Proceed with Caution: Legal, ethical and visual considerations when evaluating low vision patients and driving

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Background

• Low vision rehabilitation is generally reserved for individuals who no longer benefit from traditional glasses and contact lenses.

• This course is designed to assist private practitioners when evaluating low vision patients looking to obtain or sustain their driver's license.

• We will highlight various aspects to consider including: statutory regulations, ethical considerations, visual metrics, special testing and additional resources to help guide the conversation and assist your patients in the decision making process.
Course Outline

• Develop a basic understanding of the general and technical definition of legal blindness and how it relates to driving.

• Review statutory driving requirements and how they affect your ability to assist low vision patients in obtaining a driver’s license.

• Identify and review special testing which may be required when evaluating a low vision patient.

• Discuss ethical considerations and your obligation to the patient and society.
The Many Definitions of Blindness*

• “The inability to see at all or, at best, to discern light from darkness.”

• “If their sight is bad enough—even with corrective lenses—that they must use alternative methods to engage in any activity that persons with normal vision would do using their eyes.”

• The United States Bureau of the Census question about “significant vision loss” encompasses both total or near-total blindness and “trouble seeing, even when wearing glasses or contact lenses.”

• The statutory definition of “legally blind” is that central visual acuity must be 20/200 or less in the better eye with the best possible correction or that the visual field must be 20 degrees or less.

• There are no generally accepted definitions for “visually impaired,” “low vision,” or “vision loss.”

*https://nfb.org/blindness-statistics
Disability Evaluation Under Social Security Section 2.00

• The Act defines blindness as central visual acuity of 20/200 or less in the better eye with the use of a correcting lens.

• The Act also provides that an eye that has a visual field limitation such that the widest diameter of the visual field subtends an angle no greater than 20 degrees is considered as having a central visual acuity of 20/200 or less.
Other Test Charts*

• Most test charts that use Snellen methodology do not have lines that measure visual acuity between 20/100 and 20/200.

• If your visual acuity is measured with one of these charts, and you cannot read any of the letters on the 20/100 line, we will determine that you have statutory blindness based on a visual acuity of 20/200 or less.

• For example, if your best-corrected central visual acuity for distance in the better eye is 20/160 using an ETDRS chart, we will find that you have statutory blindness.

• Regardless of the type of test chart used, you do not have statutory blindness if you can read at least one letter on the 20/100 line. For example, if your best-corrected central visual acuity for distance in the better eye is 20/125+1 using an ETDRS chart, we will find that you do not have statutory blindness because you are able to read one letter on the 20/100 line.

*https://www.ssa.gov/disability/professionals/bluebook/2.00-SpecialSensesandSpeech-Adult.htm
Vision Loss

– Central
  • AMD

– Peripheral
  • Glaucoma

– Neurological
  • Stroke
Central Acuity

• Snellen
  – Most Common
  – 20/100-20/200?

• ETDRS*
  – LogMAR
  – Precision/Confusion

• Feinbloom*
  – Flexible

* Preferred methods
Visual Acuity Requirement

• Highly Variable (state to state)*
  – Connecticut
    • Acuity (how clearly you see). Minimum vision requirements for a Class D license is **20/40 or better**, with or without corrective lenses.

  – Florida
    • Applicants or licensed drivers who have **20/50** vision or worse in either eye, with or without corrective lenses, are referred to an eye specialist for possible improvement. **20/70** vision or better in either eye or with both eyes may pass with or without corrective lenses, if vision cannot be improved. However, if one eye is blind or 20/200 or worse, the other eye must be 20/40 or better.

Peripheral Field

• Confrontation
  – Misses too much

• Arc Perimetry
  – Angle of Vision

• Automated Perimetry*
  – 120 point Binocular Estermann

* Preferred methods
Peripheral Field

• Highly Variable
  – Arizona: 60 degrees, plus 35 degrees on the opposite side of the nose in at least one eye
  
  – Connecticut: 140 degrees for a person with two eyes, and 100 degrees for a person with one eye
  
  – Texas: 140 degrees, recommendation
Color Vision

– D15/PV16
– HRR
– Ishihara
– Automated Color Vision Testing

• Colour blindness in everyday life and car driving. (Tagarelli Et. Al 2004)
  – “subjects preferred daytime driving, and fewer drove regularly…”
Other Concerns

• Visual Quality
  – Contrast
  – Glare
  – Photophobia

• Reaction Time:
  – Dynavision

• Visual Attention
  – Useful Field of View (UFOV)
  – Scanning Activities
Contrast

• A measure of visual function
  – Objective measurement
    • MARS Chart
    • Pelli Robson Chart
  – Subjective measurement
    • Listen to the patients description
Contrast

• Environmentally dependent
  – Day vs Night
  – Clear vs Overcast
  – Indoor vs Outdoor

• Conditions
  – Cataracts
  – Glaucoma
  – Diabetic Retinopathy
  – Refractive Surgeries
Glare

• A measure of functional vision
  – Objective measurement
    • Brightness Acuity Test
    • Binocular Indirect Ophthalmoscopy
  – Subjective measurement
    • Listen to the patients description
Glare

• Conditions
  – Retinal Dystrophies
  – Corneal Dystrophies
Photophobia

• A measure of functional vision
  – Mainly subjective
    • Ask about transition time moving outdoors to indoor

• Conditions
  – Retinal Dystrophies
  – Iris Irregularities
  – Neurological
    • Trauma
    • Migraines
Color Vision

• A measure of color discrimination
  – Objective
    • HRR/Ishihara
    • Computerized

• Conditions
  – Congenital
    • Cone function
  – Acquired
    • Toxic
    • Diseased
Tinted Lenses

- Tinted Lenses
  - Glare
  - Color vision
  - Light sensitivity

- Evaluating tints in office
  - Flippers work well
    - Indoor: Yellow/Orange
    - Outdoor: Plum, Gray, Brown

Documentation

• Medical Records
  – Patient Education
What Does The Research Say?

• “...there has been very little rigorous scientific research on bioptic driving.” – Owsley 2013
  – Poorly designed studies
  – Took place 20-40 years ago
  – Conflicting outcomes
Predictors of Motor Vehicle Collisions (MVCs)

Previous Driving Experience, but Not Vision, Is Associated With Motor Vehicle Collision Rate in Bioptic Drivers (Bradley E. Et. al)

- We identified 237 bioptic drivers (65% male)
- 124 (52%) drivers having had at least one MVC
- Visual acuity and contrast sensitivity were not significant predictors of MVC.
- Drivers without previous driving experience were significantly more likely to have been involved in an MVC (P < 0.001)
- The rate of MVC per year decreased
Legal/Ethical Considerations

• What is your obligation to the patient and/or society?
  – When to Report
    • Doctors Obligation
    • HIPAA

  – “Where a patient is likely to harm another person and there is a reasonable probability that the patient may carry out the threat, the physician should take reasonable action to protect the intended victim, including notification of law enforcement authorities” - Council on Ethical and Judicial Affairs. Code of Medical Ethics. Current Opinions with Annotations. Chicago, Ill: American Medical Association; 1997

  – “the duty of confidentiality was outweighed by the duty to protect the victim.” – California Supreme Court (1976)
Who to report to?

• Medical Advisory Board
  – Many states are on a voluntary basis
  – Some are mandatory
    • Ex. New Jersey, Delaware, Nevada require reporting for epilepsy¹

Statutory Regulations: The “patchwork quilt” of regulations

• Vision standards are all over the map
  – Visual Acuity
  – Visual Field
  – Color Vision
Another Patchwork...

– Are bioptics permitted?
  • Vision requirements
  • Additional Resources
  • http://www.biopticdrivingusa.com/state-laws/
Resources

• For Driving
  – http://www.biopticdrivingusa.com
  – http://www.aded.net (The Association for Driver Rehabilitation Specialists)

• For Discontinuation of Driving
  – Alternative Transportation Options
  – Support Groups
Conclusion

– Research your state's laws

– Counsel and educate your patient

– Documentation is a must