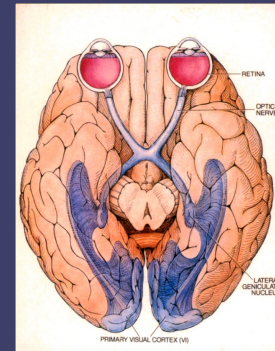


Brain Injury:

Vision Rehabilitation



Causes



Trauma

CVA

Chemical
exposure

Neurologic
disease

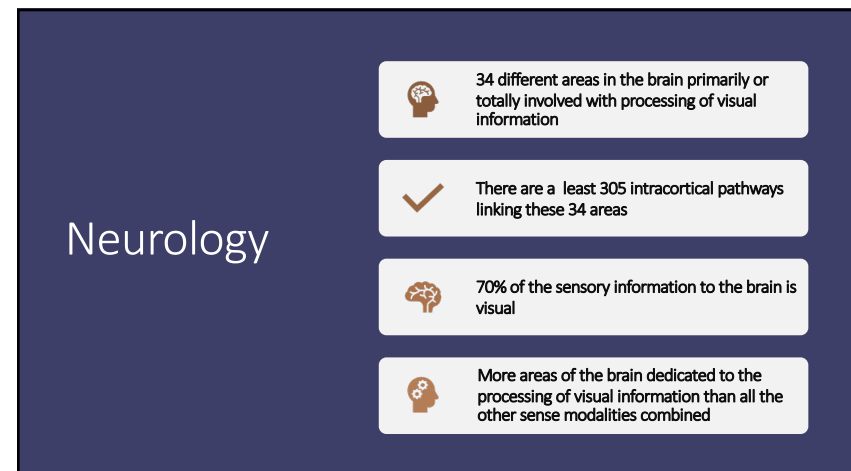
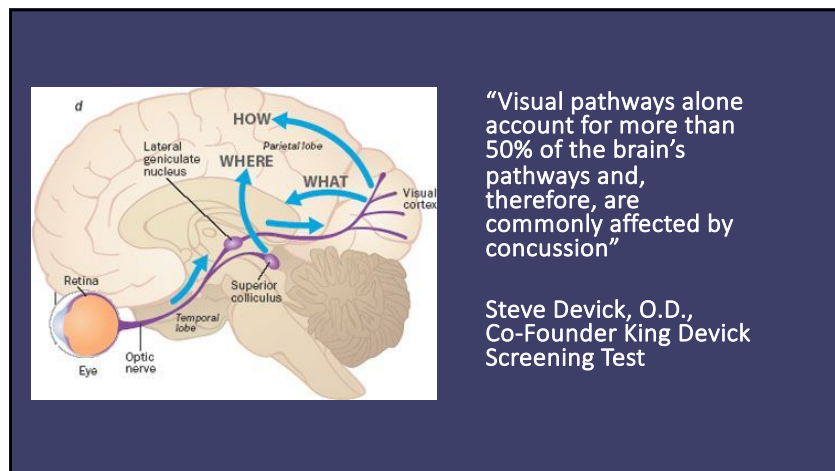
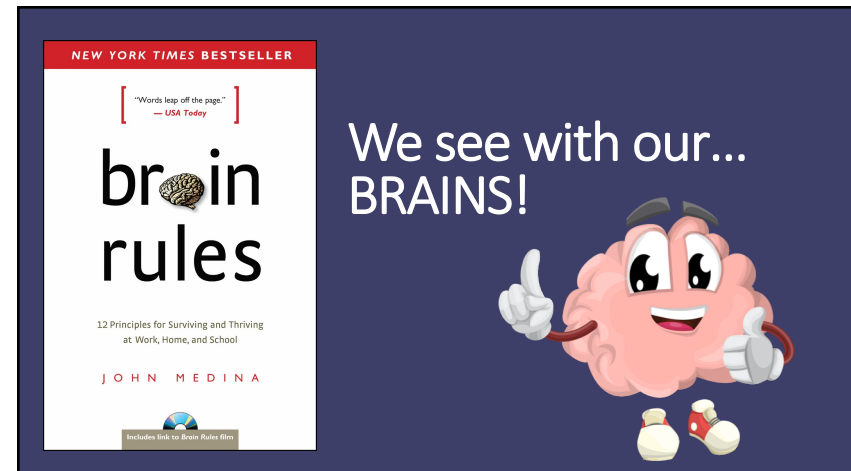
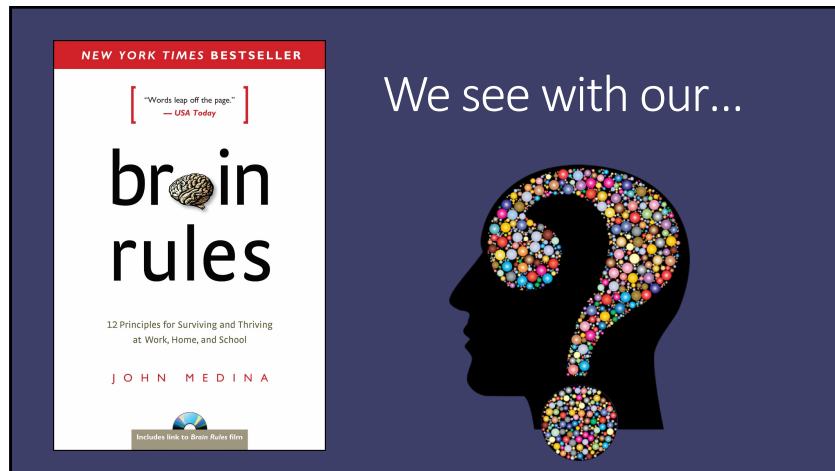
Lesions

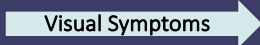
Prevalence

- Estimated 2.5 million people sustain a TBI annually (CDC 2014)
- Females athletes had 1.4 x higher injury rate for concussion than male athletes (Journal of Athletic Training 2016)
- 53% of patients had persistent impairment after 12 months (JAMA Neurology 2019)



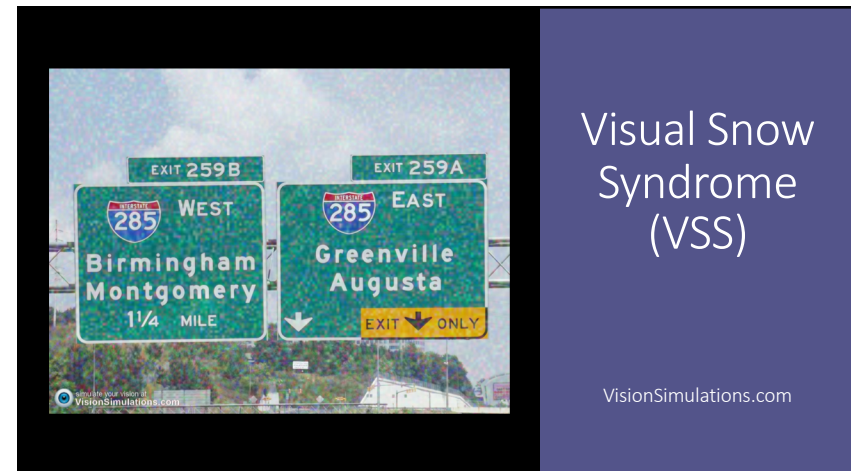
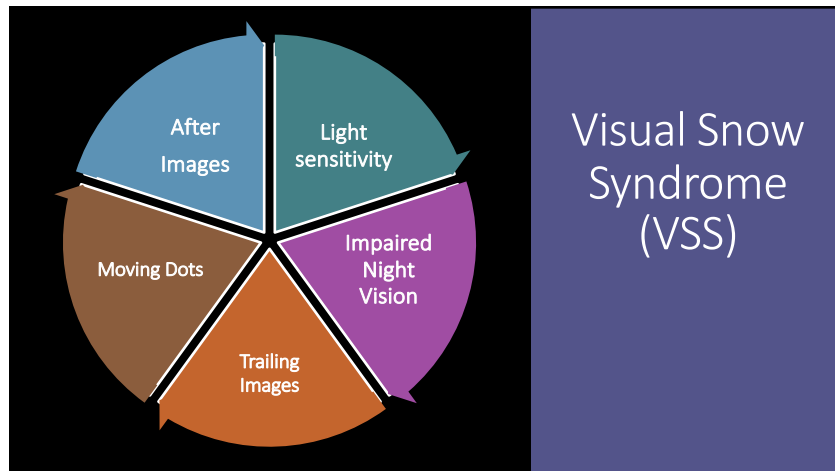
Sports Concussion:
The public health issue of our time.





The consumption of soft drinks by American youth is increasing. National dietary surveys show that carbonated soft drink consumption more than doubled in youths aged 6 to 17 from about 5 ounces per day in 1977-78 to 12 ounces in 1994-98, the most recent years for which national data is available. Adolescent boys' soft drink consumption more than tripled during those years.

There are at least two negative results to this soft drink explosion. First, the use of soft drinks is likely related to the rise in childhood obesity. A variety of studies suggest that we don't eat fewer calories from other sources when we increase calories from beverages. If a child drinks 9 to 10 ounces of a soft drink, that's equivalent to almost 120 calories.



What does a convergence insufficiency patient reading look like (top, bottom post VT)?

Before the 1940s, men relied on single shot rifles, and slow loading cost many lives during Indian raids. Samuel Colt was fascinated with guns in his youth. While working on board ship, Colt whittled a model of a "revolver" which could shoot five times without reloading. It is said that the ship's wheel was the inspiration for the revolving shell chamber. His first factory made many five-shooters but it failed due to poor manufacturing methods. At the start of the war with Mexico, the U. S. Army ordered one thousand revolvers. It was then that the six-shooter was manufactured. The six-shooter was called "the gun that won the West."

Courtesy of Dr. Patrick Quaid, MCOptom, FCOVD, PhD

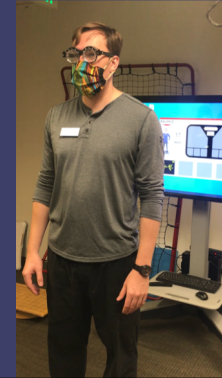
Born Erich Weiss in 1874, he took his professional name from the French magician, Houdini. No lock or straight jacket, no handcuff or sealed chest could restrain Harry Houdini. To secure publicity, he would vanish from the prison of each city where he appeared. A modest man, he performed his tricks with apparent ease, stating that they were based on natural laws. He was angered by mediums and others who claimed to have supernatural power, and spent much time and energy in exposing such frauds. An authority on magic, he willed his collection of writing to the Library of Congress. It is one of the most complete in the world.

Visual Midline/Spatial Processing

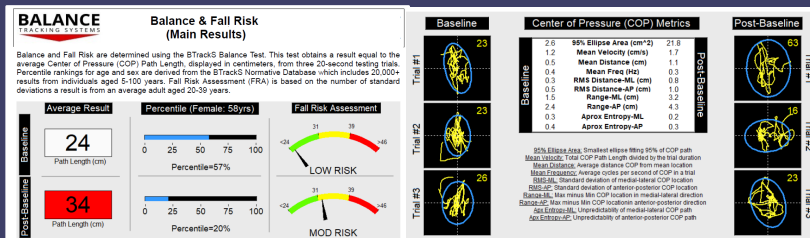
- Neuromotor difficulties:
 - balance/ coordination/ posture
- Shift in visual midline
- Lean to side, forward or backward
- With hemiparesis?



Midline/Balance Evaluation



Midline/Balance Evaluation



What's the Solution?



Occlusion

Lenses/Prisms

Rehabilitative Vision Therapy



Lenses/Prisms

[PRISM VIDEO](#)

GOALS IN PRESCRIBING:

Refractive

Focus

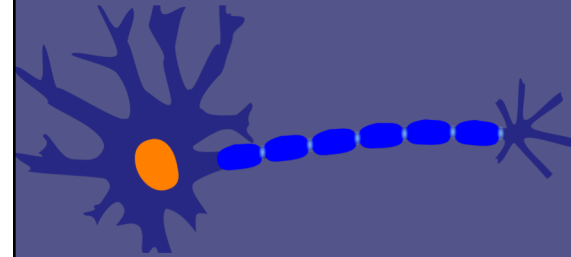
Spatial

Binocular

Rehabilitative Vision Therapy



Rehabilitative Vision Therapy



Neurons that fire together...



WIRE
TOGETHER

Vision Rehabilitation



Our goal is to remove the
visual barriers...

To make visual tasks,
(reading, driving, moving)
effortless.

Reduction in Sports Concussion

Article ▶ An Exploratory Study of the Potential Effects of Vision Training on Concussion Incidence in Football

Joseph F. Clark, PhD, ATC, Department of Neurology & Rehabilitation Medicine,
University of Cincinnati, Cincinnati, Ohio

Results: During the 2006-2013 pre- and regular football seasons, there were 41 sustained concussion events reported. The overall concussion incidence rate for the entire cohort was 5.1 cases per 100 player seasons. When the data were evaluated relative to vision trained versus referent untrained player seasons, a statistically significant lower rate of concussion was noted in player season in the vision training cohort (1.4 concussions per 100 player seasons) compared to players who did not receive the vision training (9.2 concussions per 100 player seasons; $p < 0.001$). The decrease in injury frequency in competitive seasons with vision training was also associated with a concomitant decrease in missed play time.

Discussion: The current data indicates an association of a decreased incidence of concussion among football players during the competitive seasons where vision training was performed as part of the preseason training. We suggest that better field awareness gained from vision training may assist in preparatory awareness to avoid concussion-causing injuries. Future large scale clinical trials are warranted to confirm the effects noted in this preliminary report.

We are gathering support!

Vision Therapy and Traumatic Brain Injury

Eric Singman MD PhD

Milton & Muriel Shurr Director, Wilmer General Eye Services Clinic
Johns Hopkins Hospital, Wilmer B-29, 600 N. Wolfe St., Baltimore, MD



TBI³, current evidence supports a multidisciplinary program⁶. As with any large team endeavor, co-ordination of responsibilities is necessary for success⁷. Among the critical members of this team, there should be vision specialists dedicated to working with patients who demonstrate deficiencies in eye teaming, loss of visual acuity and/or visual field as well as uncoupling of "visuospatial awareness". For the most part, the optometric and neuropsychological communities have embraced visual rehabilitation efforts; notably, these providers have documented successes in helping brain injury patients improve their quality of life^{8,9,10,11,12,13}.

With permission: Excerpt from Dr. Patrick Quaid's book: "Seeing is Behaving"



SUMMARY

Vision is in the brain

Vision impacts balance, posture,
visual processing

There are successful rehabilitative
vision SOLUTIONS!!

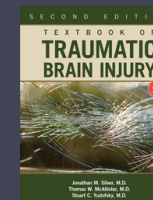
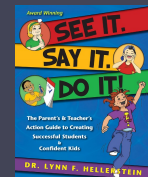
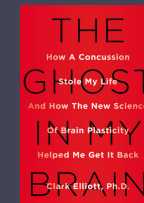
Resources:

LynnHellerstein.com

COVD.org

Noravisionrehab.org

biacolorado.org



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THANK YOU FOR ATTENDING!



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