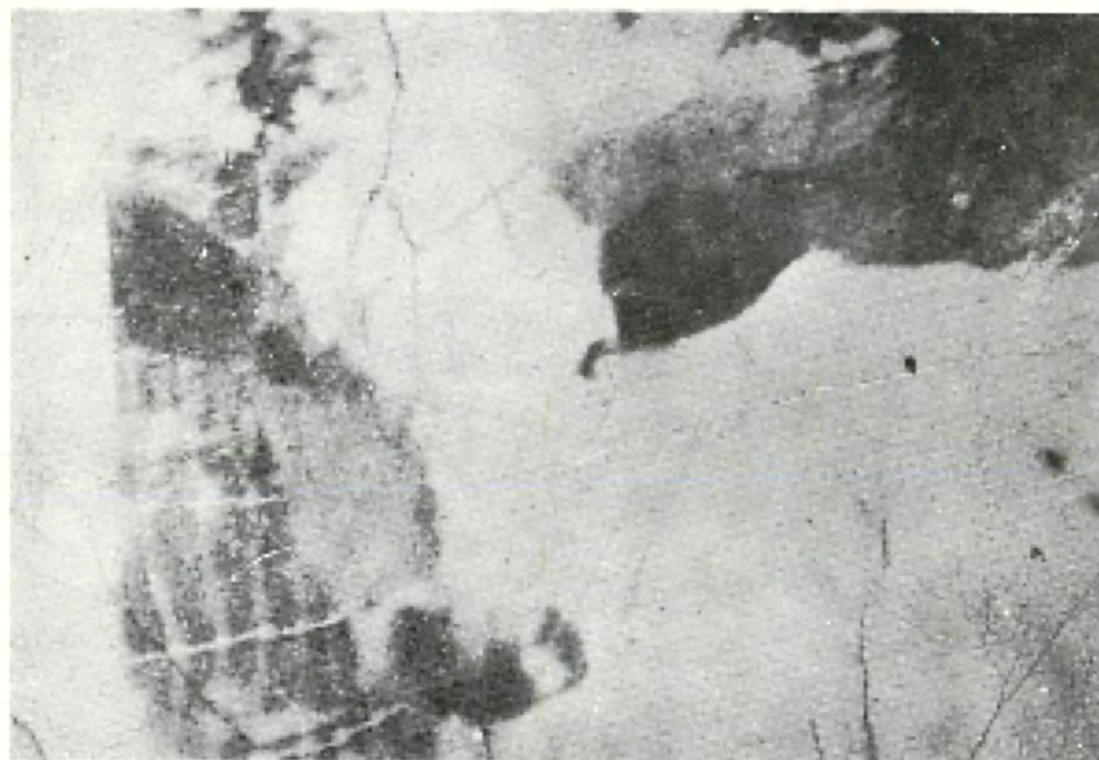


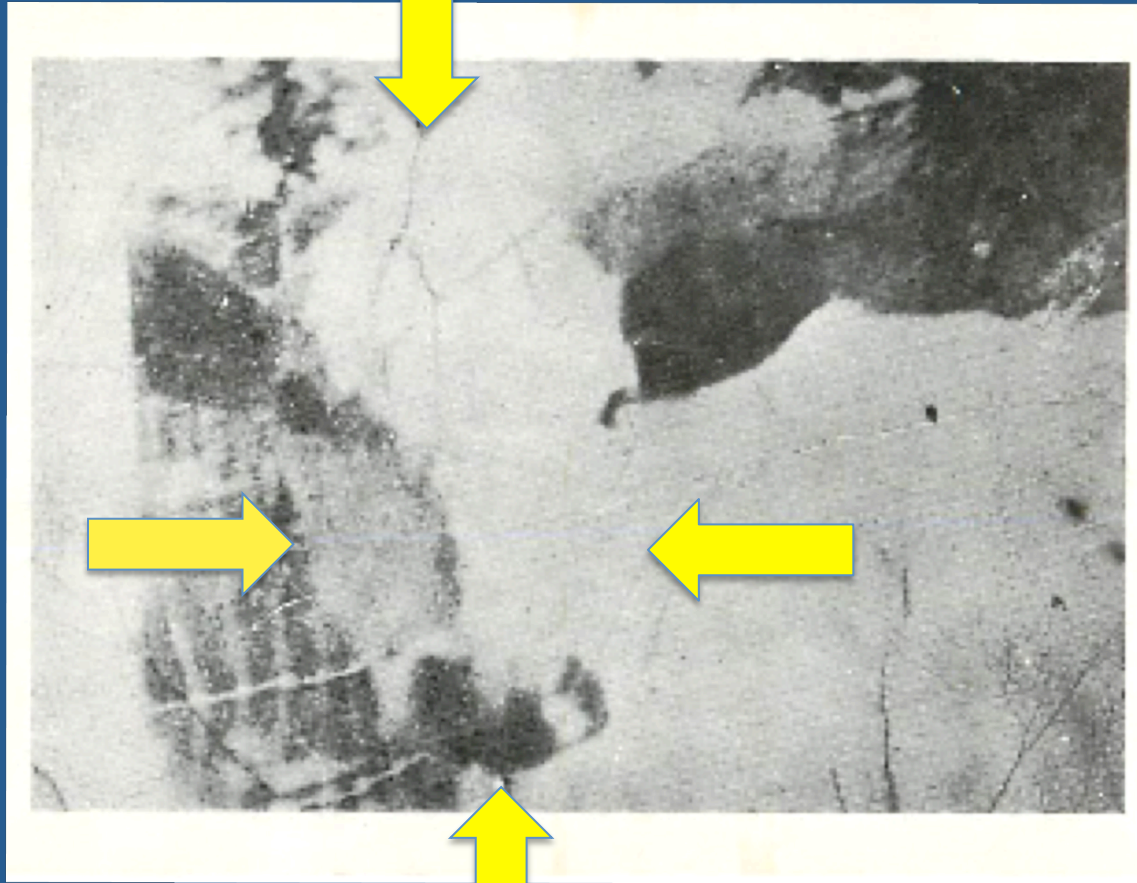
What Does it Mean to Have Vision?

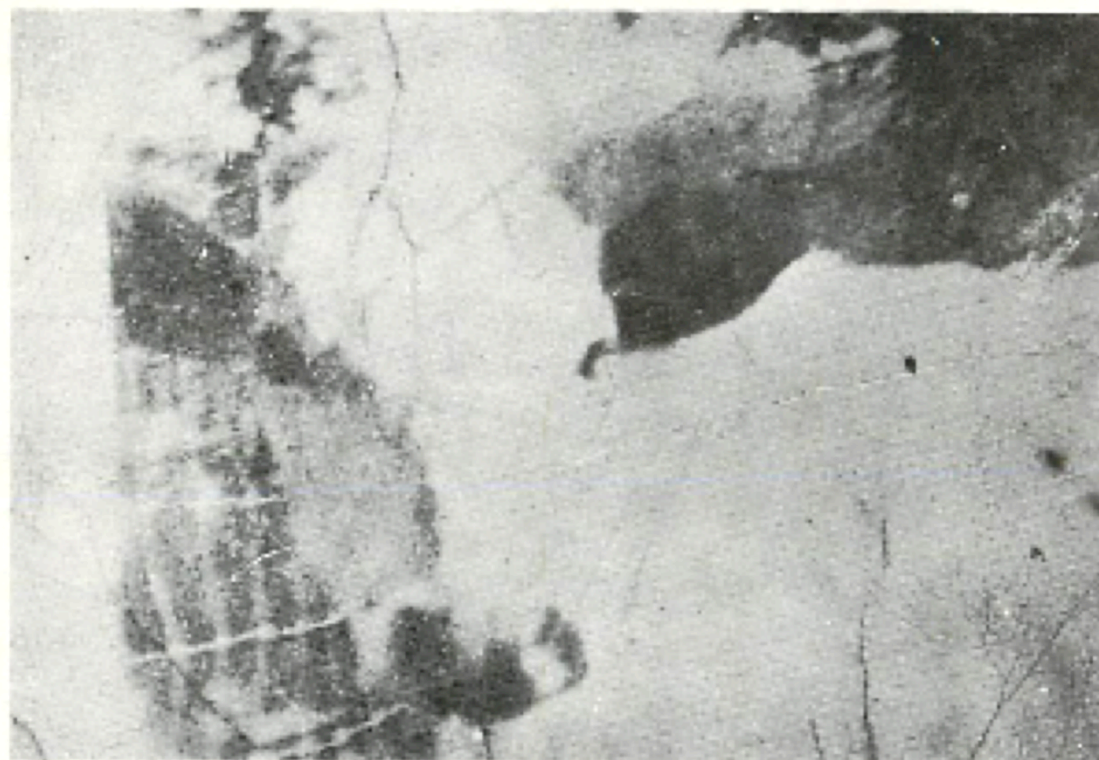




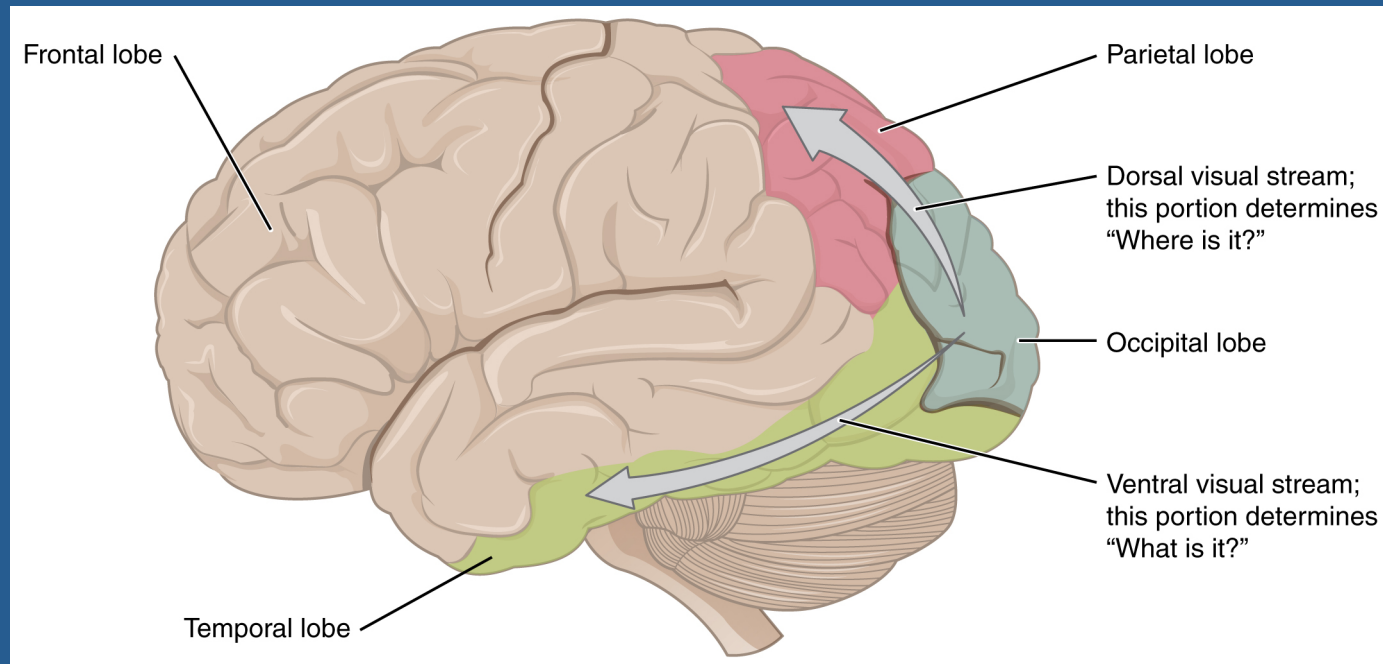
What is it?



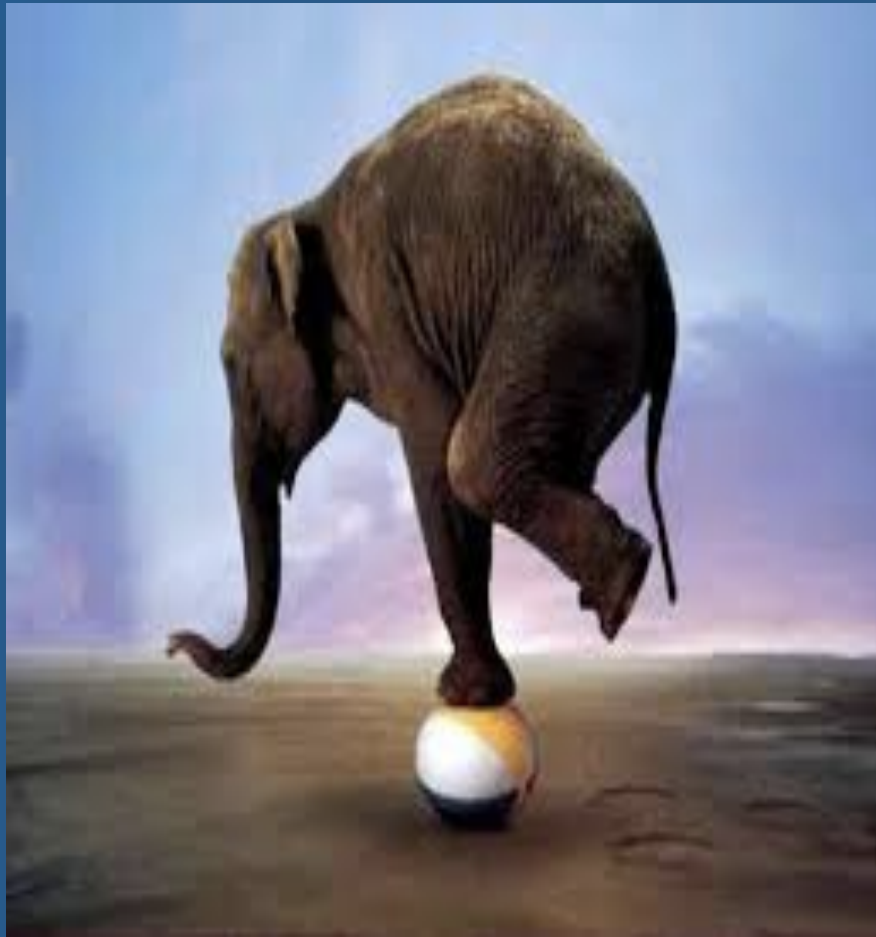




Visual Processing is Bi-Modal



Let's Stand . . .



Visual Input/Efficiency

- Ocular Motility
- Accommodation
- Binocularity



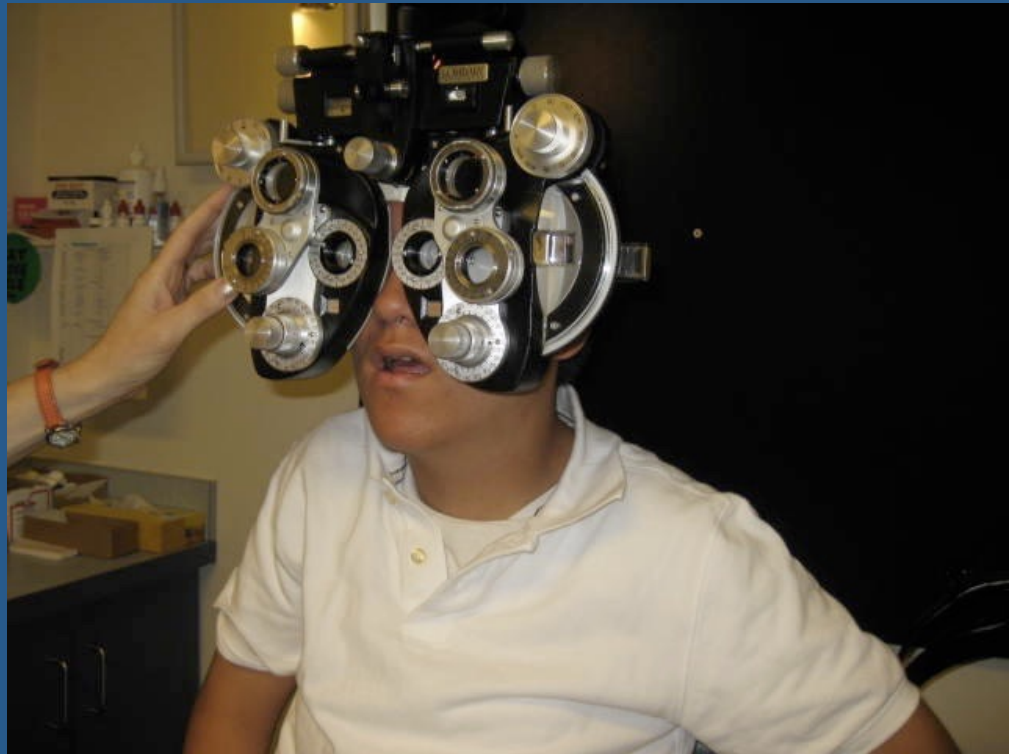
Ocular Motility

- Fixations
- Pursuits
- Saccades



Accommodation

- Amplitude
- Stamina
- Facility



Binocularity

- Strabismus
 - Eso, Exo
 - Hyper, Hypo
- Phoria
 - Eso, Exo
 - Hyper, Hypo
 - Facility



Visual Information Processing/ Integration

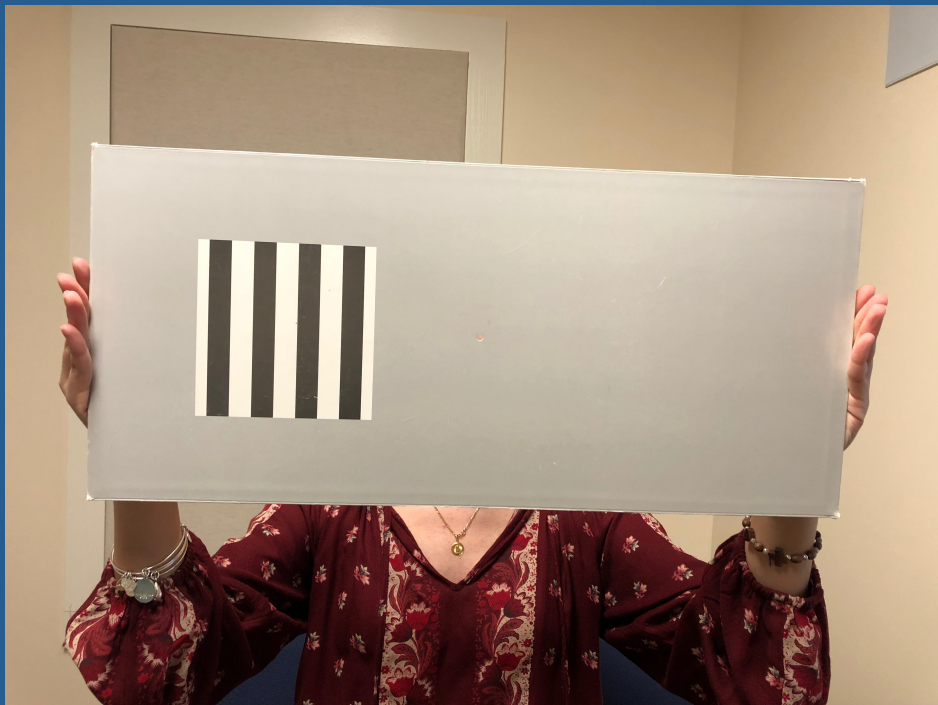
- Group of visual cognitive skills
- Selectively extract visual information from environment
- Integrate visual information with other sensory systems
- Assign meaning/understanding

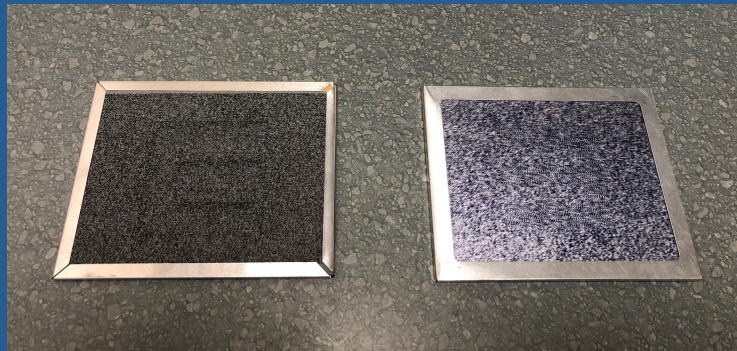
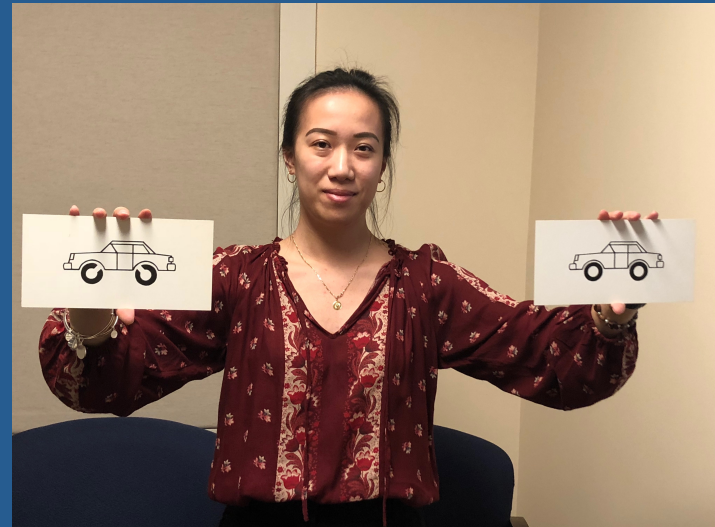
Vestibular Ocular Reflex

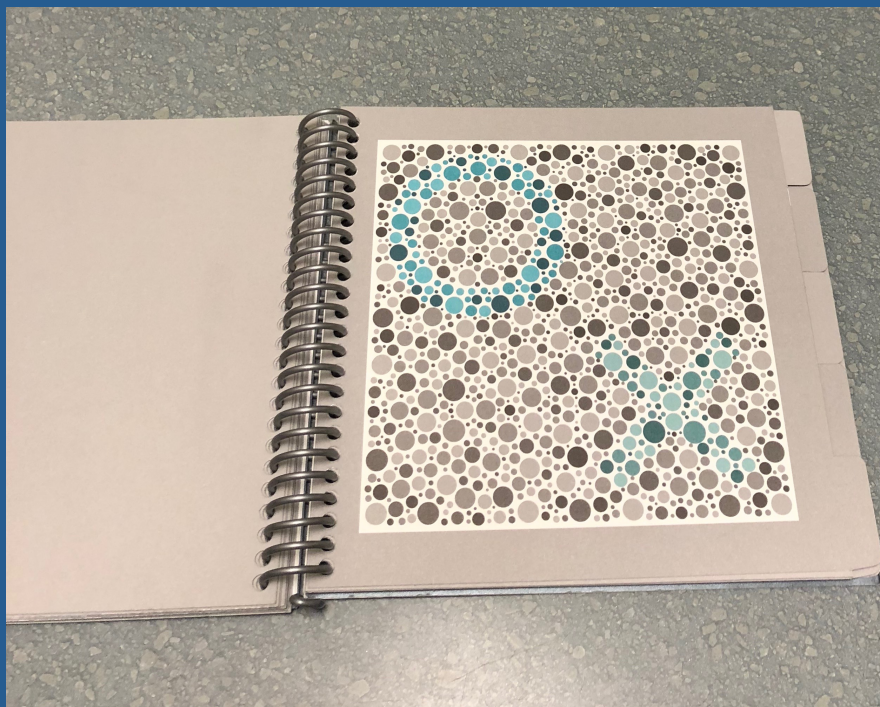
- VOR
- Stabilize gaze
- Balance
- Spatial awareness
- Navigate space safely

Examinations









Neuro-Developmental Assessment

- Functional Visual Fields
- Egocentric Localization/Midline Testing
- Posture/Gait Assessment
- Glare/Light Sensitivity
- VOR Assessment



“Although vision or sight, as a sense, is primarily associated with the eyes, in reality, vision is the product of a complex system of which the eyes are only one part. The processing of visual information – the receipt of visual stimuli through the eyes, its interpretation by various brain centers, . . . has been estimated to involve as much as 40% of the brain. When this process is disrupted, the visual systems of the brain do not consistently interpret or understand what the eyes see, and **visual impairment** is the result.”

-American Foundation for the Blind
website

Visual/Ocular Issues in the Adult Intellectually Disabled Population

- Refractive error
- Accommodative dysfunction
- Ocular motor dysfunction
- Age related eye disease
- Side effects of medications

Medication Side Effects

- Mood stabilizers
 - Tegretol
 - Lamictal
 - Benzodiazepines
 - Valium
 - Xanax
 - Ativan
 - Klonopin

Medication Side Effects Cont.

- Antipsychotics
 - Seroquel
 - Risperdal

Common Eye Deficits

- Cataracts – 9%
- Blepharitis – 17%
- Keratoconus
- Refractive errors – 19%
 - Hyperopia
 - Myopia
 - Astigmatism

Woodhouse et al. J of Intellectual Disabilities
Nov. 2004

Common Visual Input Dysfunctions

- Convergence Insufficiency – 22%
- Accommodative Dysfunction
- Oculomotor Dysfunction – 15%
- Nystagmus – 5%
- Strabismus – 18%

Common Visual Processing Deficits

- Slow cognitive processing = slow perceptual processing
- Focalization
- VOR dysfunction

Down Syndrome

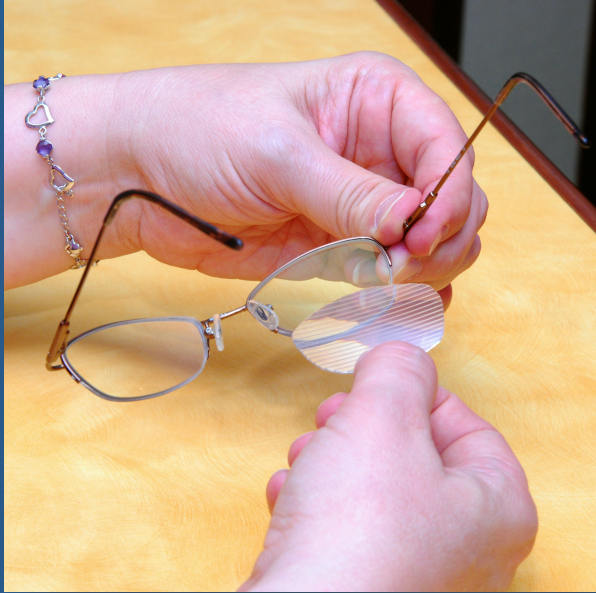
- Refractive Error – 60%
- Cataracts – 18%
- Strabismus – 44%
- Accommodative dysfunction – 55%-76%

J Van Splunder et al. Ophthal.

Vision Habilitation/Rehabilitation

- Lenses
- Prisms
- Optometric Vision Therapy (active)
- Optometric Phototherapy/Syntonics (passive)
- Multi-Sensory Training (active and passive)

Lenses, Prisms, Filters



Diplopia





Optometric Vision Therapy

- How does it work?
- Why does it work?
- Modes of delivery



Optometric Vision Therapy

- Individualized program of therapeutic procedures at appropriate cognitive level
- Office component
- Home component
- Treatment duration





Guiding Principles When Working With ID Population

- Simplify/organize environment
- Work slowly
- Consistency/predictability
- Pair modalities



Parts to Whole Approach









Annie



Virtual Reality

- Increased relevance
- Increased motivation



Collaboration

- Developmental/Neuro Optometrist
- Teachers of the Visually Impaired
- Certified Orientation and Mobility Specialists
- Low Vision Therapists
- Occupational Therapists
- Physical Therapists
- Caregivers
- Employers

Signs and Symptoms of Visual Deficit

- Physical
 - Eye turning in or out
 - Rubbing, squinting or covering an eye
 - Head tilting
 - Hesitation at thresholds, changes in terrain or stairs

- Complaints
 - Headaches
 - Dizziness
 - Nausea
 - Blur
 - Diplopia (double vision)

- Performance
 - Avoids near-point activities
 - Bumps into things, falls, trips
 - Miss reaches for things
 - Poor retention of high frequency people, places or things

Locating a Provider

- Clinics that specialize in treating intellectually disabled (ID)
- Private practitioners that specialize in treating ID

Questions to Ask:

- Do you work with special populations - ID patients?
- Do you assess visual efficiency and functional vision?
- Do you have alternative methods of gathering clinical findings?
- Do you provide optometric Vision Therapy or refer to someone who does?

Organizations/Resources

- College of Optometrists in Vision Development (COVD) - www.covd.org
- Optometric Extension Program (OEP)– www.oepf.org
- Neuro-Optometric Rehabilitation Association (NORA) – www.nora.cc

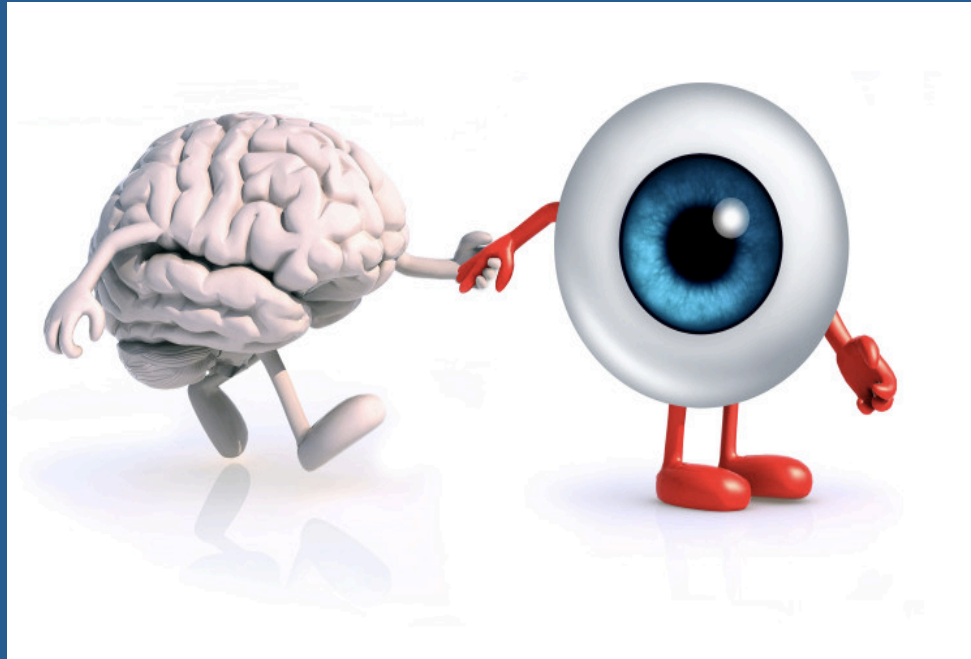
“Vision impairment is a major debilitating condition. If visual problems are not corrected in normal individuals, cognitive and academic activities will decline. Lack of care doesn’t only represent missed opportunity, but may also adversely affect intellectual and social development.”

- D.C. McCulloch

The brain never loses the power to
transform itself on the basis of
experience”

- Richard Restrak, M.D.

Thank You!



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