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**VISION SKILLS IN THE CLASSROOM
VISION DEVELOPMENT, ADHD, DYSLEXIA**

April 26, 2016
Westlake, Ohio

Visual Skills in the Classroom

- Visual Input
- Visual Processing
- Symptoms that may occur if problems with Visual Skills

Vision is more than 20/20 eyesight!

Clear Vision

The following is some text for you to read using the sliding overhead technique. Many people will respond, “No” to the question, “Do you ever see two whole books?” when asked this directly. They seem to ignore the fact that in cases of binocular instability we are looking

Double Vision

The following is some text for a sliding overhead technique. We will respond, "No" to the question asked this directly. They see "Do you ever see two who be binocular instability we are looking

Visual Input

- Focusing
- Converging/Diverging
- Saccades

Focusing (aka – accommodation)

- Crystalline lens inside the eye must change shape to see clearly


Converging/Diverging

- Eyes must both point at the same exact spot in order to see single

Saccades

- Eyes must be able to accurately jump from object to object

“In an old house in Paris that was covered with vines
lived twelve little girls in two straight lines.”



Eye Tracking Skills



VISION IS LEARNED-EXPERIENCE IT

ce ad se ent si wa nr to mo gn m . Ca au l
ro er ut s ht ay re et of ne id or st an s ip
fo ou t t h l s e m t s ht ay re et of ne id or st an s ip
ot to o y t h l s e m t s ht ay re et of ne id or st an s ip
demovengiseed sa we es sic rre xe d s i h t
ngiveyouarrwees sic rre xe d s i h t
iseed sa we es sic rre xe d s i h t
youdarrwees sic rre xe d s i h t
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p sic rre xe d s i h t



Visual Processing

- Right/Left reversals
- b/d/p/q confusion
- Visual memory

Symptoms that relate to decreased visual skills

- Headaches
- Double Vision
- Blurry Vision
- Fatigue
- Avoidance of schoolwork
- Skipping lines
- Words move/jumping on page
- Taking longer to complete assignments than expected
- Knowledge \neq school performance

Treatment Options

- Optometric Vision Therapy
 - ▣ Doctor supervised
 - ▣ In office and home therapy
 - ▣ Develops Visual Skills NOT muscle strength



The **VISION** Development Team

Alexandar Andrich, OD, FCOVD

VISION DEVELOPMENT, ADHD, DYSLEXIA

Connecting for Kids

April 26, 2016

Westlake, Ohio

Arnold Gessell, MD

“To understand the child one must understand the child’s vision.

To understand the child’s vision, one must understand the child.”





20/20 Vision

- ❑ Vision plays a critical role in our learning, working, and recreation.
- ❑ Vision is more than just having 20/20 eyesight.
- ❑ Vision is the ability to take in information through our eyes and process the information so that it has meaning.



Vision Deficits

- ❑ Vision deficits can easily be missed because:
 - ❑ Physical deficits are overt
 - ❑ Speech deficits are overt
 - ❑ Vision deficits can be overt or COVERT





Normal Development of Vision Skills



Jerry Myers, OD

- ❑ Without the proper experiences, vision fails to develop in its role of guiding and directing behavior.





- Good development results from having the appropriate experiences at the appropriate times.



When is Vision Passive?

When is Vision Directing Movement?

- ❑ A toddler walking on flat surface?
- ❑ A toddler walking in the field?



Children's Vision Development

- ❑ Vision development begins at birth & visual skills are learned skills.
- ❑ Newborns have all the eye structures necessary to see, but they haven't learned to use them yet.



Children's Vision Development

- ❑ Babies spend much of their early weeks and months of life learning how to see-- developing such skills as focusing, teaming their eye movements, recognizing depth, developing eye-hand coordination, and making spatial judgments.
- ❑ As the child grows, more complex skills, such as visual perception, develop to meet the child's growing need to understand and interpret his world.



Birth to Four Months

- ❑ Newborns can see patterns of light and dark and shades of gray.
- ❑ Newborns can only focus eight to twelve inches, much of their vision is blurred.
- ❑ Focusing develops by looking at faces and then gradually moving out to objects of interest brought near them.



Birth to Four Months



- ❑ When infants begin to follow moving objects with their eyes, tracking and eye teaming skills start to develop as they begin to learn to coordinate their eye movements.
- ❑ Soon they start to reach for objects, the beginning of eye/hand coordination.
- ❑ By four months of age, babies can see full color.



Four to Six Months



- ❑ At this age they are able to reach and grasp at objects freely.
- ❑ By the fourth or fifth month, babies' brains have finished learning how to fuse the pictures coming in from both their right and left eyes into a single image for full binocularity, or "two-eyed" vision with strong depth perception.

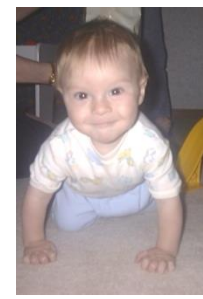


Four to Six Months



- ❑ Babies develop eye/body coordination and learn to control their own movements in space as they learn to push themselves up, roll over, sit, and scoot.
- ❑ Spatial and dimensional awareness continue to improve as baby learns to aim accurately when reaching for objects of interest.





Six to Eight Months

- ❑ Eye teaming and focusing skills are refined as they learn to look quickly and accurately between near and far distances.
- ❑ Normal visual acuities, or a child's sharpness of vision, has usually developed to 20/20 by the time the child reaches six months.
- ❑ As babies begin crawling they learn to judge distances and set visual goals (seeing something and moving to get it!)



Six to Eight Months

- Their sudden freedom allows for many new experiences and the rapid development of visual perception skills as babies experience their own bodies in relation to other objects and notice differences in size, shape, and position.



Eight to Twelve Months

- ❑ Babies can now judge distances well.
- ❑ Eye/hand/body coordination allows them to grasp and throw objects fairly accurately.
- ❑ Perception skills such as visual memory and visual discrimination help babies make sense of their exciting new world.



Eight to Twelve Months

- ❑ The integration of their vision and fine motor coordination allows babies to manipulate smaller objects, and many begin feeding themselves with finger foods.
- ❑ Once children start walking, they learn to use their eyes to direct and coordinate their bodies' large muscle groups to guide their whole body movements.



Toddlers and Preschoolers (2 to 5 years)

- ❑ In the preschool years the child develops visually guided eye-hand-body coordination and the visual skills necessary to learn to read.



Toddlers and Preschoolers (2 to 5 years)

- ❑ Before the age of two, he or she learns to walk and coordinate physical movements of large muscle groups and begins to develop the fine motor skills needed for schoolwork.



Toddlers and Preschoolers (2 to 5 years)

- ❑ The development of eye/hand/body coordination, eye teaming, depth perception, and tracking, will continue to develop throughout childhood
- ❑ Stacking building blocks, rolling a ball back and forth, coloring, drawing, cutting, or assembling lock-together toys all help improve these important skills.
- ❑ Reading to young children is important. They develop strong visualization skills as they "picture" the story in their minds.



School-Aged Children (5 years and up)

- ❑ It is important for children to have a complete eye examination before starting school.
- ❑ The optometrist needs to determine if a child's vision system is adequately prepared to handle reading, writing and other close work.
- ❑ The demands of schoolwork can put stress on a child's visual system causing problems even if none existed before.



School-Aged Children (5 years and up)



- ❑ Whereas toddlers use their eyes mostly for looking at distance, school requires children's eyes to focus on very close work for hours every day. This can cause eye problems to arise.
- ❑ Children don't often realize that their eyes are under too much strain, and they rarely report vision problems.
- ❑ Their vision is "normal" to them, they think everyone sees the way they do.



Eye Exam Schedule

- ❑ 6 months
- ❑ Age 3
- ❑ Age 5
- ❑ Annually thereafter



InfantSEE Program

- ❑ No Cost
- ❑ Comprehensive Eye Exam
- ❑ Before 1st Birthday



Vision Screenings

- ❑ Vision Screenings provide a valuable service, but children can pass an eye chart test and still have undetected vision problems that can affect their school work.



Learning Related Vision Problems

- ❑ Among school-age children, vision disorders affect 1 in every 4
- ❑ 75% - 93% of all children diagnosed under PL 94-142 in the U.S as LD, ADD, ADHD, etc.
- ❑ 93% - 95% of all Juvenile Delinquents



Learning Related Vision Problems

- ❑ Vision problems not only affect an individual's ability to perform tasks, but it can also affect his/her self-esteem
- ❑ There is a high correlation between vision deficits and disabilities



ADHD

- Convergence Insufficiency
- Accommodative Dysfunction



Dyslexia

- Is defined as an inability to read despite normal intelligence and adequate instruction and opportunity to learn.
 - ▣ Deficit in rapid automatic naming
 - ▣ Deficit in phonological analysis
 - ▣ Poor spelling
- Vision skills can be the missing link
 - ▣ Saccades
 - ▣ Spelling – is a visual skill!
 - 2000 ways to write 44 English sounds



Spelling Fun

Ok – Let the fun begin!

Pronounce the word:

ghoti

Spelling Fun

- The “f” sound of “gh” from “tough”
- The short “i” sound of “o” in “women”
- The “sh” sound of “ti” in “station”

ghoti = fish

Spelling Fun

Too easy? How about:

ghoughphtheightteau

Spelling Fun

Does this help?

gh-ough-phth-eigh-tte-eau

Spelling Fun

- Would you believe **POTATO**?
- **P** – sounds like the **Gh** in **hiccough**
- **O** – sounds like the **OUGH** in **dough**
- **T** – sounds like the **PHTH** in **phthisic** (a disease associated with tuberculosis)
- **A** – sounds like the **EIGH** in **neighbor**
- **T** – sounds like the **TTE** in **statuette**
- **O** – sounds like the **EAU** in **beau**

Thank you to George Bernard Shaw

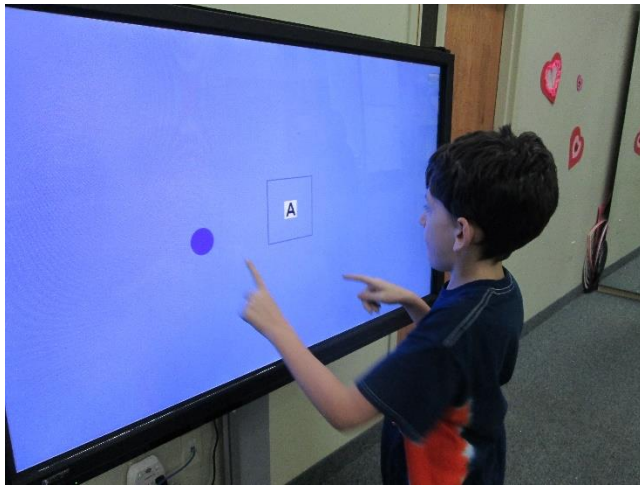


Take Home Messages

- Vision goes beyond 20/20 eyesight
- Ask: Is vision helping or interfering with this student's education?



Vision Therapy in Action



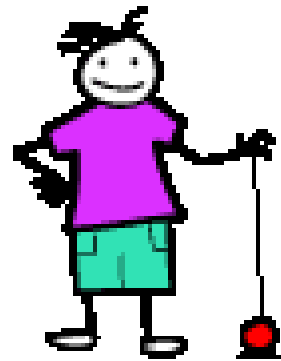
Resources

www.covd.org

www.oepf.org



Time for some Q & A!



Thank You!

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