Rehabilitation of Patients with Visual Field Loss Associated with Traumatic or Acquired Brain Injury

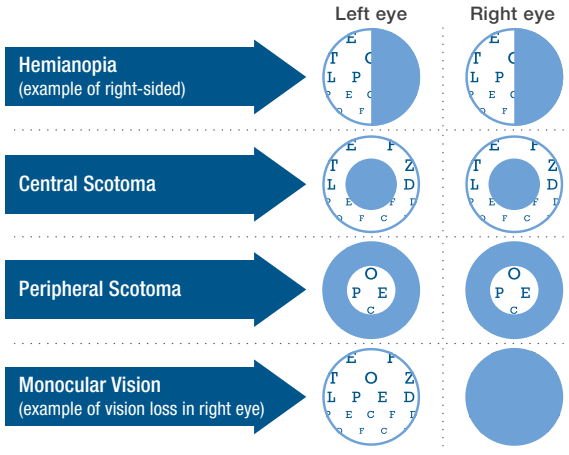
This fact sheet is intended to assist all who provide eye care and rehabilitation to individuals with visual field loss caused by traumatic or acquired brain injury. The information below provides an overview of accepted practices for rehabilitation strategies for visual field loss.

Types of Visual Field Loss

Visual field loss can occur due to neurological and vascular lesions in the brain after traumatic brain injury (TBI) or acquired brain injury (ABI) due to stroke, as well as eye injury associated with TBI/ABI. The type of visual field loss (Figure 1) can be determined by conducting visual field testing and may include:

- **Hemianopia/Quadrantanopia:** Characterized by the complete loss of the left or right half of the field of vision, or loss of a smaller segment due to injury within the visual projections of one hemisphere; may impact patient mobility
- **Central Scotoma:** Characterized by a centrally located area or areas of vision loss that reduce visual acuity
- **Peripheral Scotoma:** Characterized by focal loss of portions of the peripheral field of vision, including hemianopia, quadrantanopia, ring scotoma and arcuate field defects; may impact patient mobility
- **Monocular Vision:** Characterized by the total loss of vision in one eye

Figure 1: **Examples of Visual Field Loss**



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Revised Date: 13 July 2016

Rehabilitation Strategies for Visual Field Loss

Although visual field loss is a common visual disorder, there are currently no curative treatments. Therefore the goal of rehabilitation is to help improve the patient's visual functioning and quality of life.

Specific rehabilitation techniques are either "optical/assistive devices", "compensatory strategies", or a combination of these. The most effective approach often involves managing the symptoms of visual field loss using compensatory strategies, because these procedures help enable the individual to learn to better use their remaining vision to overcome their visual field loss.

Optical Management Devices are often employed first because of the more immediate effect they can have on task performance. Optical solutions often are effective because they magnify, minify, and/or relocate the visual images from non-seeing to seeing areas of the visual field. These devices include:

- Lenses
- Prisms
- Magnifiers
- Telescopes
- Reverse telescopes (minifiers, field expanders)

Compensatory Strategies can help the individual overcome vision and visual field loss by enhanced awareness and improved exploratory behavior. These strategies include:

- Head/eye scanning
- Awareness/auditory/sensory integration
- Reading strategies
- Eccentric viewing
- Mobility training
- Fitness to drive assessment/training

Multidisciplinary Management

A multidisciplinary or interdisciplinary approach involving a variety of health care providers is recommended for patients with TBI/ABI. One of the goals of clinical management is to ensure that all eye and neurological problems are managed by appropriate providers from diagnosis through rehabilitation. The specific provider(s) recommended will depend on the needs of the patient and may include those providers listed below.

Providers of care and rehabilitation for visual field loss

- Optometrist/Ophthalmologist
- Neurologist/Neuro-Ophthalmologist
- Occupational/Physical Therapist
- Audiologist*
- Low Vision or Blind Rehabilitation Specialist
- Certified Driver Evaluation Specialist

**Hearing loss may compound spatial awareness difficulties caused by visual field loss*

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