Vol. 3 Issue 2, 2009

Visibility

News and Research from the Envision Low Vision Rehabilitation Center

Relax along the River Walk

"The Envision Conference has become the national leader in multi-disciplinary low vision rehabilitation programs. The high quality, scope, depth and timeliness of the lectures and the workshops are exceptional."

– Alfred A. Rosenbloom, OD, MA, DDS

Each year, hundreds of low vision professionals come together to advance the state-of-the-art in low vision

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ENVISION CONFERENCE 2009

On Driving: Issues Faced by the Low Vision Driver

The loss of the privilege of driving is perhaps the number one issue concerning the low vision population. In a world of instant gratification where people can just hop in the car and everything is at their fingertips, the loss of America's primary mobility tool can be devastating. Many people are unable to drive to work or continue living in an area without public transportation. People who have been independent for a lifetime must rely on relatives or friends to drive them long distances. Since the driver's license is such a symbol of independence, the loss can be a psychological and emotional devastation.[1-2]

Based on demographics from the 2000 U.S. Census, 2.4 million Americans (1.98 percent) have low vision (defined as greater than 20/60

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ENVISION Low Vision Rehabilitation

On Driving *continued from page 1*

with best corrected vision or a visual field of less than 20 degrees in the better eye by the World Health Organization standards). A study sponsored by the National Eye Institute (NEI) estimates that by 2020, the number will increase by 70 percent to 4.1 million. The increase is primarily due to the aging U.S. population.[3] Due to this massive increase, it is imperative that professionals be as versed in low vision rehabilitation as possible.

The necessary skills to be a safe and independent driver are similar to those used for pedestrian orientation and mobility (O&M). If you want to travel through an environment, you must understand the environment. You must understand the layout of the area, establish landmarks, and identify passing traffic. Just as you would plan a trip using a road map, so must the visually impaired driver prepare for a trip before they travel in unfamiliar areas. Cardinal directions are always important. If the sun is not out, how would you orient to your surroundings? That is where basic orientation techniques come in. Various forms of GPS, assistive technology, and gadgets of the future are being developed to help drivers. However, none of this will ever replace a simple map and compass.

Driving safely requires a number of important skills such as: ability to perceive changes in a rapidly changing environment, managing to judge and take action on the information in a timely and safe manner, and the motor ability to take the actions needed. The useful field of view (UFOV) is defined as the area where one can take a quick glance to extract visual information without head or eye movement. Problems resulting from a reduced UFOV include slowed reaction time, decreased visual attention, and problems processing "visual clutter."[4] If one area is diminished, it is up to the driver to compensate in another area. For example, if there is a problem perceiving changes in the environment, it will become imperative to compensate by taking a quicker action. Braking at a stop light is a mixture of identifying the sign, then applying the brake. If you perceive the sign later than average, you must apply the brake sooner than normal. A complex and busy visual environment may be confusing to a driver, with hazards overlooked.

There is far more than simple visual acuity involved in the complex task of automotive travel.[5] Many people need practice scanning and spotting the various indicators that allow a person to maintain a proper distance from other motorists. The person must locate intersections, traffic signs, and estimate distance using a variety of visual techniques. For example, when a motorist is not present on a perpendicular street, how would a person identify that intersection? These are the types of concepts that orientation and mobility specialists teach.[6] Many people with a loss of depth perception have to pay attention to other visual cues. Visual trailing of the sides of buildings, grass-lines and curbs all play an important role in low vision adaptive driving.

A topical study found that low vision drivers have deficits with visual processing speed, reduced contrast sensitivity and visual field sensitivity.[7] The same study also found that highway travel was not significantly different for the low vision driver and sighted drivers. With these findings, it can be said that by practicing adaptive behavior, low vision drivers can be safe drivers.

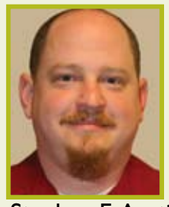
Reduced contrast sensitivity has been proven in numerous studies to be associated with poor performances on driving tests, increased difficulties in driving and higher involvement in at-fault car crashes.[8] Currently, no state has a contrast test to assess the sensitivity of its licensed drivers. Many low vision drivers have issues concerning contrast that can severely impair their perception of the environment. These individuals may need to practice spotting and scanning techniques to help assure they can take appropriate actions.

Many individuals continue to drive, telling themselves, "It's only down the street," or "No one will be out at night." However, driving at night and in residential areas is often hazardous. It is seldom worth putting people at risk when simple adaptive visual techniques can be learned and practiced.

With various professionals working with people with low vision (i.e. ophthalmologists, optometrists, occupational therapists, orientation and mobility specialists, and low vision therapists), there are a variety of skills and techniques that can allow someone with low vision to be a safe and independent driver. Low vision professionals are available to provide adaptive training and to make people feel confident in their ability to continue driving. Low vision professionals are equipped to help people regain their independence by finding the right visual aids, but most importantly, to teach low vision individuals adaptive skills to be safe drivers.[9]

Bioptic driving has existed since the 1920s.[10] Several types and

On Driving *continued on page 11*



Tyler C. Hamilton, M.A., COMS

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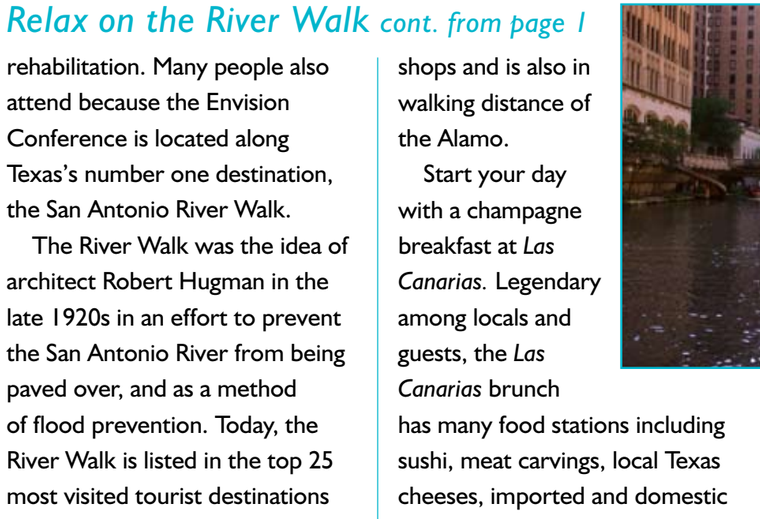
Relax on the River Walk *cont. from page 1*

rehabilitation. Many people also attend because the Envision Conference is located along Texas's number one destination, the San Antonio River Walk.

The River Walk was the idea of architect Robert Hugman in the late 1920s in an effort to prevent the San Antonio River from being paved over, and as a method of flood prevention. Today, the River Walk is listed in the top 25 most visited tourist destinations by Forbes Traveler. The biggest challenge facing many visitors of the San Antonio River Walk is finding time to take in the many sights and attractions. The River Walk is lined with a number of fine restaurants, nightclubs, hotels and shops and is also in walking distance of the Alamo.

Start your day with a champagne breakfast at *Las Canarias.* Legendary among locals and guests, the *Las Canarias* brunch has many food stations including sushi, meat carvings, local Texas cheeses, imported and domestic cheeses with seasonal sliced fruits and berries, omelets and Belgium waffles. For lunch, *Houston Street Bistro*, located in the Theater District in downtown San Antonio, is the perfect spot for casual dining and great continental and bistro-style cuisine. If you like Italian for dinner, you'll love *Michelinio's* along the River Walk.



Relax at *Rita's on the River* with a cold beer or giant margarita! *Rita's* bills itself as an ice house with ice cold drinks and good Texas food. Or maybe you'd like to Salsa dance and experience the beach on the River Walk at *Acapulco Sam's*. Or perhaps a night at the theater is more your style. Both the historic *Majestic* and *Empire* theaters are right up the banks from the River Walk and offer exciting musicals and off-Broadway productions. Read more about the River Walk's charms and entertainment on the Conference Blog at **www.envisionconference.org**.

To view the conference programming and to register, visit the conference website at www.envisionconference.org. Remember to register by July 1 to take advantage of the early bird rate, saving you $100!

Please contact **Michael Epp**, Director, Outreach & Continuing Education, with questions about the Envision Conference at **(316) 440-1515** or email **michael.epp@envisionus.com**.

An Overview of Bioptic Driving: History, Regulations, and Practical Experiences

For many practical reasons, driving is very important for independence in the United States. Some of the most common reasons include, but are not limited to: a lack of quality and efficient public transportation in many parts of the U.S., an increased sense of motivation and self-esteem in potential drivers, for safety concerns such as being able to reach a health care facility destination, financial considerations such as being able to get to a place of employment, elderly considerations such as being able to get to a grocery store or other practical destination, and to simply increase one's overall quality of life. As a common tool for the visually challenged driver, the bioptic telescope deserves extra attention when discussing issues in low vision driving.

History of Bioptic Device Usage for Driving in the United States

In 1932, William Feinbloom, O.D. developed a 3x telescope lens small enough to mount in spectacle frames. In 1961, Gerald Fonda, O.D. evaluated telescopic spectacles for mobility. In 1967, Albert Burg correlated selected visual characteristics with driver performance (the correlation was very weak). In 1970, D.R. Korb published an article on preparing visually impaired drivers. In 1971, California began issuing bioptic driver's licenses. In 1976, The Health and Safety Associates sponsored the National Conference on Telescopic Devices and Driving. In 1976, The AMA and The American Association of Motor Vehicle Administrators sponsored a conference on telescopic devices and driving. It was at this point, and throughout the early 1980s, that only a handful of states in the U.S. were allowing licensure with the use of bioptic telescopes.

In 1984, the Department of Transportation (DOT) issued a statement that indicated that the visually impaired should not be discriminated against and more states began to address issues in low vision driving. Finally, the 1992 Americans with Disabilities Act stated, "No qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of services, programs, or activities of a public entity, or be subjected to discrimination by any public entity." More states than ever before were now developing licensure protocols for those with vision impairments.

This interest at the state level for driving with visual impairments has remained an issue of great importance, while individual state laws vary across the U.S. and continue to fluctuate. I will return to this topic briefly but first, let's take a quick look at some common characteristics shared by many potential low vision drivers that could possibly benefit from or currently use a bioptic telescope for the purpose of safe driving.

James B. Nolan, Ph.D.

"No qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of services, programs, or activities of a public entity, or be subjected to discrimination by any public entity."

— 1992 Americans with Disabilities Act

continued on next page

Common Characteristics of Bioptic Devices and Bioptic Drivers

Bioptic devices range in power from 1.5x to 5.5x magnification. Common scopes used for driving are primarily fixed-focus, but adjustable scopes are a possibility. The telescopes can be single or dual mount in carrier lenses, though many optometrists prescribe single mount today due to the added weight of two scopes, rather than one, in the carrier lens. Additional factors can also include costs to the potential user and the reduction of the "ring scotoma" size created by the use of a single mount scope vs. a dual mount scope. Doctors and patients alike should always check their individual state laws regarding whether or not one's state driving licensure laws mandate single scope placement in the carrier lens, or will allow for a dual mount scope.

Additionally, it should be pointed out that drivers look through the carrier lens about 95 percent of the time while driving, and primarily use their scopes for very brief intermittent spotting of objects ahead of them in their path, such as objects in the roadway, stop lights, and road signs.

Regarding measured acuities, the most common bioptic drivers tend to fall into the following categories based on corrected vision as measured through the carrier lens:

- **Near Normal Vision:** 20/30 – 20/60
- **Moderate Low Vision:** 20/80 – 20/150
- **Severe Low Vision:** 20/200

It should be noted that there are conflicting opinions in the research literature regarding the overall importance of granting or not granting licensure based on measured acuities alone.

Who is a good candidate for bioptic driving?

Low vision individuals with carrier lens measured visual acuity of 20/200 or better make good candidates for bioptic driving. However, some exceptions can be made based upon the individual. Other recognized indicators of good performance include those patients that exemplify stable ocular conditions, good central and peripheral field vision, good motor skill ability, good sensory ability, good alertness and the ability to multi-process. Additionally, one must have high cognitive ability for judgment and decision making and exemplify excellent reaction time.

Common Indicators of Possible Poor Performance

There are some factors that are common indicators of possible poor performance in driving ability in regards to measurable characteristics in patients. These include such factors as exemplified contrast sensitivity issues, extreme problems with solar glare, right and left field disability, poor reaction time, poor judgment and risk-taking behavior, and overconfidence.

Common Difficulties Reported by Bioptic Users

Common difficulties reported by bioptic users while driving include such factors as: making left turns, rush hour traffic, high traffic situations, parallel parking, driving in bright sun and rainy conditions (due to glare issues), and, to a lesser degree, driving at night.

Noted Research Regarding Bioptic Driving

In a recent paper regarding bioptic usage, Bowers, Apfelbaum and Peli (2005) reported that 74 percent of bioptic drivers in their survey said the device is very helpful, 90 percent would continue to use the device even if not required to, 62 percent reported always using bioptics while driving, respondents drove a average of 222 miles a week, and 85 percent of their subjects under the age of 65 drove to work. The finding that only 62 percent of bioptic drivers always use their bioptic devices indicates the need for improved counseling by vision care professionals to stress the importance of using their bioptic devices 100 percent of the time while driving for increased safety.

Regarding the safety of bioptic drivers, Owsley et al. (1998) reported that "Speed of processing and selective attention was not associated with crash involvement. However, impaired divided attention resulted in a 2.3 times greater risk." Szlyk (2000) noted "significant improvement in visual skills with the use of a bioptic telescope and that the improvement was greater with training in the use of the lenses in a number of visual skills categories including driving-related skills."

State Regulations Regarding the Use of Bioptic Devices

There is tremendous variation among all 50 states and the District of Columbia in the U.S., while many states, 45 total, allow for the usage of bioptic telescopes for driving purposes in some fashion.

Red states - mandatory restrictions such as daytime only, speed or distance
Yellow states - no mandatory restrictions imposed with the use of bioptic lens
White states - do not allow the use of bioptic devices

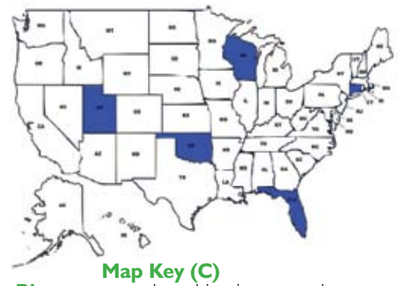
Blue states - states that have a daytime driving restriction at some level of VA

However, many of these states will not allow drivers to use the devices while taking their driver's examination. Many states impose mandatory restrictions such as a minimum acuity measurement, daytime-only driving, or even color vision restrictions. For example, Hawaii only considers 20/40 acuity in the better eye and bioptics cannot be used to meet acuity. If acuity and field standards are met, bioptics can be used. Mississippi considers drivers exemplifying 20/200 best corrected visual acuity and 20/70 with bioptic plus field requirements and bioptics can be used to pass vision and driving test. Massachusetts, Indiana and Alaska impose color vision tests on all drivers. ***(See maps C and D)***

Such restrictions may be unfounded in most cases. Many studies disagree with this procedure of using visual acuity as the primary decision factor in licensure, including AAO (2006) and Owsley and McGwin (1999). Color vision has been shown to have a very weak level of importance (Owsley and McGwin, 1999) in regards to safe driving. In many states, restrictions are mandatory, including daytime-only driving in opposition to the report by many low vision drivers that the glare from daytime conditions may be more uncomfortable than nighttime driving conditions. Many states use the visual acuity of the "best eye" while most drivers use both eyes, sometimes allowing for a greater degree of visual acuity as opposed to a single eye.

It should be noted that if a driver is licensed in one particular state (even bioptic drivers), the driver in question is free to drive in any state in the U.S. under their home state's licensure. Their license is recognized in any state in the U.S. unless the driver takes up permanent residence in a new and differing state. At that point, it is up to the driver to get a new license and follow the new residence state guidelines.

Some states can be viewed as progressive states regarding low vision driving and licensure. For example, Kansas does not require bioptics to be used for licensure of low vision drivers but recognizes their usage and will give an individual driving exam to any low vision driver (at their home residence location) who requests such a test. The examiner will consider the driver's unique driving situation and geographical living environment when determining licensure privileges and restrictions.



Map Key (C)
Blue states - where bioptics cannot be used at all.

States having regulations regarding color vision
Alaska
Indiana
Massachusetts

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GUEST COLUMN

William L. Park, OD, FAAO
Herb Simon, BS, MEQ, CDRI

Driving and Visual Impairment: What if it was your life?

Driving a motor vehicle is one of the most dangerous activities that the majority of people do each day. If one takes into account all the wars in which this country has participated, more Americans have been injured and killed in auto crashes than all those who have been injured or died on battle fields defending our freedom.

With visually impaired individuals, there is, and always will be, controversy about driving ability. The ability to drive is the ultimate form of independence in today's society. In the United States, a driver's license is intrinsically tied to quality of life. Of essence, elderly drivers are the most rapidly growing segment of the driving population in the United States.[1-9]

There are many important issues to consider regarding visually-impaired drivers. We must consider the impact that the ability of visually impaired individuals to drive can have on society. We have to determine if there should be different standards for re-licensure of the older adults or for people with progressive ocular or systemic disease (such as diabetes) and if the vision screening process performed by the motor vehicle administration incorporates tests that measure the appropriate dimensions of vision performance. [1-5]

First and foremost, it is important to ensure that visually-impaired individuals have obtained maximal correction for their eyes and that best corrected visual acuity (BCVA) has been achieved. The following areas should be tested during clinical evaluations to determine if the patient has the visual capability to drive safely: BCVA, recognition of low contrast objects (background and environment), glare sensitivity (i.e., headlights, traffic lights, brake lights), color perception, binocularity (use of both eyes), depth perception and visual fields. [2-7,9]

Environmental Low Contrast

Visual Confusion and Glare

Other areas of concern may include: assessment of visual function when performing activities of daily living as evaluated by certified ophthalmic personnel, a certified low vision therapist, orientation and mobility specialist, and/or by an occupational therapist; determination of whether the patient has psychosocial characteristics detrimental to driving; and determination of implications of any ocular/systemic diseases that are present that might be prohibitive to safe driving. Further evaluation to be addressed as indicated should include: visual perceptual testing, Mini Mental State Examination, assessment of extremity strength, range of motion and reaction time. [2-11]

These authors and colleagues found that there is an inappropriate focus on visual acuity. The focus should be more on visual processing, consideration of psychosocial implications and past/current driving skills that can lead to morbidity. For example, poor driver education of today's older adult drivers may be partly due to the fact that they received driver's education, if any, in the early 1940s, or in states where driver's education may have been lacking. We also find that visually impaired drivers often lack an active, ongoing, subjective thought process to compensate for their visual impairment.[2-11]

Areas of Concern

Are you good driver?

Driving a car can be likened to any sporting event where the player who commits the fewest errors is the winner. All of us commit many driving errors every time we get behind the wheel. We should be aware that there is a relationship between the number of errors that we commit while driving a motor vehicle and collisions. Errors that we make when we get behind the wheel include: spending too much time looking into the mirror, not adjusting our speed or position properly, failing to check our mirrors when facing a potential risk, not providing space to escape a potential risk, concentrating on something other than our driving, selecting the wrong information to process, improper braking techniques and tailgating.

Studies both in America and Europe clearly show that if a driver were given one-half of a second more time to respond to a challenge, fifty percent of all collisions could be avoided.

Increasing our Response Time

Increasing our response time means that we will have more time to process information and/or have more time or space to stop, steer or accelerate when faced with a challenge. Increasing our response time even a fraction of a second can make the difference between life and death.

First, increasing our response time would mean that we will have more time to search for information or that we will have increased the amount of time that we can see ahead. This gives us more time to process information that will allow us to pick up information sooner and prevent possible collisions. Being able to process information well, when operating a motor vehicle, is key to safe driving. The sooner we process information, the more time we will have to prepare and respond to a potential risk.

Speed Reduction is an Important Technique of Increasing Response Time

First, reducing speed will give us more time to search for information and will increase the amount of time that we can see ahead.

Increasing Braking Time

Second, reducing our speed will significantly reduce the amount of space needed when stopping or steering to avoid a collision. When given any amount of space, needing less space to control our vehicle will give us more time to execute the proper response.

Increasing Steering Time

As we have just noted, reducing the speed of a vehicle significantly increases response time by giving us more time to process information and more time to execute a braking response. If ever faced with an emergency, reducing our speed beforehand could allow us to execute an evasive maneuver with much better control.

In summary we should now know that decreasing speed will do the following:

- Increase response, processing, braking and steering time
- Allow us to steer less and more gradual when using an evasive technique
- Reduce the severity of a collision considerably
- Prevent us from taking risks that involve a minimal gain with great loss
- Lose minimal amount of time

Increasing Response Time by Adjusting Our Lane Position

A very important technique to increase response time is to adjust our lane position by increasing the distance between a potential risk and ourselves. Increasing the distance will not only give us more

continued on next page

time to respond but will reduce the amount of steering needed considerably, when evasive steering is needed.

Adjusting our speed and our position are two very important techniques for increasing our response time and for helping us to avoid collisions, and should be taught in all driver education courses.

Increasing Response Time by Developing Proper Search Habits

We must know how and where to search for information, what information to search for and when to search specific areas. Areas of search should include immediate front, periphery, and rear mirrors as well as inside the vehicle.

1. When searching for information directly in front of our vehicle, we should be able to process information at least 30 to 40 seconds ahead.
2. We cannot possibly properly prepare for the risk ahead if we are not aware of challenges that are approaching the rear and sides of our vehicle.
3. Mirrors should be checked every time we are about to make or anticipate making any change in speed or position.
4. Most emergencies begin when a risk from the periphery enters our immediate path or forces another vehicle to enter our path, or when a vehicle ahead stops abruptly.
5. We should concentrate on the information directly ahead of our vehicle. Anytime we need to process information in any other area, we should use only a quick glance to process that information, then immediately return our vision to directly ahead.
6. There are many factors that could affect our ability to process information or respond to that information. They can come to us from the environment, our vehicle and from our own self. Darkness, fog, a blinding sun or heavy rains are just a few of the many environmental factors that will make processing information more difficult. Many of these environmental factors can be minimized by the use of absorptive filter lenses. These lenses enhance contrast sensitivity, reduce or eliminate glare, and accentuate the visible red-green color spectrum helping us better identify traffic lights, brake lights and pedestrians in a poor contrast environment.
7. Factors within our own vehicle (such as poor functioning windshield wipers, heater, defroster and headlights) can limit our ability to process information. Anytime we have to deal with factors affecting our ability to process, we must reduce our speed.
8. The three characteristics that make one risk more dangerous than another are the probability that it will challenge us, the quickness in which it can challenge us and the consequences we will experience (damage, loss or injury).
9. Whenever we see brake lights ahead, we should assume the driver ahead sees something we do not see or that they are about to make a threatening maneuver.
10. The difference between perception and reality causes many collisions.

All of us must be aware that we can choose to be either a safe driver or an unsafe driver. When we concentrate on our driving, and anticipate and prepare for risk by adjusting our speed and position, we will be much safer. There are many among us who are very capable of driving safely who tailgate, do not concentrate, or who drive too fast. On the other hand, there are many who may have an impairment of some kind who, with effort, knowledge and understanding, can learn compensatory skills that enable them to become a safe driver.

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Continuance of Driving:
A Rare Rapid Positive Outcome Following a CVA

William L. Park, OD, FAAO

An 80-year-old female was referred for a rehabilitative consultation following a CVA of the right occipital lobe (CT scan) suffered on November 20, 2008.

Etiology for the CVA was malignant hypertension of 220/100 upon arrival at the ER of a local hospital and the patient was transferred upon stabilization to a larger hospital for continued care. Ophthalmological hospital consultation revealed mildly reduced visual acuity in the left eye and was noted to be normal in the right eye. Visual field evaluation revealed a "dense left-sided hemianopsia in the right and left eyes (loss of left side of visual field in each eye)."

Posterior segment evaluation revealed a relatively clear lens in the right and left eyes. There was no significant presentation of macular degeneration in either eye.

The patient was seen 15 days following the CVA as a result of a telephone conversation with the referring ophthalmologist. She had initially been advised that she should not drive based on her visual field and recovery was guarded. Health history was significant for 80 percent blockage of the right carotid artery (with an endartarectomy scheduled for two to three months), right and left knee replacement and arthritis.

The patient denied any visual difficulty with reading, other ADL tasks, meeting patient-stated goals or the presence of diplopia or field loss. The Geriatric Depression Scale (GDS) revealed a score of 0 and the Mini-Mental Status Examination (MMSE) revealed a score of 27 (highest positive score for both tests). Social history revealed she lived alone (widow of two years) in a rural area, with a son and daughter living within 10 miles of her home who were very supportive and visited her frequently.

STOCK PHOTOGRAPHY

Best-corrected visual acuity was OD 20/20+2, OS 20/25, OU 20/20 with excellent reading capability 40/. 3M (20/20), with minimal change of the habitual prescription. The patient was fluent with reading (continuous text).

Pelli Robson contrast sensitivity was OD log contrast 1.80, OS 1.65 and OU 1.95, indicating excellent low contrast identification of print, objects and environment. Extraocular motility was full and smooth, with excellent pursuits, saccades and rotations (eye movements). Worth 4 Dot revealed binocularity (use of both eyes) with no suppression. Stereopsis was 40 seconds of arc. Vergences revealed minimal 1 PD esophoria and1 PD right hyperphoria vertically at distance and near. Observation, evaluation (exam room) and a 100-foot walk with three turns (L-R-L) revealed no presence of neglect, abnormal body posture or presence of anterior-posterior or right-left Visual Midline Shift Syndrome.

Anterior segment evaluation revealed normal pupillary responses, with no presence of afferent papillary defect. The cornea, anterior chamber and lens were clear bilaterally. IOP and dilated fundus examination was deferred to her primary care optometric practitioner and retina specialist.

Goldmann visual fields were performed which indicated OD 60° nasally, 90° temporally, 60° inferiorly, 40° superiorly and OS 60° nasally, 90° temporally, 65° inferiorly and 40° superiorly (V4e, III2e).

Social history revealed her husband had died almost two years prior and that the patient lived in a rural area of Kansas and therefore needed to drive to maintain independence.

Primary activities of daily living goals were traveling to church, hair salon, visiting her daughter, healthcare appointments, grocery store and pharmacy, restaurants for lunch and dinner, and socialization at the community senior center.

The patient was taken on a road evaluation (initiated by and with the author (WP) present) on December 7, 2008, from her home located approximately five miles from a rural town (pop 3,500) in Kansas.

The total drive time was approximately 50 minutes. The course was primarily of dirt road and asphalt/cement. The conditions were good with clear to slightly cloudy sky. Attention was paid to a prior history of left homonymous hemianopsia secondary to a stroke suffered the prior month.

Throughout the evaluation, the patient demonstrated excellent processing skills, defensive driving, space and lane placement, right and left-hand turns, awareness of signal traffic lights recognition, and appropriate following distances.

Intentionally requested left turns were 16; approximate right-hand turns were 12. At no time during the initial phase of the road evaluation did she demonstrate any left-neglect. She identified such buildings and objects as multiple churches, business establishments, recognition of a flag at half-mast from approximately a quarter-mile away, a tractor, a car approaching her intersection from the left and timely recognition of all locations for which she needed to travel for community integration.

There were continuous ongoing questions regarding recognition of objects or events taking place to the left, right and central visual field as we are driving throughout the route.

There was recognition of the fact that she needed to slow down to a speed limit of 30 miles per hour (from 60mph speed limit) approximately 600 yards from the sign indicating she do so, which spoke for her visual acuity, as well as her cognitive process.

Throughout the entire evaluation, she drove defensively with excellent awareness of her surroundings, events and other stimuli. She was well aware of north, south, east and west directions.

There was an event coming back to her house (which was a circular route) where a large pickup truck came over the hill into her lane, travelling over the speed limit. She reacted immediately to this oncoming truck, veering to the right for avoidance, as that driver corrected his own reckless driving endeavor.

In summary, the patient demonstrated safe driving skills with excellent cognitive processing, visual awareness, searching techniques and response times to all surroundings and stimuli and appropriate driving actions throughout the 50-minute road evaluation. Recommendations were made that she see her optometrist as directed on her last consultation and her retina specialist for ophthalmological closure. I also recommended that a Goldmann visual field be performed in March of 2009.

This case indicates the social importance of driving to maintain quality of life despite age, as well as timely assessment to ensure that the issue was not compromised resulting in isolation and potential depression.

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ENVISION® Low Vision Rehabilitation

UPDATE

Envision Eyes 4 Others:

Literacy Program for Visually Impaired Youth

Visually impaired youth face special challenges when it comes to literacy. Over 70 percent of communication and learning is visual. Envision Eyes 4 Others is a unique program, pairing teachers and students from local school districts to read and record children's books onto CDs. The CDs can then be checked out from the Envision Low Vision Rehabilitation Center Eyes 4 Others Library. The program is designed to enhance the reading abilities of visually impaired students and as an opportunity for sighted students to share their love of reading and give back to their community. Over the past year, Envision has collaborated with the Junior League Women of Wichita, Kansas to expand the program by providing current digital recording technology and more opportunities for students to read audio books for children who are blind and visually impaired. Call the Envision Low Vision Rehabilitation Center for more information. **(316) 440-1600**

A student records a book during an Eyes 4 others reading event.

Bioptic Loan Program Available

As many as 10,000 Kansans with low vision are at risk of losing their driving privilege. In order to obtain a driver's license in the state of Kansas, individuals with low vision of 20/60 in the better eye need to submit a doctor's report. Drivers with less than 20/60 visual acuity must submit a doctor's statement of ability to drive as well as pass a driving performance evaluation. With the help of caring eye doctors and training from low vision specialists in optic devices, patients may be able to drive despite their low vision. A bioptic telescope may be prescribed for low vision patients by their eye doctor. Envision now offers a bioptic loan program and training in its use by a certified orientation and mobility instructor, certified low vision therapist or licensed occupational therapist. Call the Envision Low Vision Rehabilitation Center for more information. **(316) 440-1600**

The Jeanne Mishkin Contact Lens Fund

Penny Mishkin understands what it's like to be different. Born with extreme near sightedness, Penny spent much of her childhood wearing coke-bottle glasses and sitting close to the chalkboard. She felt insecure and embarrassed. After searching for a way to help children with visual impairments for more than five years, Penny found Envision. While attending a low vision conference in Montreal, Penny met Dr. William Park, an independent low vision optometrist from Wichita, Kansas who is a staunch supporter of fitting children with visual impairments with contact lenses. When Penny asked how she could help, Dr. Park suggested contacting the Envision Foundation. The Jeanne Mishkin Contact Lens Fund for Pediatrics is named after Penny's mother. This Envision Foundation fund ensures that children with visual impairments can receive contact lenses, regardless of their family's financial status. For fund eligibility requirements and more information, call the Envision Low Vision Rehabilitation Center.
(316) 440-1600

ENVISION® Low Vision Rehabilitation

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To submit an article or case study to be considered for publication in Visibility, please contact Michael Epp, Director of Outreach & Continuing Education, **(316) 440-1515** or **michael.epp@envisionus.com.**

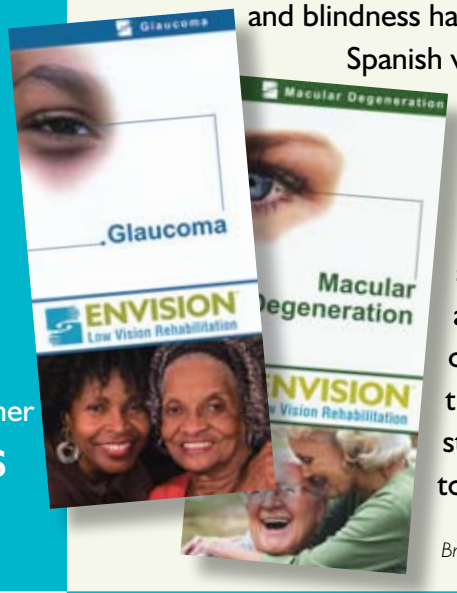
Envision Outreach

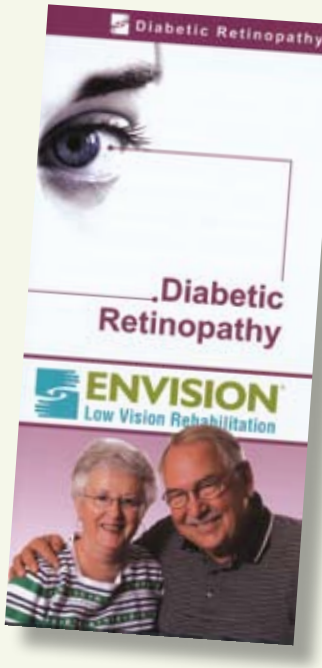
The Envision Low Vision Rehabilitation Center's division of Outreach and Continuing Education is having a busy spring season. Attending health fairs, professional conferences and making community presentations, chances are you have seen our smiling faces. Envision's outreach programs are designed to provide information to healthcare professionals and people with vision loss about vision loss prevention, eye diseases that cause vision loss and the many programs and services that are available at the Envision Low Vision Rehabilitation Center. If you would like us to be a part of your event, provide a speaking engagement, or give a tour of the Envision Low Vision Rehabilitation Center, contact **Michael Epp**, Director, Outreach & Continuing Education at **michael.epp@envisionus.com** or **(316) 440-1600** *(Bilingual Spanish programs available)*.

Jacob Reese, ABOC, NCLEC and Karen Kendrick, OTR/L, CLVT help at Envision's health fair in January 2009.

New Eye Disease Brochures Available

As a component of Envision's public education initiative, new brochures on the etiology, prevention and common treatments of the leading eye diseases that cause vision loss and blindness have been produced. Spanish versions are also available. Brochures on diabetic retinopathy, macular degeneration, glaucoma, retinitis pigmentosa, stroke and cataracts are available. Multiple copies can be ordered through the **Envision Everyday** store: **(316) 440-1680,** toll free **(888) 311-2299**





Brochures shown are not actual size.

About Envision Low Vision Rehabilitation

The Envision Low Vision Rehabilitation Center provides comprehensive, multidisciplinary low vision rehabilitation and services for people with vision loss. The center's goal is to help patients maximize their independence and realize their best functional vision. The center achieves this by offering a comprehensive low vision rehabilitation program unique to the needs of each patient.

REQUEST COPIES OF VISIBILITY

If you would like to share Visibility with a colleague, please request a copy from Michael Epp, Director of Outreach & Continuing Education at michael.epp@envisionus.com or call (316) 440-1515. Visiblity is also available online at www.envisionus.com/Visibility.