Conditions related to the eye or brain resulting in a change in best corrected visual status not correctable by means of standard spectacles, contact lenses, medications and/or surgical intervention which impacts a person’s ability to participate in valued daily occupations.

*Have some usable vision, but cannot see well enough to participate in daily activities.

**Diagnosis of Low Vision**

- Centers for Medicare & Medicaid Services
- Primary diagnosis of low vision is made by an eye care physician
- Solely based on visual acuity and visual field deficits
  - Other impairments may interfere with ADL, but are not considered low vision
    - Diplopia (phorias, tropias)
    - Visual Processing Deficits
Low Vision
- 20/70 or less with best correction in better seeing eye
- Legal Blindness
  - 20/200 acuity or less in better eye
  - VFD 20° or less in better eye

2010 U.S. Census
- National Eye Institute (NEI) and Prevent Blindness America
  - Low vision = 2,907,691
  - Chronic, Progressive, Major Players in LV
    - Macular Degeneration (AMD or ARMD) = 2,069,403
      - Makes up most of LVR clinic referrals
    - Diabetic Retinopathy (DR) = 7,685,237
    - Glaucoma = 2,719,379

2010 Census: Projection
American Foundation for the Blind

- 2/3rds of the legally blind population are seniors who lost their vision as a result of age-related eye disease
- Trend is expected to grow as baby-boomers age

Evidence-based Review of Stroke and BI Rehabilitation

- Incidence of reported unilateral spatial neglect (USN) ranges dependent on setting from 8-95%
- Reported negative impact on functional outcomes
- Intervention: prisms, eye patching, and hemi-spatial glasses are used to improve spatial representation (Teassell, 2013)
- Level 4 evidence: rehab programs directed at improving visual function improves functional outcomes (Cuiffreda, 2006)

*Great resource for stroke outcomes: www.ebrsr.com

CDC: Vision Loss and Comorbid Conditions

- Older adults with vision loss are more likely to experience comorbid conditions than people without vision loss
- Implication: Serious consequences for overall health, ability to perform tasks, and to participate in social roles
- Of people 65 years and greater in age — vision loss is expected to be 5.7 million

http://www.cdc.gov/visionhealth/basic_information/vision_loss_comorbidity.htm
### Components of Low Vision

- Acuity
- Visual Field Deficits (VFD)
- Contrast Sensitivity Function (CSF)
- Depth Perception: Experiential & Physiologic
- Color Perception
- Light/dark Adaptation
- Glare Sensitivity

### Lets Play!

**Decreased Acuity**

![Image of decreased acuity card]

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**Table:**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Vision Impairment + Comorbid Condition</th>
<th>Chronic Conditions for all age 65+</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estimated Population</td>
<td>%</td>
</tr>
<tr>
<td>Depression</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mild/Moderate</td>
<td>2,380,000</td>
<td>32</td>
</tr>
<tr>
<td>Severe</td>
<td>311,000</td>
<td>4.2</td>
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<tr>
<td>No Risk</td>
<td>2,087,000</td>
<td>6</td>
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<tr>
<td>Diabetes</td>
<td>1,341,000</td>
<td>16</td>
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<tr>
<td>Hearing Impairment</td>
<td>6,033,000</td>
<td>12</td>
</tr>
<tr>
<td>Heart Problems</td>
<td>2,146,000</td>
<td>42</td>
</tr>
<tr>
<td>Hypertension</td>
<td>2,448,000</td>
<td>24</td>
</tr>
<tr>
<td>Joint Symptoms</td>
<td>3,183,000</td>
<td>65</td>
</tr>
<tr>
<td>Stroke</td>
<td>876,000</td>
<td>16</td>
</tr>
</tbody>
</table>

*Estimated to nearest 1,000. Adapted from Conen, Jones, & Kim, 2007

[http://www.cdc.gov/visionhealth/basic_information/vision_loss_comorbidity.htm](http://www.cdc.gov/visionhealth/basic_information/vision_loss_comorbidity.htm)
Visual Field Deficit

Contrast Sensitivity Function

Depth Perception
So...What are the Functional Implications for a Person with Low Vision?

Functional Implications: Limitations

- Dressing
- Grooming
- Bathing
- Eating
- Functional Mobility
- Community Mobility
- Work Functions
- Financial Management
- Home Management
- Social Participation
- Participation in Leisure Interests

AOTA Centennial Vision

**Productive aging** as a key societal need in the 21st century with a rapidly aging population and increased longevity!

Promote **aging in place**!
Call to Action!

- Referral
  - Ophthalmologist: medically manages and maintains the health of the eye
  - Low Vision Optometrist: prescribes optical devices for the client with low vision impairment
  - Low Vision Occupational Therapist: works alongside the LVOD to provide training with devices and on use of compensatory strategies
    - Promotes participation in valued daily occupations

Call to Action!

- Referral
  - Community service providers: ILAB, DBS, Driving Rehab, PT, O&M, Counseling

- Intervention
  - Know OT scope of Practice

Scope of Practice: OT Services for the Client with Low Vision

- AOTA resource manual: Practice Guidelines for Adults With Low Vision
  - Summary: “Expanding the role of occupational therapy in low vision by helping older adults use their remaining vision to participate in desired occupations, supports their need for healthy and productive lives. Similarly, modifying the home environment to facilitate individual’s safe participation in daily activities contributes to overall health and wellness.”

(www.aota.org)
Scope of Practice: Role of OT

- Perform vision screening, lighting assessments, glare assessment, balance screening, home safety assessment:
  - Modify home environment via lighting change, use of contrast, obstacle removal, glare management
- Training in the use of (LV OT):
  - Preferred retinal locus (PRL)
  - Eccentric viewing
  - Visual scanning, tracking, tracing

Scope of Practice: OT Services for the Client with Low Vision

- Coverage by Medicare for OT in low vision since 1990
- Vision impairment was recognized as a physical disability
- Must be provided under direction of physician OR optometrist (preferably a low vision specialist)
- Services must be "medically necessary and reasonable"
  - address lack of independence or safety due to impairment

Adaptations for the Person with Low Vision Impairment

INTERVENTION IN OCCUPATIONAL THERAPY
Environmental Modifications

- Organize Environment
  - Structure
  - Simplify
  - Reduce Background Pattern
- Enhance Contrast
- Ensure Proper Illumination
- Modify Tasks

Organize: Structure

- Stack objects in pantry, on shelves, and in fridge 1-2 rows deep for easy access
- Label items in large high contrast print or use tactual adaptations
- De-clutter environment
- Work with client to designate a place for everything for organization

Organize: Decrease Background Patterns and Simplify

...
Ensure Proper Illumination

- Trial various light sources
- Improve task lighting with use of properly positioned gooseneck lamps and higher wattage bulbs
- Add additional light sources where needed
  - Fluorescent bulb under cabinet sink or overhead cabinets
  - Touch lights in closets

- Lighting sources:
  - Compact Fluorescent Light
  - Full Spectrum
  - Daylight, Natural Light
  - Halogen
  - Incandescent
  - Light Emitting Diode (LED)
Modify Tasks

- Assess shoes used for functional ambulation for safe features
- Assess for glare and encourage use of hat and sunglasses with community mobility
- Remove all throw rugs from floor for safety with home mobility
- Place non-skid strips down on tub or shower floor to decrease risk for falls when bathing
- Install grab bars for safety with transfers

- Introduce use of DME such as shower chairs and tub benches
- Mark raised shower thresholds with high contrast tape
- Train and educate on use of walker baskets and bags to hold items so hands can be free
- Educate on benefits of apron pockets and rolling carts
- Encourage participation in activities the require less visual adaptation (ex. If a person liked to bike encourage activity using a stationary bike)

- Encourage use of defensive walking strategies
- Use reflective fluoro velcro tape as needed on ambulation devices
- Remove furniture with caster wheels and wide legs that may stick out and interfere with a safe walkway
- Encourage use of large button devices and large print text

On a side note...encourage frequent eyeglass cleaning and check to make sure bifocals are being used correctly!
“The loss of one’s sight should not mean the loss of one’s vision.”

References


References


