The Siesta Hut Blog
By: Kimberly Sharpe, OTRL
Occupational Therapist
Eaton RESA

Learning about Vision Therapy

I recently attended a conference about vision therapy. I summarized the following information for a presentation I am giving to my OT colleague's this week. I hope you find this information useful and interesting.

VISION THERAPY CONFERENCE

Interesting Facts:
The goal of vision therapy: clear (20/20) vision, comfortable, single binocular (no double and both eyes seeing the same thing)

Ways to fix lazy eye: patching, surgery, vision therapy and atrophy therapy which doesn’t help encourage binocular vision

Ocular Alignment:
- Exophoria - eye goes out at resting point
- Esophoria - eye goes in at resting point

Infant C = 6-12-month sensorimotor exam for free; 9 months is the best

7 out of 10 juvenile delinquents have vision problems which are affecting performance in the classroom - California Department of Youth Authority

American Optometric Association:
- 1 out of 4 children have an undiagnosed vision problem that interferes with their ability to read and learn
- 60% of children with learning disabilities have undiagnosed vision problems

Components of Vision:

- Oculomotor
  - Pursuits = smooth eye movements
  - Saccades = eyes are jumping while moving
  - Function = reading, sports (tracking a ball)
  - Treatment = word finds, mazes, dot-to-dots, tracing, hidden pictures, letter cancellation, Mardsen Ball

- Binocularity
  - Eye teaming
  - Suppression (shutting 1 eye down)
  - Double vision (both eyes working and moving differently)
  - Function = navigating unlevel ground or stairs; scanning the environment; writing; pouring
  - Treatment = Near/Far GTVT Charts, Red/Green Bar Readers, Red/Green TV Filters, Marsden Ball

- Accommodation
  - The automatic adjustment of the eye seeing at different distances
Amplitude - getting it clear (a problem for farsighted individuals who usually pass the Snellen chart)
Sustenance - keeping it clear (print comes into & out of focus, especially with fatigue
Facility - changing focus from one distance to another
  - Function: ability to take notes in school shifting from whiteboard to notebook; shifting focus from speedometer in the car to traffic signs; ability to read directions on recipe and then setting the time/temperature on oven
  - Treatment = Near/Far Hart Charts

Vergence Skills
- Convergence
  - Required for near work; common to have difficulty with both accommodation and near work
  - Function - sewing; reading a pill bottle; dialing a phone
- Divergence
  - More strenuous/harder than convergence
  - Changing alignment at change in distance; affects how quickly we can change our viewing distance
  - Function - playing board games; measuring ingredients; reading labels at the grocery store
  - Treatment = Flashlight Mazes, Brock String, Aperture Rule

Depth Perception
- Binocular
  - Stereopsis or 3rd degree function
  - Requires 2 eyes working together
  - Brain uses retinal disparity to compare information from 2 different points of view
  - Lack of stereopsis leads to difficulty with coordination
  - Function - driving; stairs; getting into bathtub; pouring liquids

Peripheral vision
- Important in moving about, speeds performance
  - Many times amblyopic (lazy) eye maybe better at peripheral awareness
  - Visual fields overlap
  - Symptoms
    - May look like an eye movement disorder (doesn’t track in certain quadrants)
    - Bumping into things
    - Decreased night vision
    - Spatial insecurity
    - Decreased body image
    - Dry eye & low blink rate
  - Function - riding a bike; sports (balance, awareness of other player while playing sports)

Visual Fields
- Visual field deficit - a partial or complete loss of vision in the central or peripheral range of vision
  - Homonymous hemianopsia
  - Homonymous quadrantanopsia
- Visual neglect - a more severe form of visual inattention, often paired with a visual field deficit
  - Function - walking, driving, riding bike, cooking, shopping, writing
  - Treatment = putting items in the ignored/lost visual field (including people that are talking to them, use activities with a wide field of view

Visual Midline Shift Syndrome
- A neurological event that often corresponds with hemiplegia & hemiparesis
The ambient visual process attempts to create a balance by expanding a concept of space of the unaffected side and compressing the concept of space on the other side.

- The individual will lean or tilt their head away from the neurologically affected side.
- Yoked prisms can move the image to midline.

### Visual Perception and Processing

- Visual information and processing speed
- Figure ground perception
- Visual closure
- Form constancy
- Size and shape discrimination
- Visual memory
- Treatment = beading tasks, pick up sticks, yard games, interactive video games, pattern play, hidden pictures, mazes, dot-to-dots, word searches, cutting tasks

### Things to look for when there may be a vision issue:

- Headaches
- Dizziness
- Double vision
- Fatigue
- Difficulty reading (errors, decreased speed, loss of place)
- Red, sore, itchy eyes
- Jerky eye movement, one eye moves in or out more than the other
- Head tilt or covering one eye when reading
- Avoiding near work
- Low self esteem
- Temper flare ups/aggression/irritability
- Vertigo