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Workshop - Training with Field Enhancement Devices
In This Session...

- Review types of peripheral field loss
- Review common field enhancement options
- Training with prisms
- Care of prisms
- Training with reverse telescopes
Types of Field Loss

- Binasal Hemianopia
- Bitemporal Hemianopia
- Left Homonymous Hemianopia (LHH)
- LHH & macular sparing
- Left Superior Quadrantanopia
- Left Inferior Quadrantanopia

Constricted Visual Fields

https://lib.store.yahoo.net/lib/visivite/constricted-visualfields.png
What about Inferior Field Loss?
Field Enhancement Options for Hemianopic/Quadrantanopic Loss

Fresnel Prism

Peli Prism

Oblique Peli Prism

Image courtesy of Eli Peli

http://archopht.jamanetwork.com/data/journals/ophth/6878/s ECS7007f4.png
Prism

- Ground in prism
- Rigid Fresnel prism
- Gottlieb prism

https://nora.cc/x/gottlieb_in_glasses_shadow.gif
Purpose of Prism

- Increase effective scanning into the affected field resulting in provision of further visual information\(^1\)
- Most types ENHANCE field, but do not EXPAND field
  - Exception: Peli prism

1. Perez A, Jose RT. The use of fresnel and opthalmic prisms with person with hemianopic visual field loss. JVIB. 2003; 97(3).
Placement of Prism

- Base of prism in direction of field loss
- Placement of traditional prism (NOT Peli prism)...
  - prism on both lenses on same half of lens (eg right side for right hemianope) with base in same direction (base right) OR
  - Prism on one lens only over temporal edge of lens on side affected (eg Base right on right side of right lens for right hemianope!)
    - Doubling occurs
Peli prism

- Prism placed superior and inferior to visual axis on one or both lenses in the direction of field loss
- Doubling more peripheral
Field enhancement options for constricted visual field:

- What extent of field loss is needed before field enhancement indicated?
Traditional sectoral prisms

- Fresnel, Gottleib, ground-in

Image courtesy of Eli Peli

https://nora.cc/x/gottlieb_in_glasses_shadow.gif
Placement of Prism...

- This time prism is fit on temporal edge bilaterally and base out on both sides
  - Can also place a nasal portion if patient bothered by diplopia
    - i.e. base out on nasal and temporal edge of both lenses
Or...

- Reverse telescopes (low power!)

Other Options...

- Minus lens at arm’s length (usually -6D)
Training with Prisms
Discuss with orientation and mobility instructor prior to initiating training with any device

- Will likely need to continue training with an O&M instructor
- They may advise to have a few initial sessions to get a grasp on orientation concepts prior to working with field enhancement
Sectoral Prisms

- Educate
- Practise
- Assignment
- Follow up

Important points

1. Purpose of prism
2. Images will be blurry viewing through Fresnel systems
3. Object shift – will notice that the image will ‘jump’ when move from prism to spectacles (less shift when objects closer)
4. Safety- ALWAYS VERIFY what is viewed through the prism
Educate -

- Have patient put on glasses
- Occlude one eye and introduce an object from affect side of field and continue to the sighted field
  - note image of object is initially blurry, then vanishes momentarily (image jump!) and reappears clearly.

Educate:

- Remove occluder and train patient to scan into the prism with similar eye movements to those used when looking in a mirror of a car (looking into prism every 8-10 seconds)
  - Systematically scan affected field, with eyes – not head
  - When patient detects an object through the prism...they then turn head towards the object to see it clearly through regular glasses

CHECK AND VERIFY

While seated

- Stand behind patient and hold your hand in the area of the patient’s field loss...does patient notice your hand off to the side?
- Ask them to reach for it quickly while viewing through prism...repeat....will become comfortable with displacement

[link to video](https://www.youtube.com/watch?v=Jqh55wjjyto)

- Remind can look and verify
- Continue with small objects on a desk
- Have them track moving object

Practise:

- While standing
  - Repeat training performed while sitting
  - Instruct patient to look straight ahead while you walk by his/her side with the deficit
  - Patient should note when they first notice you
  - Repeat, but have patient look into the prism and note when they notice you
  - Compare difference...improvement??
Practise.

- While walking
  - While you are on the patient’s affected side, walk around clinic, having patient scan into prism and comment when objects are noticed...stop and verify
  - Can have typical obstacles (doors/stairs) or ‘artificial’ objects to find
  - Pay attention to door frames
  - Have patient demonstrate independent travel through clinic, stopping and identifying objects when they are located
Assignment

- Practise outside of clinic first with O&M instructor and then on own
  - Malls, outdoors

Scheiman et al. Low Vision Rehabilitation: A Practical Guide for Occupational Therapists
Follow up

- Schedule appointment for two-three weeks following initial training
- Address questions/concerns
  - Fit
  - Use
Peli prisms

- Only prism that allows for field expansion after a few weeks of use
- Increases awareness of peripheral objects regardless of patients viewing direction
More Education

- Training similar to that of first time bifocal use
- Need to look through central clear lens area at all times
  - Looking into prism will create double vision
- When an object is detected peripherally through the prism, the patient then checks and verifies by turning head and eyes towards object
Demonstrate

- Field expansion with prisms
  - Have patient look at your nose while looking directly through the center of the lens (and not prism!)
  - Bring your hand from the affected side and along the horizontal/prism free meridian and ask patient to tell you when they detect your fingers
  - Repeat but move your hand above fixation in the area of the prism
  - Compare difference….improvement???
• While seated
  ▪ Have patient practise turning head and eyes to view objects on the deficit side
    ▪ While the patient is looking at your nose, move your fingers on the affected side but along the area covered by the prism (superior or inferior)
    ▪ When your fingers are detected, have them turn their head and eyes to view your fingers through the center of the lens
  ▪ Repeat in different positions
Practise ...

- While seated
  - Training to reach and accurately touch
    - Have patient look at your nose through the clear center of the lens
    - Again bring your fingers along the area with the prism
    - Once your fingers are detected, have patient reach without checking where they are
    - They will likely miss, but with practise will be comfortable with the displacement created from prism and will more accurately grasp fingers
Practice  ---

- While walking
  - Walk in clinic acting as a guide if necessary
  - When patient detects object/obstacle through prism, they need to stop and verify by turning their head and eyes to look at object through clear center of lens

- While walking, observe patient’s head posture—should be similar if prism fit correctly
While walking down stairs

- Advise to hold hand rail
- Need to turn head down to look at stairs through center portion of lens
- Do not look through inferior/lower prism
- Similar to first time bifocal users
Practise -

- Outside, malls, busy areas
- Escorted first
- Recommend O&M instructor first!
Follow up Again

- Questions/concerns?
  - Ask if prism interfering with central vision
If rigid prism:
- Rinse under warm water with a little dish soap.
- Gently use toothbrush to clean the grooves if required.
- Blot with a lint-free cloth and ensure thoroughly dry before use.
Training with Reverse Telescopes
Reverse telescopes act as a minifier
- Most useful for constricted fields
- It will make the area viewed look smaller allowing for more field to be observed
- Recommend no more than 2X minification otherwise image will be too small to be appreciated
- Can be spectacle mounted in the bioptic position or handheld
Training Continued…

- Used as a spot viewing device
- If spectacle-mounted, used similarly to using mirrors in a car
- Allows patient to get a general layout of the room and identify where objects/obstacles are located
Training Continued

- Demonstrate minification initially while seated and then progress to walking and identifying object/obstacle location through telescope first and then looking at them through clear lens (or simply not through telescope) to retrieve, or avoid
QUESTIONS?