

The Face of Vision Rehabilitation- What is the Current Status

Panel
 Dr. Eric Ikeda - neuro optometric rehabilitation
 Dr. Janis Winters – low vision rehabilitation

Moderator
 Dr. Carl Garbus

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Neuro Optometric Rehabilitation

Where are we now?
 Where do we hope to be?

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IN THE PRACTICE

5 WAYS TO OFFER NEURO-OPTOMETRIC SERVICES IN YOUR PRACTICE

What does it take to start a winning neuro-optometric practice? Three doctors of optometry call the plays.

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Objectives

- ✓Present common assessment strategies
- ✓Discuss mild & complex cases
- ✓Determine when it is appropriate to refer for advanced care: Primary eye care vs referral for neuro optometric consultation
 - ✓“know your limitations” or better, how to improve your skills
- ✓Communicating with and working within the rehabilitation team

Vision

- A significant, but frequently overlooked link in rehabilitation
 - Physical and speech deficits overt
 - Vision deficits overt or covert
 - e.g. reduced visual acuity understood, but not vision

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Leading Causes of Traumatic Brain Injury

▪ Falls	28%
▪ Motor Vehicle Accidents	20%
▪ Assaults	11%
▪ Other / Unknown	22%

TBI Consequences

- Physical
 - Headaches
 - Balance difficulties
 - Double vision
 - Paralysis
- Cognitive
 - Short term memory loss
 - Slow information processing
 - Difficulty multi tasking
 - Difficulty with visual spatial orientation & organization
- Emotional
 - Depression
 - Anxiety
 - Denial

What to expect...

- Referral to your practice for “vision consultation” to evaluate:
 - Reduced VA (distance and/or near)
 - Poor “tracking”, saccades
 - Reduced depth perception
 - Reduced peripheral field
 - Reduced visual perceptual skills

Examination strategy

- Comprehensive vision examination
 - Case history, goals
 - Visual acuities
 - Refraction
 - Binocular testing (fusion)
 - EOM
 - Cover testing
 - NPC
 - Pupils
 - Visual fields
 - Ocular health (IOP, SLE, DFE)
- Supplemental testing (to screen or determine if a deficit exists for referral)
 - Visual midline
 - Visual spatial
 - Motor (screen for retained primitive reflexes)
 - Auditory visual motor (IM)

Simple/mild case

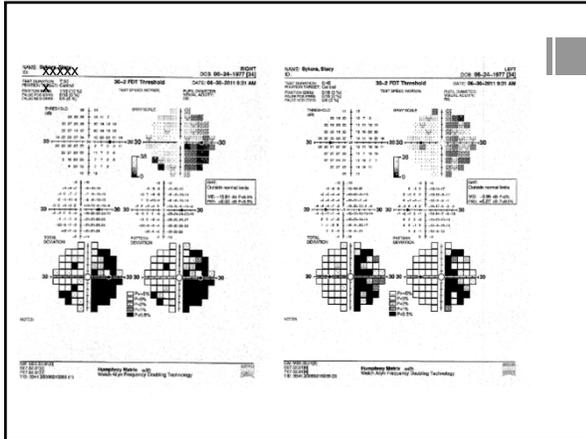
- KA, 15 yo female, s/p concussion; referred by a primary care optometrist, colleague, father; evaluated by Pediatrician/Sports Medicine

Complex case

- SS, 34 yo female Olympic volleyball player who sustained a traumatic brain injury in Brazil that resulted from an accident while she was travelling as an unrestrained passenger on a team bus on 4/12/2011
- Reports that she is aware of her visual deficit and that she must continually scan her environment and remain vigilant in her scanning to maintain safety and situational awareness.
- SS reports that she continues to have difficulty with reading; headaches have resolved (premorbid hx of migraines); no falls, memory has improved, tries to cope with her deficits.
- Reports that in practice, she sometimes tends to miss the balls, had been hit in the face.

In patient consultation

- Bedside assessment
 - History: chart review
 - Visual acuities: ~20/20 each eye
 - Ocular motilities: full & symmetric
 - Confrontation fields revealed a right field cut
 - PERRLA (-APD)
 - External/internal ocular health unremarkable



In-Patient therapy recommendations

- Directed therapy activities in occupational and physical therapy
- Scanning (static and dynamic)
- Dynavision
- Yoked prism (field expansion vs disruption of performance)

Vision Therapy (collaboration w/ OT service)

- Bean bag toss back/Balance board
- Wayne Saccadic Fixator
- Yoked prism (dynamic)
 - Visual spatial concepts, rather than simply increasing awareness of the affected field
- Collaboration with trainer
 - Trainer had regularly attended SS's therapy sessions
 - Input on skill level, feedback on current level of compensation

Current Status

- SS continues to drive and live independently, and practice with the team, but did not achieve her goal of qualifying to travel with her US Volleyball team
- She was asked to rejoin/play for the Brazilian team.
- Although SS was urged to continue her therapy, she chose to rejoin team Brazil and promised to return to complete her therapy and was instructed to return for periodic monitoring of her progress
- Latest news: retired from Volleyball (2013)

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When to refer

- "know your limitations"
 - e.g. addressing strabismus, visual spatial deficits, visual motor perceptual
- Learn more and develop your skills
 - AOA VRC
 - COVD, NORA, OEP

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The rehabilitation team

- Nurse Case Manager
- Neurologist
- Physical Medicine & Rehabilitation Physician
- Occupational Therapist
- Physical Therapist
- Speech Therapist
- Chiropractor
- Dentist
- Attorney

Collaboration Between Occupational Therapy and Neuro Optometry

Best practice:

- OT identifies vision impairments affecting function
- OT shares results and affect on function with OD
- OD assesses patient and assists with treatment plan
 - Lenses, prisms, occlusion strategy, filters
 - Assists OT with treatment planning, identifying areas to address in treatment
- Follow up as needed
 - Vision is dynamic and should be changing!
 - Need for update and continued collaboration

The Future for Optometry

- Coordinated research with colleagues and other rehabilitation professions of tbi clinics and hospitals to develop fast and effective means of evaluating and treating tbi
- Further collaboration with the rehabilitation team using evidence based treatment to improve outcomes

The Face of Vision Rehabilitation- What is the Current Status

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Low Vision Rehabilitation Present Trends

- Advancement in technology of low vision devices
- Tablet and smart phones
- Computer
- Head mounted instruments
- Low vision and technology
- Shift toward multi-disciplinary approach
- Implantable miniature telescopes
- Retinal implants

Disclosure

- None

Advancement in technology of low vision devices

▪ Electronic magnification

Optelec
Eye Care Solutions

ESCHENBACH
enhanced vision

MagniLink S Premium

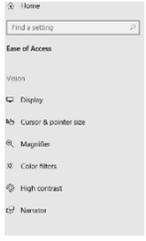
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Computer

- Microsoft 10



The image shows the Windows 10 'Ease of Access Center' settings menu. It includes options for Vision, Display, Cursor & pointer size, Magnifier, Color filters, High contrast, and Narrator.

Computer

- JAWS



The image shows the JAWS website homepage, featuring the JAWS logo and navigation buttons for 'Simple navigation' and 'Download Now'.

Computer

- Mac



The image shows a Mac laptop screen displaying a website with various accessibility overlays, including a 'CHINESE' text overlay and a 'Voice Over' control panel.

Head mounted instruments

- Iris vision
- Jordy



The image contains two screenshots. The top one shows the 'Iris vision' website with the headline 'The World's Most advanced, Award-Winning Low Vision Solution'. The bottom one shows a person using the 'Jordy' head-mounted device, with a URL: <https://www.ariaaccess.com/low-vision-gemtech-isa-jordy.html>

Head mounted instruments

- eSight
- Or-Cam



The image contains two screenshots. The top one is from the eSight website with the headline 'What Can I Do With eSight?'. The bottom one is from the OrCam website with the headline 'Advanced. Thinkable. As devices for the blind, OrCam devices are the most advanced and most effective... Thousands of OrCam Users Across the World, Helping to Overcome Their Challenges and Improve Their Independence.'

Low vision and Technology

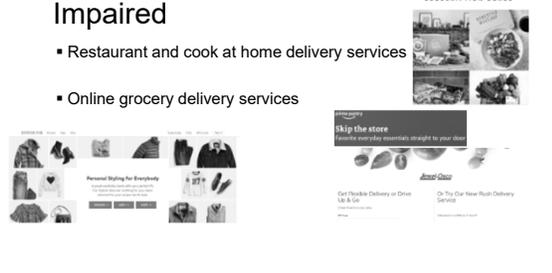
- Digital assistants
 - Apple Siri
 - Iphone, mac, watch, homepod
 - Amazon Alexa
 - Tell me about my day.
 - How do I cook a dish?
 - Smart home
 - More than 1000 devices



The image shows a screenshot of the Alexa Skills website, listing various skills such as 'Business & Finance', 'Education & Reference', 'Food & Drink', 'Games & Trivia', 'Health & Fitness', 'Home Automation', 'Kids', 'Lifestyle', 'Local', 'Movies & TV', 'Music & Audio', 'News', 'Productivity & Finance', 'Productivity', 'Shopping', 'Smart Home', 'Social', 'Sports', 'Travel & Transportation', 'Utilities', and 'Weather'.

Services Not Just for the Visually Impaired

- Restaurant and cook at home delivery services
- Online grocery delivery services



Multi-discipline approach

- Occupational Therapists
- Orientation & Mobility Specialists
- Vision Rehabilitation Therapist
- Teacher of Students with Vision Impairment
- Social Worker



Implantable miniature telescope

Is CentraSight for me?



- Advanced ARMD
- Implanted monocularly
 - 2.2x 3.0x
- Cataract (unilateral)
- 5 letter VA improvement with external telescope
- Adequate peripheral vision in fellow eye
- Postop training program
- Outcomes BCDVA QoL
- Randomized trial in process
- Cost

Patient Questionnaire for the IMT

- Are you greater than or equal to 65 years of age?
- Is it impossible to read and recognize faces without the help of visual aids? (Check in circle between 0=No and 3=Yes)
- Do you have age-related macular degeneration (AMD) disease that cannot be treated in both eyes?
- If you have and age-related macular degeneration, was the last treatment more than six months ago?
- Are you free of other vision-threatening eye diseases (besides well-controlled glaucoma)?
- Do you have a cataract in at least one eye?
- Would you participate in a visual training and rehabilitation program in New York both before and after implantation of the telescope?

<http://www.hellagovp.org/conditions/treatments/imt/patient-questionnaire-imt>

Retina Implant

- Alpha AMS
 - Subretinal space
 - End-stage retinitis pigmentosa
- Argus II

Summary

- Technology
 - Developed for sighted as well as visually impaired
- Task/ goal oriented
- Treatments
 - ARMD, RP