

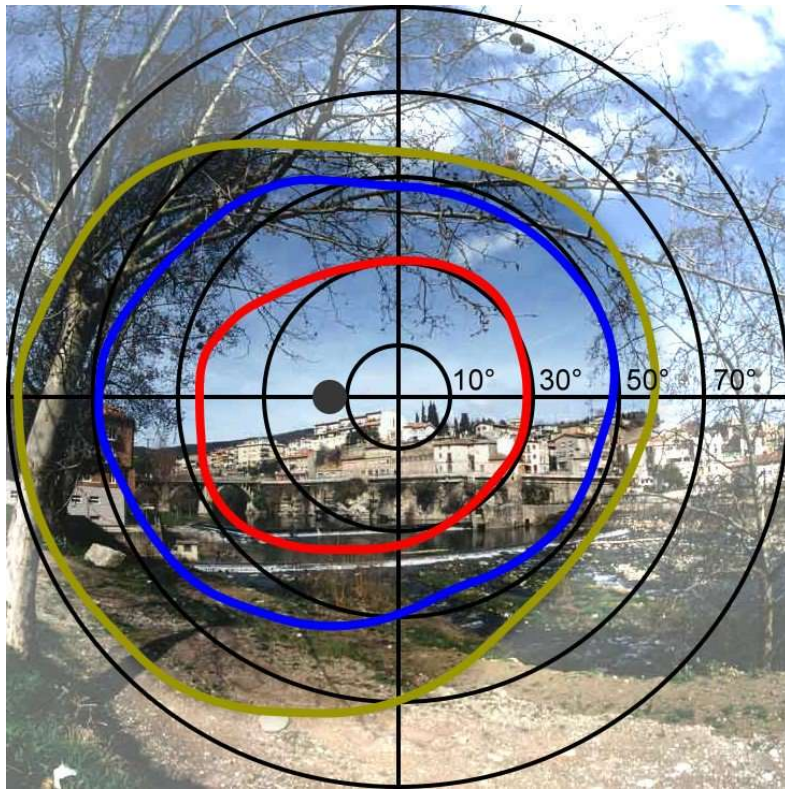
Intervention Strategies for Peripheral Visual Field Loss

Learning Objectives

By the end of this session, you will be able to:

- Teach and progress scanning skills for peripheral loss
- Apply compensatory strategies and equipment tailored to field loss
- Implement environmental modifications to support navigation and safety
- Differentiate interventions for peripheral loss from those for central loss

Peripheral vs Central Vision Interventions



- **Central loss:** focuses on detail work, reading acuity, near tasks
- **Peripheral loss:** focuses on orientation, mobility, spatial awareness
- **Overlap:** lighting, contrast, environmental control — adapted for specific needs

Why Scanning Training Matters

Peripheral vision loss removes the “early warning system” for movement and hazards.

Scanning is a deliberate skill that can help replace that automatic awareness, but it has to be taught and practiced.

Key Points

- Peripheral field loss reduces automatic detection of hazards
- Clients may not naturally compensate without training
- Systematic scanning can restore functional safety margins
- Applicable to mobility, driving, and daily activities

Scanning Training

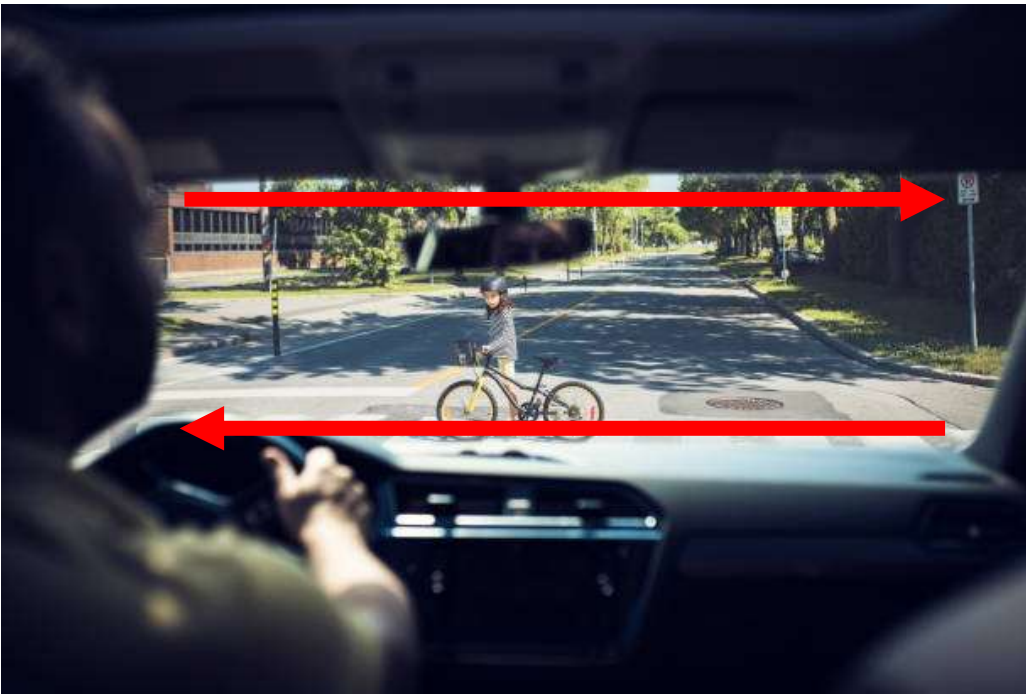
Principles of Scanning Training

Clients need to learn to scan both with their eyes and head, since peripheral loss often demands larger movement ranges.

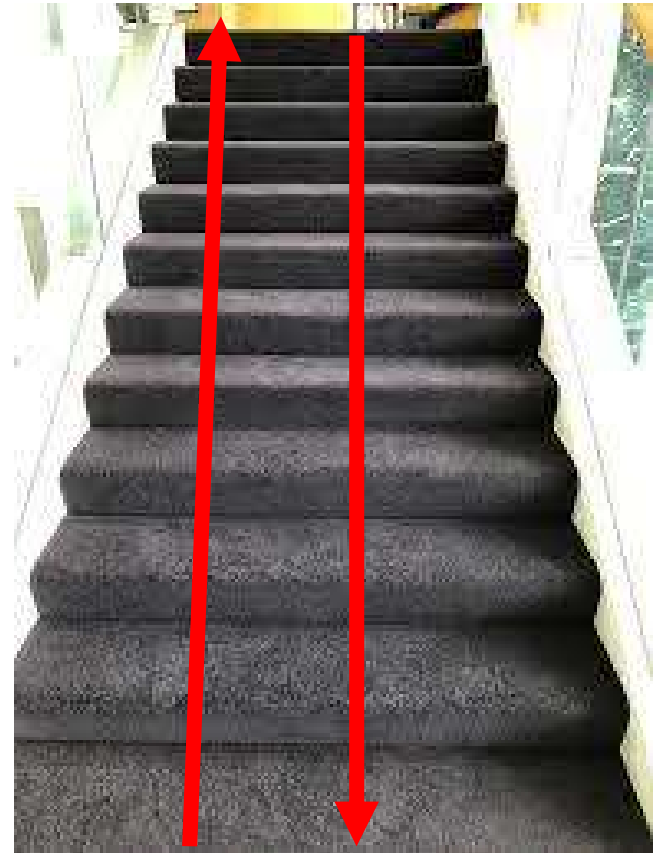
Patterns give structure and help them avoid missing areas.

1. Start with **large, predictable targets** in controlled environment
2. Use **systematic search patterns** (e.g., grid, clock face, arc)
3. Progress to smaller, less predictable targets in real-world settings
4. Integrate **head and eye movement coordination**

Horizontal and Vertical Scanning Techniques



Horizontal scans: sweep left-to-right and back (navigation, driving)



Vertical scans: top-to-bottom and back (stairs, shelving, curb detection)

Systematic Search Patterns

Providing a mental template—like a clock face—can help clients cover all areas of space without missing spots, especially useful in busy or cluttered environments.

- **Clock Method:** scan as if reading positions on a clock face
- **Lighthouse Method:** scan as if sending a beam of light
- **Grid Pattern:** methodical left-to-right, top-to-bottom search
- **Overlap sweeps** to ensure full coverage



Large-Field Mobility Scanning

- Practice in wide, open spaces with minimal hazards
- Emphasize full head turns, not just eye movements
- Introduce movement of other people/objects gradually
- Incorporate dual-task challenges



Narrated Walk: Find Red or Blue



Treasure Hunt: Find vending machines

Near-Task Scanning for Peripheral Loss

- Near-task scanning in peripheral loss is about controlling where and how the client looks.
- In tunnel vision, focus on minimizing crowding and using an organized outward search.
- In hemianopsia, anchor the search with page boundaries and teach predictable sweeps to avoid missing the start or end of lines.
- Before jumping into books or dense text, practice on non-reading materials that still require spatial organization.



Visual anchor/Boundary Marker

Functional Scanning in ADLs

- Apply scanning to:
 - Kitchen safety (locating items, avoiding hazards)
 - Shopping (finding items on shelves)
 - Work tasks (locating tools, monitoring machinery)
- Emphasize transfer from clinic to real environments

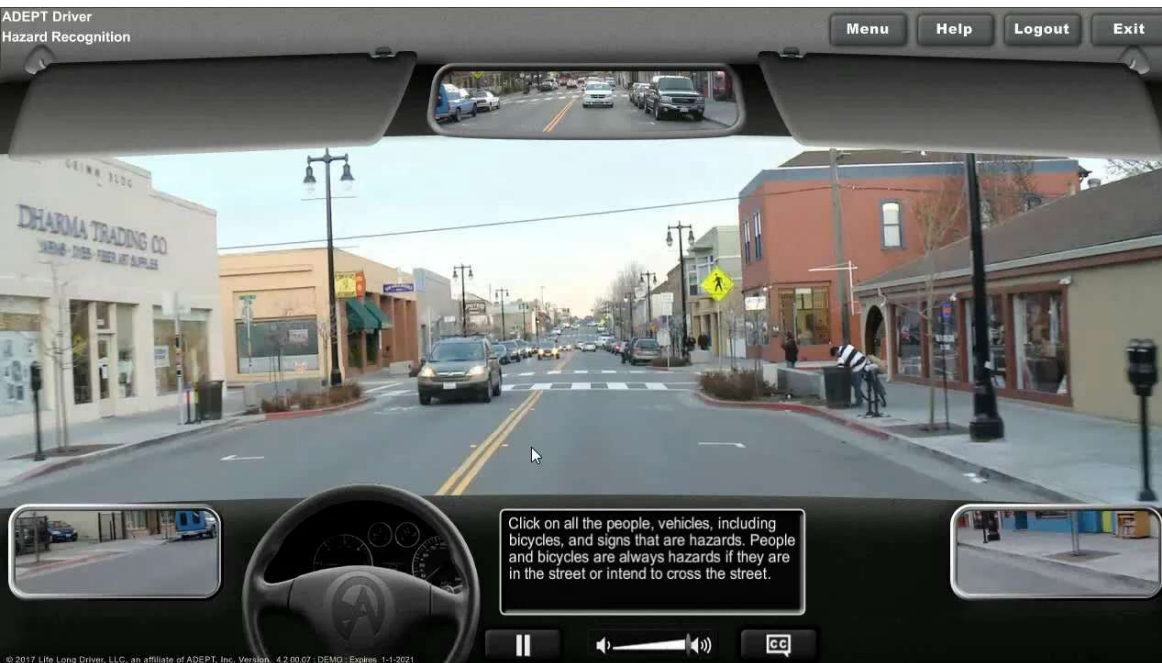


Functional Mobility Scanning

- Train in progressively challenging environments
- Begin in quiet, controlled spaces → advance to busy areas
- Allows client to practice strategy before complexity
- Emphasize full head turns and overlapping sweeps
- Practice anticipating hazards and planning movement



Driving-Specific Scanning Training



Driving with peripheral loss requires a much higher frequency of scanning.

- Emphasize early hazard detection in blind field
- Practice scanning to intersections, mirrors, and blind spots
- Use in-clinic simulators or parking lot drills before on-road
- Coordinate with Driving Rehabilitation Specialist (DRS)

Scan Course: Overview

- Structured mobility course designed to simulate real-world scanning demands
- Assess ability to compensate for VD deficit
- Targets placed at varying heights, distances, and eccentricities
- May include stationary and moving elements
- Can be adapted for clinic hallway, therapy gym, or outdoor setting



Scan Course: Training Approach

Purpose: Dual-task assessment of visual search during walk or wheel).

Set-Up:

- 20 total targets (10 per side of hallway) with large high-contrast letters/numbers.
- Place at varied heights and positions along both sides.
- Well-lit, low-distraction environment.

Procedure:

- Position course at client's midline; eyeglasses on if normally worn for distance.

Trial 1:

- Instruct client to identify each target aloud while moving through course.
- Record total errors and errors per side.
- Provide feedback on missed targets and suggestions for improvement.

Trial 2:

- Repeat course in reverse direction.
- Record changes in accuracy and strategy.
- Note if performance improves, declines, or stays the same.

Assessing Scanning Effectiveness

Good compensatory strategy

- Head up, locating targets without pausing during ambulation

Inadequate compensatory strategy

- **Fixates** on the floor, stares straight ahead, or stops to locate targets

Importance of Feedback

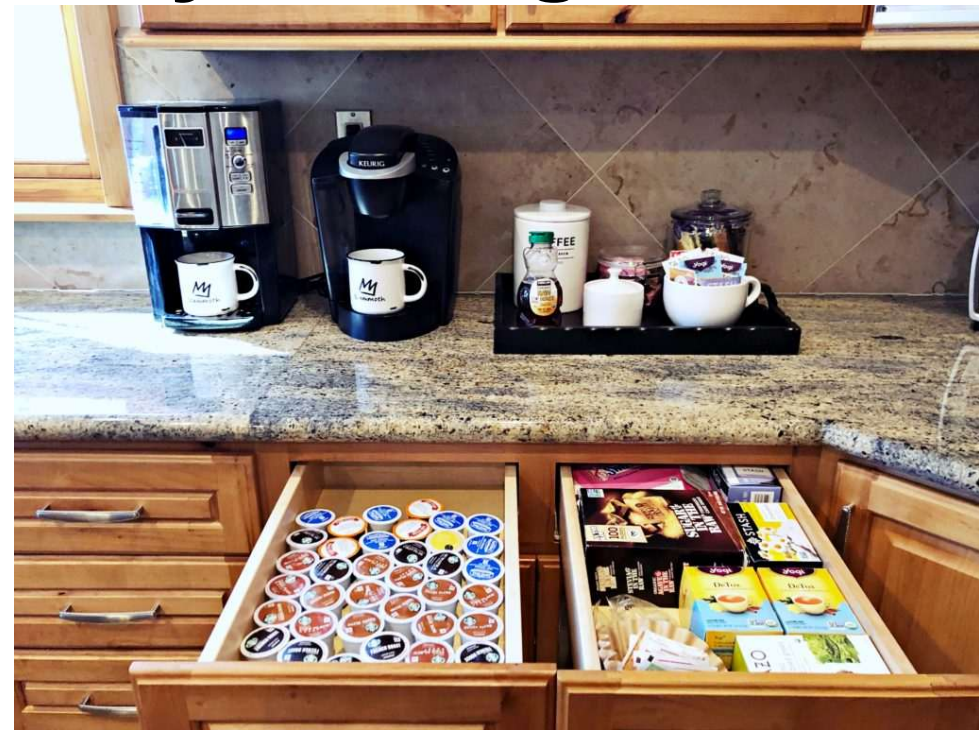
Always provide feedback to client on their performance on the first trial before completing the second trial

- If performance improves on second attempt, indicates client is **able to benefit** from feedback to improve compensation
- If performance does not improve, may indicate that client has **inattention**

Compensatory Strategies & Equipment

Purpose of Compensatory Strategies

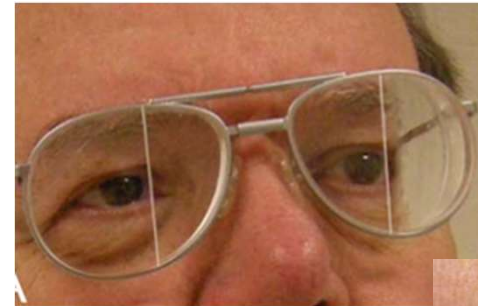
- Support safety and independence when skill training alone is insufficient
- Reduce cognitive load by simplifying visual tasks
- Provide alternate methods of hazard detection
- Enhance residual vision with targeted tools



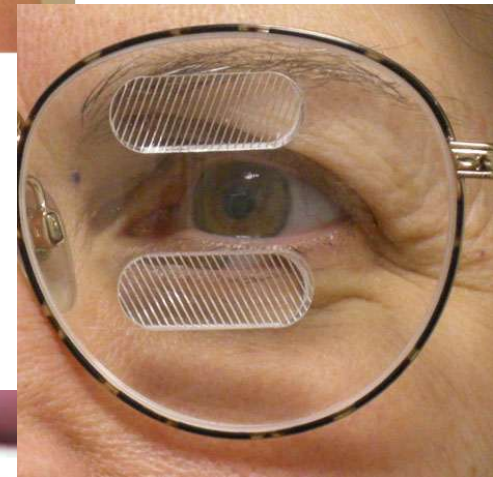
Example: Teaching workstation organization techniques that can be applied in other situations.

Field Awareness Aids

- **Sector prisms:** shift image from blind area into seeing area
- **Peripheral prisms:** localized image relocation for hemianopia
- **Reverse telescopes:** expand field for severe constriction (rarely tolerated)
- Must be prescribed/fitted by low vision optometrist



**Bilateral
Sector
Prisms**



Peli Prism



**Reverse
Telescope**

Orientation & Mobility Strategies



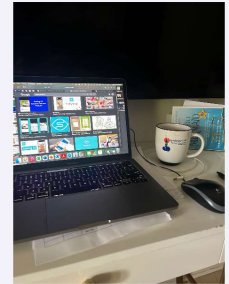
- **Trailing:** use tactile contact with walls or furniture for orientation
- **Protective techniques:** arm position to detect obstacles
- **Auditory cues:** use environmental sounds for spatial positioning
- **Landmarking:** consistent reference points for navigation



Assistive Technology for Field Awareness

Technology can fill gaps by alerting clients to hazards or helping plan routes in unfamiliar environments.

- GPS navigation with pedestrian mode
- Wearable devices with haptic or auditory alerts
- Smartphone-based recognition (e.g., Seeing AI, Envision)
- Electronic travel aids integrated into mobility tools

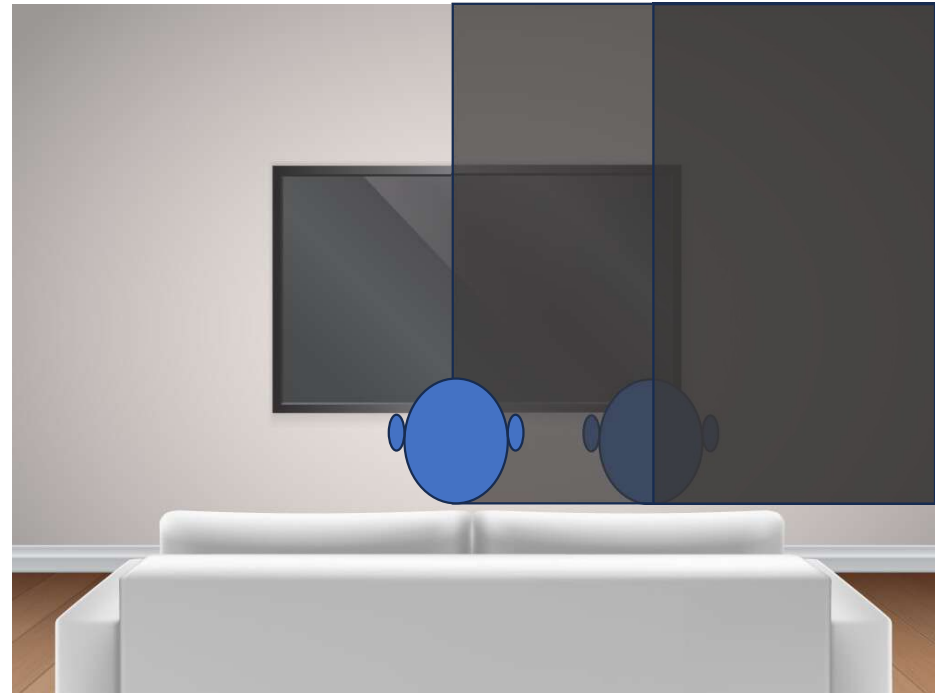


The image shows a workspace setup. On the left side, there is a MacBook Pro laptop with its screen open, displaying a web browser with search results for "seeing ai object." The laptop is positioned on a white desk, and a piece of paper with a grid labeled "AM/PM" is partially visible underneath the laptop.

To the right of the laptop, there is a white mug with a blue and red logo and the text "Lighthouse Cafe" printed on it. The mug is placed on the desk, and a black computer mouse is positioned nearby. Behind the mug, there are two books stacked vertically. The visible book title is "The Little Mermaid," and it is accompanied by a star graphic on the cover.

Task-Specific Adaptations

- Organize frequently used items in predictable locations
- Label and color-code for quick identification
- Arrange workspace to minimize need for rapid head-turn scanning
- Position key tools within intact field zone



Predictable organization reduces scanning demand and speeds up task completion, lowering fatigue for clients with restricted fields.

Reading Strategies for Peripheral Loss

- Boundary markers at page edges
- Line guides or finger tracking for return sweeps
- Pre-reading line scanning to map layout
- Reduce crowding with increased spacing

For Hemianopsia:

- Reading Exercises (visabilities.com)



Cross out the number 88 ... 4 4 5 6 7 8 8 9 2 3 4 4 5 6 8 8 1 1 2 2 3 0 0 8 7 6 8 6 8 8 7 9 9 4 5 4 4 3 3 6 6 8 8 6 7 5 4 4 4 2 3 8 8 1 2 3 4 9 0 0 8 6 6 5 5 8 2 4 5 5 6 6 7 8 8 2 3 4 8 8 1 2 8 9 7 7 4 5 8 8 4 5 3 6 7 7 9 8 8 3 4 6 8 8 9 5 6 3 4 2 3 8 9 7 8 8 3 4 5 5 4 4 3 3 6 6 8 8 6 7 5 4 4 4 2 3 8 8 1 2 3 4 9 0 0 8 6 6 5 5 8 2 4 5 5 6 6 7 8 8 2 3 4 8 8 1 2 8 9 7 7 4 5 8 8 4 5 3 6 7 7 9 8 8 3 4 6 © 1996 visabilities.com	Cross out the designated letter everytime it appears in the line A ASDKJFVNFTBRAVMFA B GHBPEDJFPBNDERBSKP C FJCDKOGHCQFJCQPCDI D DFJGUFPDNDFEZSDHT E EFJGHFGHPFEGHVBEDP F FOGKJFEBHRUVHBFCEI G GHFUROCGIDQCGHVF H GHJKNGHNMUHDGSHN I JILITICNGBRIDKLEITFNI © 1996 visabilities.com	Find the following words in the letters below head boy girl clock hat in book saw quack the new may fox red done zoo box hoe hut of top hit fghtyfrhgfhheadghtufhgjthvghoe fhgnboygjfjghfkfdkfgirljlinht ufjruthbndjbnvgjvclockhjhgtuf hryfhrhatbngvhnfhujnfhvghfjeq wscxcvcvgjhifokvmboxkgjtyerk wfscdqasawvncbxbotriotpvbhfq quackghfrhtufhjegdvvbnbthdfe gcbookhvnghfvbdnewghthmay ghtgfbnfhidlcogtghfuthdgrfox ghtjfrhiedfhnvfhzooghtfhrdone fhgjdrredvjlkpqtuwmwklghoefs © 1996 visabilities.com
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Lighting Adjustments for Peripheral Loss

- Position lighting to enhance peripheral cues
- Avoid high-contrast glare that hides hazards at edges
- Indoor/outdoor pathway lighting for nighttime
- Portable lighting for community navigation at night



Even, wide-spread illumination to reduce shadows



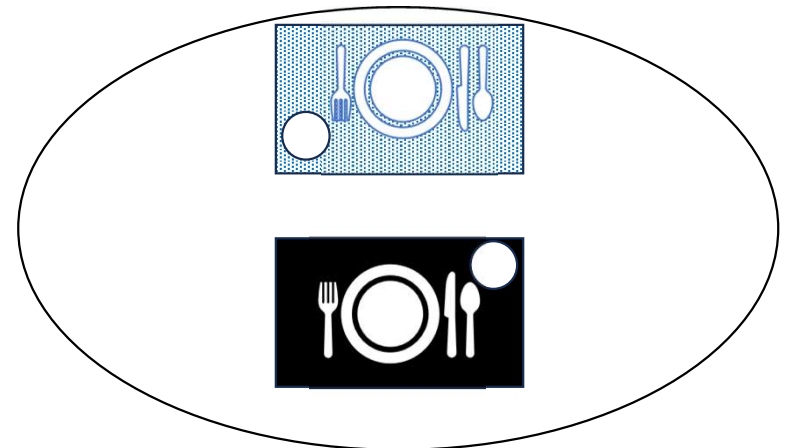
Before Outdoor Lighting



After Outdoor Lighting

Contrast & Color Use

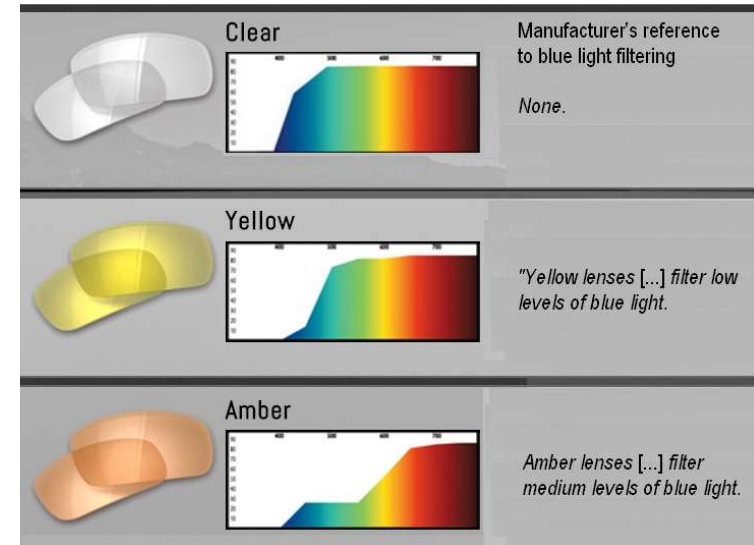
- High-contrast edge marking for steps, doorframes, furniture
- Bold color pathways for safe walking routes
- Contrasting dishware and placemats to locate edges
- Contrasting tape for work surfaces



Tinted Lenses / Filters

Many people with peripheral vision loss are photosensitive or have glare sensitivity.

- **Yellow/amber:** enhance contrast in low light
- **Gray:** reduce glare in bright conditions
- **FL-41/rose:** sensitivity after TBI
- Polarized: reduce reflective glare outdoors
- Select based on activity and environment



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FL-41 Tint Reduces Activation of Neural Pathways of Photophobia in Patients with Chronic Ocular Pain

Nicholas Reyes^{1,2}, Jaxon J Huang^{1,2}, Anjalee Choudhury^{1,2}, Nicholas Pondelis³, Elyana VT Locatelli^{1,2}, Ruby Hollinger¹, Elizabeth R Felix^{4,5}, Pradip M Pattany⁶, Anat Galor^{1,2}, Eric A Moulton^{3,7}



Adaptive Sports & Leisure Strategies

- Modify playing areas with bold boundary markings
- Use larger, high-contrast balls or equipment
- Pair visual cues with auditory signals
- Train scanning patterns specific to the sport/leisure activity



Matching Device/Strategy to Need

There's no one-size-fits-all intervention — strategy selection must be individualized and tested in real environments.

- Assess **pattern** and **extent** of field loss
- Consider physical/cognitive capacity
- Align with client's primary goals
- Trial multiple options to determine best fit



Case Example: Compensatory Equipment



- Client with RP, severe tunnel vision
- Needs to navigate unfamiliar community environments
- Provided: wearable GPS, reverse telescope training, high-contrast cane tips
- Result: increased independence and reduced navigation anxiety

Environmental Modification

Principles of Environmental Adaptation for Peripheral Loss

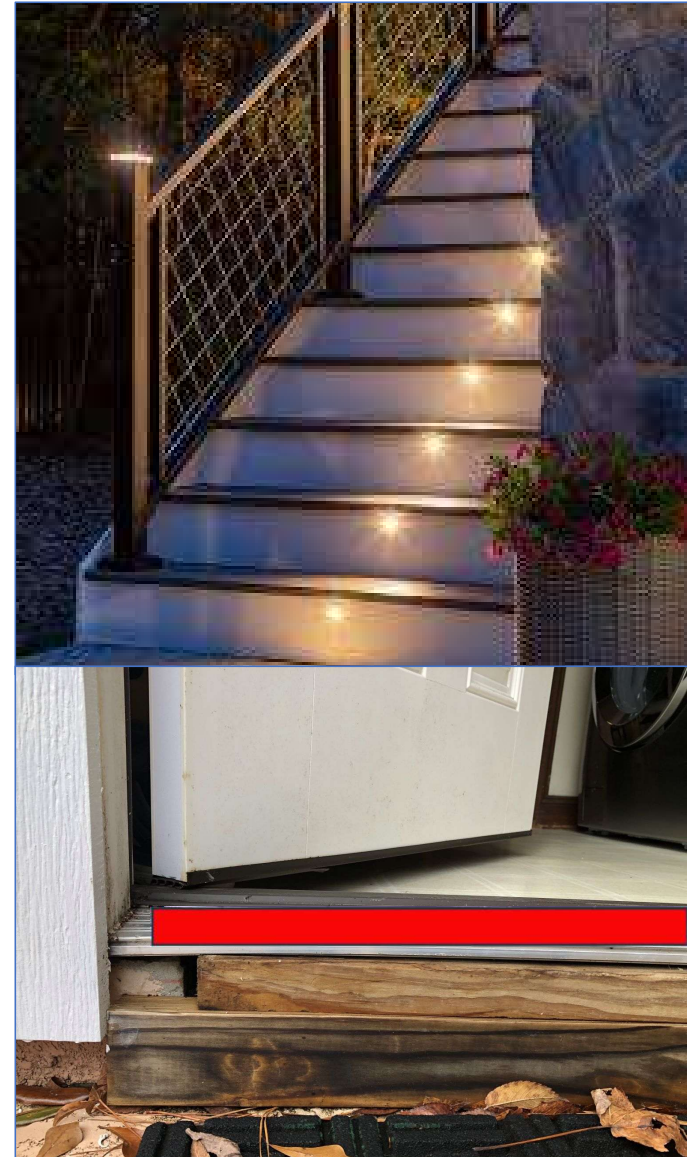
Environmental modification for peripheral loss is about reducing the number of scanning sweeps needed to detect hazards and navigate safely. Every modification should be goal-driven and client-specific.

- Reduce hazard risk by increasing visual accessibility
- Maximize **peripheral cues** for orientation and navigation
- Simplify layout to reduce scanning demands
- Prioritize client's most-used environments

Home Safety Modifications

Peripheral loss increases collision and trip risk. Modifications create predictable, hazard-free movement paths inside the home.

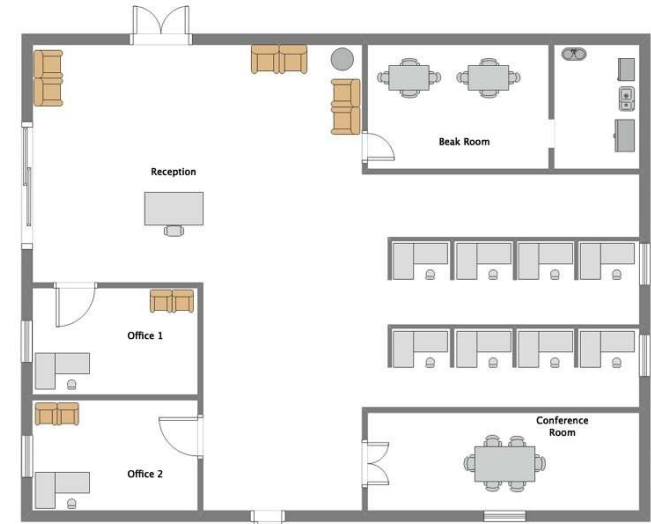
- Keep walkways clear of obstacles
- High-contrast marking for steps, edges, thresholds
- Lighting along hallways and staircases
- Arrange furniture to create straight, predictable paths



Workplace Modifications

Workplace safety for peripheral loss is about reducing environmental complexity — fewer visual surprises mean fewer missed hazards.

- Clear traffic lanes between desks/workstations
- Brightly mark floor level changes and protrusions
- Adjust lighting for even illumination across workspace
- Use large, clear signage at eye level and above



Community Mobility Environment

- Advocate for curb ramp markings in high contrast
- Ensure pedestrian crossing signals are visible from all approach angles
- High-contrast paint for poles, bollards, barriers
- Position wayfinding signs within intact visual field zones



Reducing Visual Clutter

- Simplify display areas to highlight essential information
- Remove unnecessary items from walkways and work surfaces
- Group related items together to reduce search effort
- Use visual dividers or barriers to block irrelevant visual input



Guided Wayfinding Systems

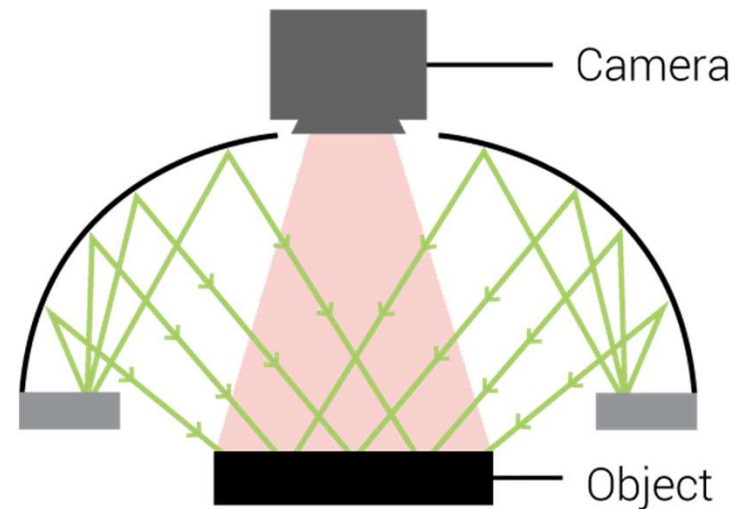
Guided wayfinding provides both tactile and visual anchors, making it easier for those with peripheral loss to orient themselves, even in complex environments.

- **Tactile cues:** floor textures, tactile signage
- **Visual cues:** color-coded paths, wall stripes
- Combine modalities for best results
- Use consistently across facility or space



Lighting for Environmental Awareness

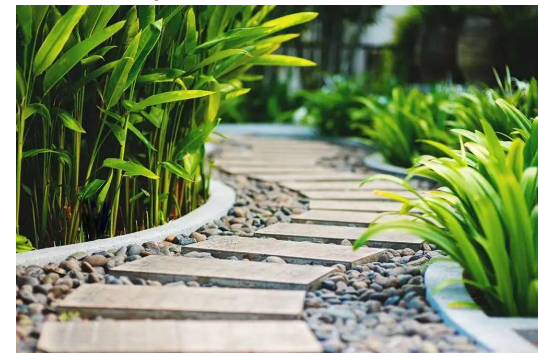
- Even, diffuse lighting to minimize shadows
- Additional lighting at transitions (stairs, doorways)
- Avoid glare-producing finishes on floors/walls
- Use motion-activated lights for dark areas



Outdoor Modifications

Outdoor environments are unpredictable — these steps create safer, more visible paths for people with peripheral vision loss.

- Contrasting edging on pathways
- Lighting along both sides of outdoor walkways
- Trim landscaping to prevent encroachment into walkways
- Secure hoses, cords, or seasonal items away from paths



Before/After Environmental Examples



Prioritizing Modifications

Environmental modification is not one-and-done — it's an ongoing process that should **evolve** as the client's vision and routines change.

- Base changes on client's most-used routes and spaces
- Start with high-risk areas (stairs, entries, kitchens)
- **Involve client** in decisions to ensure usability and acceptance
- Review and adjust periodically as needs change

Integration and Practice

Skill Training vs. Compensation: When to Use Each

Skill Training	Compensatory Strategies
Improves scanning, awareness	Reduces cognitive or motor load
Requires practice and engagement	Often faster to implement
Best for early-stage or stable conditions	Best for progressive or multifactorial conditions
Promotes neuroplasticity	Offers immediate safety benefit

Use skill training when you expect learning and performance to improve. Use compensatory tools when training isn't feasible, or safety needs are immediate.

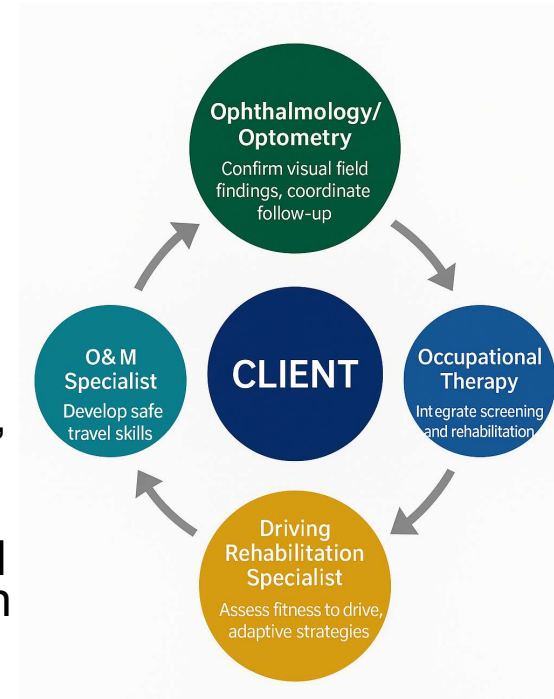
Blending Approaches for Complex Cases

In reality, most clients benefit from a blend — they learn scanning, use lighting strategies, and get assistive tech or layout modifications for safety.

- Combine skill-based and environment-based methods
- Consider cognitive load and fatigue
- Train for default use of compensatory strategies in high-risk scenarios
- Adjust based on field pattern, co-morbidities, and goals

Interdisciplinary Roles in Peripheral Vision Rehab

- **Orientation & Mobility Specialist:** real-world mobility training, visual scanning strategies
- **Vision Rehabilitation Therapist (VRT):** training in daily living skills using remaining vision, non-optical tools, and home organization strategies
- **Driving Rehabilitation Specialist:** driver readiness evaluation, training, adaptive equipment recommendations
- **Occupational Therapist:** clinical evaluation of visual-functional impairments, therapeutic task modification, patient education on compensatory strategies
- **Low Vision Optometrist:** prescription of optical aids, technology, filters, and prisms



Case Example #1: Glaucoma

- 76-year-old with advanced bilateral glaucoma
- Reports increased falls at night, avoids walking outdoors
- **Screening:** constricted field, misses low obstacles
- **Interventions:** scanning training, improved outdoor lighting, high-contrast step markings

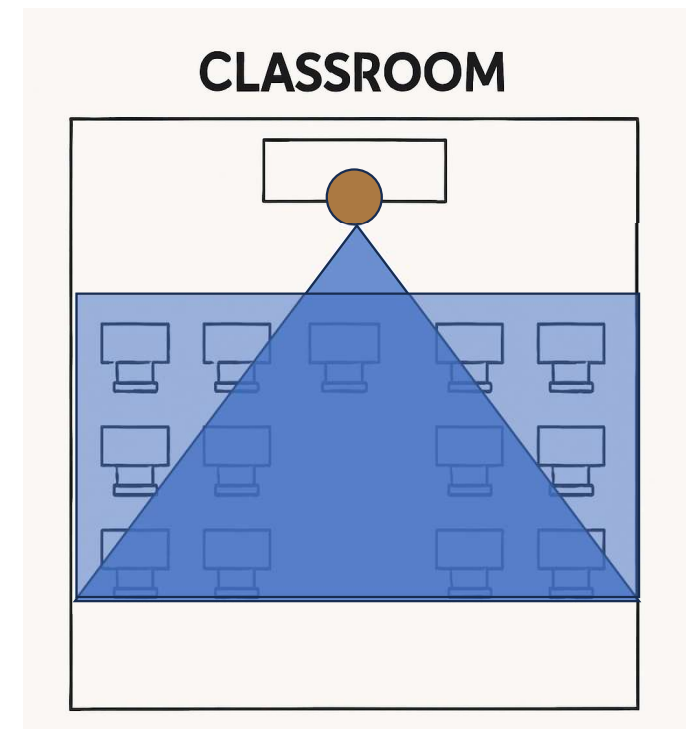
This case highlights how even high-acuity clients can have unsafe peripheral loss. Simple environmental changes made a huge impact.



Case Example #2: Retinitis Pigmentosa

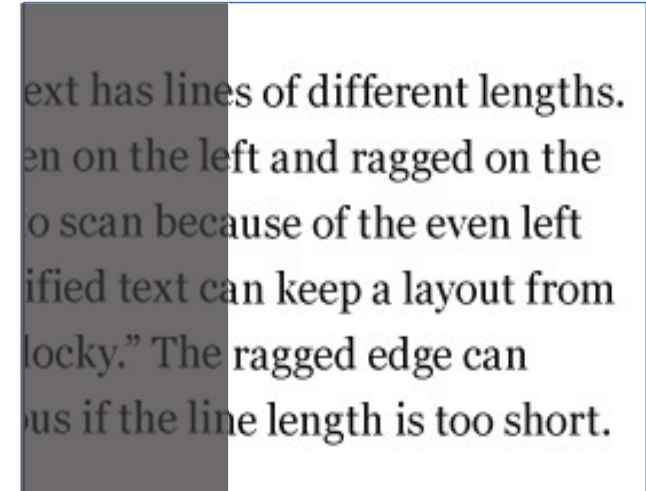
- 29-year-old teacher with progressive RP
- Complaints: bumping into students, fatigue in crowds
- Intervention plan: orientation training, predictable classroom layout, scanning drills, wearable device trial

Younger adults with RP often benefit from proactive adaptations — before safety becomes compromised.



Case Example #3: Left Homonymous Hemianopsia

- 65-year-old post-stroke client
- Misses items on left during reading and ambulating
- Screens show mild compensation but consistent left omission
- Plan: line guides, systematic scanning training, environmental mods, caregiver education



Text has lines of different lengths. When on the left and ragged on the right, the eye can scan because of the even left edge. Justified text can keep a layout from looking "blocky." The ragged edge can be a problem if the line length is too short.

Client Education Framework



Clients with peripheral loss may not feel visually impaired — education is what turns insight into behavior change.

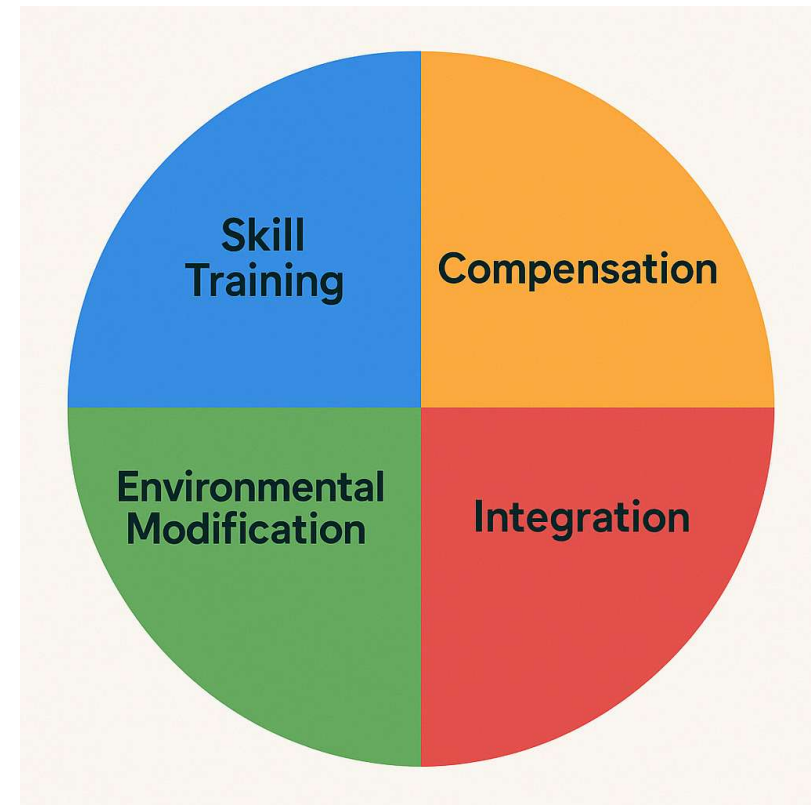
- Help clients “own” their condition
- Explain why interventions are needed (not just “helpful”)
- Demonstrate safety risks using simulations when possible
- Involve caregivers in all stages

Key Takeaways

1. Scanning is the foundational skill for peripheral loss
2. Compensatory tools help when training is insufficient or safety is urgent
3. Environment shapes performance — simplify, illuminate, and mark clearly
4. No single intervention works for all — blend and adapt

Recap by Intervention Theme

- **Skill Training:** scanning, mobility drills, reading strategies
- **Compensation:** tools, layout control, labeling
- **Environmental Modification:** lighting, contrast, hazard marking
- **Integration:** tailored, goal-driven, and interdisciplinary



Final Clinical Message

Vision loss doesn't always mean visual impairment.
But *unrecognized* field loss can lead to functional danger.



Resources for Further Learning

- *Low Vision Rehabilitation: A Practical Guide for Occupational Therapists* – Barstow & Brown
- American Printing House for the Blind (APH) Toolkit
- Hadley Institute Resources
- **Clinical handouts and exercises** available at: www.visABILITIES.com



Questions?