Continued Care for the Visually Impaired Patient

"Past & Present"

The Past: In 2006, the COA Low Vision Committee received a Healthy Eyes – Healthy People grant to provide improved quality care to, arguably, the most underserved population in eye care – the visually impaired patient.

The Low Vision Committee created CCVIP (Continued Care for the Visually Impaired Patient). A list of willing and able optometrists was created to provide referral-based low vision care throughout the state. This provider list was distributed to all COA optometrists, as well as Colorado ophthalmologists, in an effort to continue the care for all patients dealing with eye disease resulting in permanent vision loss. The current provider list may be obtained by logging into the COA website at www.visioncare.org, and then clicking on “Programs – CCVIP” and clicking on the CCVIP Provider List link.

The Present: With the advancement of anti-VEGF pharmaceuticals, more seniors with macular degeneration are maintaining better functional vision with acuities staying better than 20/200.¹ Since many of these patients are seeing their retina specialists every 1-3 months and receiving on-going anti-VEGF treatment, the fact that they may be having difficulty driving and reading small and fine print may go undetected.

In 2014, the Low Vision Committee introduced “CCVIP Early Intervention” in an effort to help ALL Colorado optometrists care for patients who have early vision loss in the 20/25 to 20/60 range. If and when vision worsens, optometrists are encouraged to refer to a COA CCVIP provider in their area.

The following CCVIP Early Intervention Pearls are intended to provide you with the information you need to provide quality and continued care for your visually impaired patients.

Sincerely,

The COA Low Vision Committee (February, 2014)

1. Two years following the onset of the MARINA Trial (Minimally Classic/Occult Trial of the Anti-VEGF Antibody Ranibizumab in the Treatment of Neovascular Age-Related Macular Degeneration) 15% of patients had acuity of less than 20/200. 38% of patients had acuities of 20/40 or better leaving 47% with acuities worse than 20/40 and better than 20/200.

CCVIP Early Intervention Pearls

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Functional History: Asking the Questions!

CCVIP Early Intervention Pearl

For many optometrists, an obstacle in providing a good outcome for a patient is "getting out of the office" and "getting into the patient's world". This obstacle is even greater when the patient is visually impaired.

Whether your staff or you are asking the questions, obtaining a few more pieces of information may be critical to a successful outcome with your sight-impaired patient.

- Are you living in your own home? By yourself? (Do you have a good support system?)
- Are you having any problems reading your mail, the newspaper or magazines?
- Are you able to see fine print on food and medicine labels?
- Where do you do your reading? Easy chair, couch, table, desk, bed?
- What kind of lighting do you use? Task lamp, ceiling, traditional?
- Do you use a computer? Desktop, laptop or tablet? What distance do you sit from the screen?
- Are you still driving? Have you restricted your driving in any way, i.e. night driving or freeways? Do you wear sunglasses?

These types of questions allow you to provide a better, more specific outcome for your patients as well as letting them know that you are interested in "their functional world" and not just the world of your office. Your patients will appreciate this personalized care and you will appreciate the lack of frustration and spectacle Rx remakes.

Presented by the COA Low Vision Committee
March, 2014
Acuities: Hearing is Believing!

CCVIP Early Intervention Pearl

Listening to a patient read distance and near acuities provides valuable insight into their ability to read everyday material such as the morning newspaper. Are they "sailing through" the eye chart with no pauses or breaks, or are the "bogging down" at a certain level of detail?

When a patient who is dealing with a visual impairment starts slowing and/or missing letters on the chart, they may be reaching their threshold acuity. For a fully sighted patient, this threshold may be 20/15, but for a visually impaired patient, this threshold may be 20/50 or 20/60.

Reading print requires the following threshold visual acuities:

- Fine Print (medicine bottles, label directions, phone numbers, etc.) requires 20/30 – 20/40
- Small Print (newspaper & magazine text) requires 20/50 – 20/60
- Large Print (Books, Reader's Digest, Guidepost, Bible) requires 20/70 – 20/100

If the patient is best-corrected to 20/60, understand that they will not be able to read newprint with good speed or accuracy. Confirm this by using a standard newspaper or magazine and listen to the patient read. If slow and labored, then provide "early intervention" options (i.e. increased lighting, stronger add, hand or stand magnifiers) to help improve the reading ability. Without this early intervention, the patient will slowly lose interest in reading due to eye fatigue, slower reading speed and overall frustration. They may also become more dependent on others to provide reading assistance.

Take-Home Message: When a patient is not correctable to 20/20, listen to them read your eye charts, newspaper or other reading material to determine their threshold. Once you know their threshold, you may begin offering options and provide the continued care they need.

Presented by the COA Low Vision Committee
February, 2014
Refraction: Clarify before you Magnify!

CCVIP Early Intervention Pearl

A good refraction is the starting point for improving function in a visually impaired person. It's important to clarify before you magnify.

When refracting a person who is not correctable to 20/20, remember the "just noticeable difference" (JND). JND is the amount of change in power of lenses presented that a person can tell a difference in clarity. For a person with 20/50 vision, a good starting point would be to show a 0.50D change when presenting the lens choices (the JND is 0.50D). A person with 20/100 acuity may have a JND of 1.00D.

Using a trial-frame may allow the patient to move his/her head as needed and provides a larger field of view than the phoropter. Make sure that the visual acuity lines used are above the patient’s threshold acuities. As you fine-tune the refraction, recheck VAs and adjust JND when needed.

Once finished, it is helpful to compare current glasses to the new refraction to give the patient an idea of how much of an improvement they can expect (or not) if they invest in new glasses. Have them look at the acuity chart, but also at “real world” objects, like faces or outside.

Patients with central vision loss need to rely on peripheral vision to see detail better. Even if a person’s acuity is severely reduced, it can be beneficial to provide full correction instead of using a balance lens.

Take-Home Message: Optometrists are comfortable providing good refractions to our patients as we do this every day. Don’t forget that the visually-impaired patient appreciates any improvement in acuity and will be grateful for this extra attention and testing.

Presented by the COA Low Vision Committee
April, 2014
The Brilliance of Illumination

CCVIP Early Intervention Pearl

For many patients dealing with early vision loss, adding additional task lighting is an important next step in helping them continue to read small and fine print.

After completing your refraction, have the patient read the near acuity card at the appropriate distance using standard, overhead lighting. Then, add additional light from your lane’s task lamp and evaluate the result.

What's In Your Lamp?

There are three main types of light bulbs: Incandescent (including halogen), fluorescent (including compact fluorescent) and LED. Due to their heat production and poor energy efficiency, incandescent bulbs are on the way out. Compact fluorescents, which were the only other option for quite a few years, also have some disadvantages, such as a slow "warm up" time before they reach maximum brightness. LEDs have been improved significantly in recent years, and are by far the most energy efficient and cost effective, because of their energy efficiency and long life, which is roughly 20 times longer than an incandescent and 3 times longer than compact fluorescent.

Remember that the "wattage" rating of a light bulb is only a measure of the electricity it uses, not the amount of light (luminous flux) it puts out. The following chart provides a comparison of luminous flux (or brightness) and wattage (power consumption) of the three types of bulbs:

<table>
<thead>
<tr>
<th>Luminous Flux</th>
<th>Incandescent</th>
<th>Compact Fluorescent</th>
<th>LED</th>
</tr>
</thead>
<tbody>
<tr>
<td>400 to 500 lumens</td>
<td>40 watts</td>
<td>8 to 12 watts</td>
<td>6 to 7 watts</td>
</tr>
<tr>
<td>650 to 850 lumens</td>
<td>60 watts</td>
<td>13 to 18 watts</td>
<td>7 to 10 watts</td>
</tr>
<tr>
<td>1000 to 1400 lumens</td>
<td>75 watts</td>
<td>18 to 22 watts</td>
<td>12 to 13 watts</td>
</tr>
<tr>
<td>1450 to 1700 lumens</td>
<td>100 watts</td>
<td>23 to 30 watts</td>
<td>14 to 20 watts</td>
</tr>
<tr>
<td>2700+ lumens</td>
<td>150 watts</td>
<td>30 to 55 watts</td>
<td>25 to 28 watts</td>
</tr>
</tbody>
</table>

Color Temperature

The spectral qualities of light can also be important to patients, and it's difficult to know which color temperature a patient might prefer. Many stores that sell bulbs have a demonstration area where you can try various color temperatures. In developing LED bulbs, the manufacturers have been good about listing the color temperature on the package. "Warm white" (about 2,000 to 3,000K) is most similar to incandescent, and includes more wavelengths from the red end of the spectrum. "Cool white" or "bright white" is more neutral at about 3,100 to 4,500K and "daylight" (4,600 to 6,500K) includes more wavelengths from the blue end of the spectrum. Some LED lamps have arrays of small LEDs with different color temperatures, which can be combined to provide a variety of color temperatures for the patient to choose from.
You *Can* Take It With You

Some patients have a need for a portable light source. Many patients with macular degeneration (especially those with foveal sparing or "ring scotoma") and also many with glaucoma, carry a small LED flashlight everywhere they go and use it to assist with short term reading. Battery-powered portable LED lamps are used by some people to see their food if they eat in a dark restaurant.

Patients with nyctalopia (such as Retinitis Pigmentosa) may require an extremely bright flashlight to assist with outdoor night time mobility, finding items in drawers and closets or fixing things around the house. These 1000 and 2000 lumen lights (usually with low, medium and high settings) come in hand-held and head-mounted styles and may be battery operated or are rechargeable.

**Take-Home Message**

Adding additional task lighting on your near acuity card may make a significant impact to your patient’s reading function. Once you determine its impact – you can make proper recommendation for patients to improve their room and reading lights within their home & work settings. Often times if a patient can read and function in the exam room, but reports that they cannot read at home, the issue is usually due to poor lighting.

Presented by the COA Low Vision Committee
May, 2014; Updated August, 2018
What Do You Do?

CCVIP Early Intervention Pearl

You have provided the best refraction possible, you have improved the illumination on the reading chart and you know Mrs. Smith, your pleasant 80 year old patient, wants to read her morning newspaper and weekly magazine in her favorite chair. The problem is, you have heard her read your acuity chart and you know her best corrected acuity of 20/60 (due to her dry macular degeneration) and the +3.00 add in your phoropter will not be enough for her to comfortably read newsprint.

What do you do?

Your first response may be to “refer” the patient to one of COA’s CCVIP providers. Although this may be appropriate, the reality is that oftentimes patients will not follow through with your referral (lack of transportation, involvement of other family members, tired of “more” doctors) and they will struggle, becoming needlessly dependent on others or desperately trying any magnifier they find at the local drug store.

Over the next few months we will offer “Pearls” to help you implement “early intervention” strategies to help Mrs. Smith read her newspaper and magazines, see her medicine bottles, pay her bills and read her recipes - keeping her independent, safe, active and productive.

These “Pearls” will include:

- Increasing power of reading glasses and bifocals (Relative Distance Magnification)
- Prescribing low power (4D – 10D) hand-held and stand magnification (Angular Magnification)
- Discussing and prescribing for the use of large print publications and digital reading on e-books, desk-top and tablet computers (Relative Size Magnification)

Take-Home Message: Open your mind to providing extended professional care and services to your patients with early vision loss. You, your practice and Mrs. Smith will be very glad you did.

Presented by the COA Low Vision Committee
June, 2014

To access previous “CCVIP Pearls” go to www.visioncare.org and click on the CCVIP Logo; sign into your account & then, on the Low Vision page, scroll down to the list under “CCVIP Pearls”
“Power on the Nose”

Relative Distance Magnification

CCVIP Early Intervention Pearl

Mrs. Smith, your 80 year old patient, wants to read her daily newspaper, however, your best refraction with a +2.50 add is only allowing her to access 20/60 print even with improved task lighting. What do you do?

The first option may be to use “relative distance magnification”. If the near target is moved closer to the eye, the target becomes relatively larger. Your job is to provide the proper reading Rx to focus the needed distance. If a +2.50 is providing Mrs. Smith 20/60 at 40 cm, you would expect Mrs. Smith to read 20/30 at 20 cm with a +5.00 add. Problem solved – correct? Not quite.

Many patients are not comfortable reading at distances that are closer than they are accustomed. For 75 years, Mrs. Smith has read at 40 cm and now you are asking her to read at 20 cm. This closer distance may elicit eye strain and a host of other issues.

“Pump up the Plus - Gradually”

Gradually building plus power to the Rx (+0.50 increments) may help Mrs. Smith acclimate to the changes the visual system may encounter. Your end-goal may be a +5.00 at 20 cm but you may need to slowly add the power having Mrs. Smith appreciate the improvement in seeing smaller print along the way.

“Using a Trial Frame”: When evaluating adds higher than +2.50, the use of your trial frame may be very beneficial. The trial frame will give the patient a more realistic idea of how the glasses will work and can yield significant information regarding functional adaptation, working distance issues and issues related to binocular dysfunction.

Flat-top vs. Progressive Bifocals: Progressive add lenses can make it more difficult for a person with central vision loss to find the right head position to best utilize the reading portion of the lens. Switching to a flat-top design may make it easier for a person to know which part of the lens through which he/she is viewing.

A 2nd Pair of Glasses: Although add powers stronger than +3.00 are available, you may want to consider prescribing separate reading glasses since most people perform many daily tasks (i.e. eating, washing dishes, looking on shelves and in cabinets) at conventional 33-40 cm working distances. Separate reading glasses will provide a larger field of view than bifocals and more comfortable ergonomics.

Take Home Message: Use “relative distance magnification” to your advantage and Increase the plus power in the reading prescription of your patient who is dealing with early visual impairment. Provide this option in conjunction with other higher plus options (hand-held and stand magnifiers will be discussed in the coming months). Determine the improvement in reading function by listening to a patient read a newspaper or magazine, and provide thorough explanations as to the proper use of the new Rx to avoid patient confusion once they leave your office.

Presented by the COA Low Vision Committee
June, 2014
“Power in a Hand-Held”
Early Intervention Using Angular Magnification

CCVIP Early Intervention Pearl

Our last CCVIP article left off with your 80 year old patient, Mrs. Smith, needing to read her daily newspaper. She is best corrected to 20/60 but you are trying to have her read at least 20/40 in order for her to reach her desired goal. You have introduced her to a +5.00 reading Rx (August CCVIP article) but she was “struggling” with the closer reading distance – what do you do?

“Pump up the Plus – in a Hand-Held”:

Most optometric offices only provide options to their patients with early visual impairment that are spectacle mounted which requires decreasing working distance (using relative distance magnification). Providing options to patients that are not within spectacles may be the answer for many patients. Typically, using lenses ranging from 3D – 10D will be sufficient to meet most of the reading needs of the patient with early vision loss (20/25-20/60).

When your patient is working with hand-held magnifiers (magnifiers NOT meant to sit directly on the reading material), remind them of these points:

- The magnifier may be used with the patient’s distance RX or bifocal. The field of view and illumination (when included with the magnifier) are increased when using the bifocal
- Hand-Held magnification can be non-illuminated or illuminated. Illuminated hand-held magnifiers typically use LED lighting and are great in dim environments
- Begin by holding the magnifier against the printed page and slowly pull the lens away from the page to maximize clarity and magnification
- Bringing both the magnifying lens and the material closer to the nose will increase the field of view through the lens
- To improve postural comfort, bend the “elbows” and not the “back”
- If using task lighting with a non-illuminated magnifier, illuminate the task, not the magnifying lens
- Large diameter hand-held devices may be used for reading continuous text (newspapers, magazines) and small diameter lenses may be used for spotting fine print (medicine bottles, labels, menus) for short periods time

Watch and Listen:

Once proper instruction is given, watch the reaction of the patient and listen to their reading of continuous text. Is it slow and labored or is it smooth and accurate? Does added illumination improve reading ability? Compare their reading ability vs. the stronger reading glasses. What is your choice? What is their choice? Further training can be completed by your technician once you determine the proper prescriptive device.

Take Home Message: Optometrists are good at prescribing spectacle Rx’s, however, for many patients with early visual impairment; hand-held magnification may provide a better option. Don’t let the patient figure this out on their own, at the local drug store where most lenses are the same power, 3-4D. Instead, provide professional guidance and offer hand-held options while the patient is in your chair. Help them determine the best device and help them move forward in dealing with their visual impairment.
With your professional guidance, Mrs. Smith, your 80 year old patient, is trying to determine the best optical device for reading her daily newspaper. She is best corrected to 20/60 but you are trying to have her read at least 20/40 in order for her to reach her desired goal. You have introduced her to a +5.00 reading Rx, but she was “struggling” with the closer reading distance. You have also introduced her to hand-held magnification. She read newsprint smoothly and accurately, however, her arthritis and slight hand tremor made holding the device for an extended period difficult – what do you do?

“Pump up the Plus – on a Stand”:

Stand magnifiers, ranging from 7D – 8D, will be sufficient to meet most of the small print reading needs of the patient with early vision loss (20/25-20/60).

When your patient is working with stand magnifiers remind them of these points:

- Stand magnifiers are designed to be used with a conventional add (+2.50 - +3.50) or accommodation at a 25 – 40cm working distance.
- Stand magnification can be non-illuminated or illuminated. Illuminated stand magnifiers typically use LED bulbs but can also be found with incandescent & halogen bulbs.
- Begin by placing the stand magnifier directly against the printed page and keep it there. Slowly slide the magnifier across the reading material.
- The field of view through a 7D – 8D stand magnifier is usually large enough to view an entire newspaper or magazine column without any left-to-right movement.
- To improve postural comfort, a reading stand may be used.
- If using task lighting with a non-illuminated stand magnifier, illuminate the task, not the magnifying lens. Overhead lighting may cause reflections and glare and should be avoided.
- The stand magnifier is portable enough to use within the home setting. A hand-held magnifier is a more portable choice for use outside of the home setting (carried in a purse or pocket).

Watch and Listen:

Once proper instruction is given, watch the reaction of Mrs. Smith and listen to her read continuous text. Is it slow and labored or is it smooth and accurate? Does the stand neutralize her hand tremor? Compare her reading ability vs. the stronger reading glasses and hand-held. What is your choice? What is her choice? Further training can be completed by your technician once you determine the proper prescriptive device.

Take Home Message: Lower power stand magnifiers have a larger field of view and stability for patients reading continuous text materials for an extended period of time. Provide professional guidance and offer stand magnification as another option while the patient is in your chair. Help them determine the best device and help them move forward in dealing with their visual impairment.

Presented by the COA Low Vision Committee
October, 2014
"The Economics of Early Intervention"

CCVIP Pearl

Previous CCVIP Pearls have discussed options, above and beyond conventional glasses, to maintain and improve visual function for patients dealing with early vision loss (20/25 – 20/60). These options have included the evaluation of:

- Increased illumination
- Higher plus reading glasses
- Hand-held and Stand magnification

At this point, some of you may be saying your schedule will not allow you to spend the extra time needed to work with this patient and it economically does not make sense to provide continued care for this patient.

Before you make the “choice” as to whether or not to continue care or refer, consider the following:

Gain Revenue

- **Schedule a Follow-Up:** Many patients are fatigued after your initial examination, and evaluating additional devices may be more than you or they can handle. Scheduling a follow-up appointment to help them better understand the available options will help both you and your patient determine the benefit of each option, and you will be compensated for your additional time. Take the time to prescribe those options that work best.
- **Prescribe separate reading glasses and/or sunglasses**
- **Prescribe hand-held and/or stand magnification**
- **Retain your patient, their family members and gain referrals:** By spending additional time (follow-up visit) with your patient and providing continued care, you are partnering with them as they move along in their vision loss process. The patient understands that you are doing all you can to prevent additional loss as well as helping them avoid unnecessary disability. By providing this continued care you not only avoid losing the patient to another practice, but you generate word-of-mouth referrals.

**Take Home Message:** The professional benefit of providing optimal care for your patients dealing with early vision loss is very rewarding on many levels. The economic benefit to your practice is rewarding as well.

Presented by the COA Low Vision Committee
November, 2014

For a list of companies distributing “early-intervention” devices (3D – 10D lenses) as well as other low vision resources; go to www.visioncare.org, click on the CCVIP Logo and then the “Low Vision Resources” link

To access links to previous “CCVIP Pearls” go to www.visioncare.org and click on the CCVIP Logo
E-Books & Tablets

"Relative Size Magnification"

CCVIP Pearl

In previous CCVIP articles, we have discussed using relative distance magnification to move print closer and focus it using a stronger reading lens or bifocal. We have also discussed using angular magnification (hand-held and stand magnifiers) to create an enlarged image.

"Relative Size Magnification" increases the size of an object so it may be easier to see for a person dealing with early visual impairment. Large print books and magazines have been on the market for many years and can still be found in libraries and bookstores. However, their availability is limited.

The acceleration of digital devices, such as e-readers and tablet computers, allow your patients to customize millions of books, magazines and documents to their preferred print size, font, spacing and even background color. Your patients are able to choose the content they wish to read, and create a format that makes the print accessible and enjoyable.

If your patient is using an electronic reader, remind them to Clarify before they Magnify. Although, the print may be accessible due to its increased size, clarity comes from proper focus by their habitual reading prescription or accommodation. By improving clarity, the relative print size may be decreased and more information may appear on the digital screen.

Take Home Message: Ask your patient's if they are using electronic digital readers such as a Kindle or iPad. If so, ensure that they are using a proper reading prescription to keep the screen in optimal focus. These digital devices may be extremely beneficial and are another tool that may be implemented for your visually impaired patients.

Presented by the COA Low Vision Committee
December, 2014

For a list of companies distributing "early-intervention" devices (3D – 10D lenses) as well as other low vision resources; go to www.visioncare.org, click on the CCVIP Logo and then the "Low Vision Resources" link

To access links to previous "CCVIP Pearls" go t www.visioncare.org and click on the CCVIP Logo
“Honey, what’s the score?”
Distance Strategies for Early Vision Loss
CCVIP Pearl

Mr. & Mrs. Jones settle into their favorite recliners just in time to catch the kick-off of the Broncos vs. Patriots game. As the game unfolds, Mr. Jones, who is experiencing early vision loss due to macular degeneration, says, “I can see the players but I can’t read the score or how much time is remaining in the game – it is just too darn small.” On Monday morning he picks up the phone and calls your office for advice – what do you tell him?

“Relative Size Magnification”: Increasing the size of the television set from 27” to 54” will provide 2X magnification which may be just enough to make the detailed print on the screen accessible. The cost of purchasing the larger screen TV may be an obstacle however.

“Relative Distance Magnification”: Instructing Mr. Jones to decrease his viewing distance from his preferred 10 feet to 5 feet will also provide a 2X level of magnification without the added cost. High definition television signals provide improved clarity with closer viewing distances compared to the older CRT screens. Moving closer may mean using a different and less comfortable chair which may be an issue. If they live alone, moving closer may not be an issue but you may block the view of others in the room by sitting closer. The “myth” that it is harmful to sit closer to the TV is no longer an issue with television technology improvements.

“Angular Magnification for Spotting”: Prescribing a 2.5X or 4X hand-held monocular will allow him to spot detail on the television screen (and other places in and out of the home) for short periods of time.

“Angular Magnification for Continuous Viewing”: Most low vision equipment distributors (see link below) carry “TV specs”. These 2.1X spectacle binoculars are lightweight, easy to use, provide a wide field of view, are cost effective ($100 - $200 retail) and may be worn for an entire movie or ballgame with good comfort.

Hand-Held Binoculars: Although not good for inside TV viewing, a pair of hand-held binoculars can be a valuable asset for patients when viewing their bird feeder, site-seeing or going to a game at Sports Authority Field. They range in power from 4X – 10X and can be found in a range of sizes, some more portable than others. Remember that stronger powered monoculars and binoculars create smaller visual fields and less image stabilization.

Take Home Message: For many patients with visual impairment, they rely on others to spot distance detail. This creates a feeling of dependency and a lack of enjoyment of the TV and the “world” around them. Providing simple, effective strategies early on in the vision loss process helps the patient, not only see the TV better, but understand there are strategies and devices they can use to enjoy and interact with their world.

Presented by the COA Low Vision Committee
January , 2015

CCVIP
Continued Care for the Visually Impaired Patient
Colorado Optometric Association Low Vision Committee
Mr. Jones enters your office for his annual eye exam. His vision has not been corrected to 20/20 for many years due to his macular degeneration but it has always been 20/40 or better. This year, after your best refraction, the vision in his better-seeing eye is 20/60. You know that the Department of Motor Vehicles requires 20/40 central vision or better in one eye to drive without restrictions, so you ask him if he is still driving and he reports: "Driving is no problem doc, and my license doesn’t expire for 3 more years." What is your response?

Some doctors feel that if a patient has no concerns about their driving, then they do not want to probe any further. A few more questions, however, will not only help you better understand the current driving situation, but also help Mr. Jones better understand his situation.

Ask some "probing" questions:
- If you took your eye test at the DMV today, do you think you would pass the test?
- Are you having difficulty seeing street signs, traffic lights, and left turn signals?
- Are you having difficulty driving at night?
- Are you less comfortable/confident driving in unfamiliar areas?
- Does the glare from sunlight bother you?
- Are you having difficulty seeing bicyclists and pedestrians?
- Have you had any accidents or close calls?

If Mr. Jones is honest with you, many of the above questions should be answered "yes". This gives you the opportunity to discuss strategies to help maintain safe driving. Some of these strategies will be discussed next month (Driving at 20/60, Part 2).

Self-Restricting: A critical step is to help patients understand proper restrictions in their driving which will help them maintain safe driving and public safety. The COA Low Vision Committee has information available to help you address this issue with your patients for both central and peripheral vision loss. Go to www.visioncare.org; after you sign in, go to "Programs - CCVIP".

Take Home Message: Asking probing questions about your patient's current driving habits will uncover valuable information which will assist you in discussing strategies to help ensure safe and effective driving.

Presented by the COA Low Vision Committee
February, 2015

To access links to previous "CCVIP Pearls" go to www.visioncare.org and click on the CCVIP Logo
"Still Driving at 20/60?"
Part 2
Strategies for Drivers with Early Vision Loss
CCVIP Pearl

Last month, our CCVIP article discussed your hypothetical patient, Mr. Jones, who is still driving with his best corrected vision at 20/60. Our recommendation was for you to ask "probing" questions to help you and Mr. Jones better understand the current driving situation.

"The Questions":

- **If you took your eye test at the DMV today, do you think you would pass the test?**
  - Most patients with early visual impairment do not realize that their vision has dropped below the required level of 20/40 (best eye, best corrected). Helping them understand where their vision loss is, relative to DMV regulations, can be a good starting point in addressing concerns.

- **Are you having difficulty seeing street & traffic signs? Are you less comfortable/confident driving in unfamiliar areas?**
  - Many street and traffic signs are printed assuming 20/40 acuity at a normal intersection distance. Drivers with early visual impairment will report that they need to be much closer to signs to correctly identify them. Help your patient understand that driving in "familiar areas" will allow them to be more attentive to their driving task and not worry about their location. The use of an auditory GPS on their cell phone or a stand-alone GPS may be helpful in pre-planning their route and announcing upcoming turns and directions.

- **Are you having difficulty driving at night?**
  - Contrast may play an important part in safe driving, especially for seniors dealing with macular degeneration. Patients with visual impairment often have poor contrast sensitivity making them less confident and safe when driving at dusk and/or night.

- **Does the glare from sunlight bother you? Are you having difficulty seeing traffic lights and turn signals?**
  - Disabling glare may make driving in sunny conditions uncomfortable, especially for your visually impaired patient. Discussing proper sun protection and glare control is essential in helping them be prepared for ever changing lighting conditions. Keeping the windshield clean, inside and out, will also help to minimize glare/contrast issues.

- **Are you having difficulty seeing bicyclists and pedestrians?**
  - Many patients may report being comfortable in seeing motorized vehicles on the road. They may, however, be taken off guard by bicyclists and pedestrians who they are not expecting to see on their driving route. Make them aware of these potential hazards and how to implement scanning techniques to avoid problems.

- **Have you had problems with maintaining lane position, any new scrapes or dings on the vehicle? Have you had any accidents or close calls?**
  - Help your patients understand how their visual impairment may have been involved with minor incidents or potentially dangerous and life-changing situations.

**Take Home Message:** Some patients will wait for an accident or a "close call" to occur before they consider restricting or ceasing their driving. Help your patients be Proactive in their driving and put in place proper restrictions and strategies to help keep them, and others, safe.

Presented by the COA Low Vision Committee
March, 2015
“Still Driving with 20°?”
Part 3
Strategies for Drivers with Peripheral Vision Loss
CCVIP Pearl

Bob is a 50 year old male living in rural, eastern Colorado and has been diagnosed with Retinitis Pigmentosa for many years. He reports he has not seen an eye doctor for over ten years and he presents to you with best-corrected central vision 20/30 OD & OS. A Humphrey 30-2 visual field reveals a symmetrical field loss with a 20° central area of vision remaining. He states that he passed his Department of Motor Vehicle vision (DMV) screening about 6 months ago and he hasn’t driven at night for many years. What do you do?

Counseling a patient with visual field loss (VFL) can be challenging. Many times the patient’s loss of vision is gradual and they make adjustments to their driving (more attentive, drive during less traffic times of day, etc.) to compensate for their loss of peripheral vision. The vision screening at DMV may miss the field loss due to intact temporal crescents or peripheral islands. Currently, the DMV visual field screening is limited to 55° temporal and 35° nasal. If a driver is not able to meet this minimum requirement, the driver fails the vision screening and is referred to their eye care professional.

"The Dialogue":

✓ Although the DMV screens peripheral vision, there is no legal minimum field requirement, and it is the doctor’s decision when completing a DMV driving form.
✓ The greater the extent of peripheral vision loss, the riskier the driving. Commercial driver’s license requires a 70° horizontal visual field. Past studies show twice the rate of collisions when the visual field loss is severe (Johnson & Keltner, 1983).
✓ Help your patients understand where they are lacking vision and how to use scanning techniques as well as their side and rearview mirrors to assist them. One strategy is have the visually impaired driver sit in a stationary car in a parking lot and have a family member walk around the vehicle to determine blind spots.
✓ Bicyclists and pedestrians offer challenges to drivers with VFL. Even in local neighborhoods or parking lots, extreme caution needs to be implemented.
✓ Field-expansion devices and prisms have not been shown to improve visual functioning when driving with a visual field loss.
✓ Newer vehicles offer “crash-avoidance technology” which may significantly reduce the risk of human error for all drivers – and especially for those with visual impairment.

A technical report was published by the Department of Transportation in 2009 (Driving with Visual Field Loss: Exploratory Simulation Study; Lockhart, Boyle & Wilkinson). For those of you wanting more comprehensive information concerning driving with visual field loss, please research this article.

Self-Restricting Guidelines: Help your patients understand proper restrictions in their driving which will help them maintain safe driving and public safety. The COA Low Vision Committee has information and guidelines available to help you address this issue with your patients for both central and peripheral vision loss. Go to www.visioncare.org; after you sign in, go to: Programs - CCVIP.

Take Home Message: Some patients may present to your office with good central vision but significant peripheral vision loss and they do not realize the extent of the visual world they are missing. Many times they may wait for an accident or a "close call" to occur before they consider restricting or ceasing their driving. Help your patients be PROACTIVE in their driving and put in place proper restrictions and strategies to help keep them, and others, safe.

Presented by the COA Low Vision Committee
April, 2015
Using Automated Static Threshold Perimetry to Determine Legal Blindness
CCVIP Pearl

In July, 2007, the use of automated static threshold perimetry was allowed to determine if a patient qualified for social security disability as being legally blind. The following steps will help you determine this finding for your patients in need:

STEP 1: Is the automated static threshold perimetry test acceptable?
- Must use a white, size III, Goldmann stimulus and a 31.5 apostilb white background.
- The points tested must be no more than 6° apart horizontally or vertically and measures 24° to 30° around the point of fixation (HFA 30-2 or HFA 24-2 are acceptable tests).

STEP 2: Is the test reliable?
- The test is NOT reliable if the patient has fixation losses exceeding 20%, or if the false positive or false negative errors exceed 33%.
- The test results must be consistent with the clinical findings and the patient’s daily functional activities.

STEP 3: Does the patient have visual field loss?
- Using a Humphrey Field Analyzer (HFA), a Mean Deviation (MD) equal to or greater than -5 dB (for example -4.45, -2.35 or 0) indicates a normal visual field.
- A MD of less than -5 dB (for example -5.5, -8.65, or -10.33) indicates a visual field loss.

STEP 4: Do the test results show Statutory Blindness based on visual field loss?
- For tests performed on a HFA, a 10dB threshold is equivalent to a 4e Goldmann intensity. Therefore, any point with a threshold of 10 dB or higher is a “seeing point”; any point 9 dB or lower is considered a “non-seeing point”.
- Use the dB printout to determine if the widest diameter of the field is less than or equal to 20°. Draw a line between the “seeing” and “non-seeing” of any two adjacent tested points where one threshold is 10 dB or greater and the other threshold is less than 10 dB. If more than one number is shown for a particular point, use the higher number to determine if the point is a seeing point.
- On the HFA 30-2 and 24-2, each tested point is 6°. Measure the widest diameter of the consecutive non-seeing points.
- The patient has statutory blindness if the widest diameter in the better eye is less than or equal to 20° and the evidence in your record is consistent with a medically determinable impairment that could result in the visual field loss.

STEP 5: Evaluating Visual Field Loss that has not resulted in Statutory Blindness
- A severe peripheral vision loss may also meet the criteria for legal blindness if the MD for the better eye measured with a HFA 30-2 (not 24-2) is -22 dB or worse.

For a more detailed explanation of the above, as well as illustrations and examples, please visit the Social Security Administration’s website at:

Presented by the COA Low Vision Committee
June, 2015

To access links to previous “CCVIP Pearls” go to www.visioncare.org and click on the CCVIP Logo
Central Vision & Legal Blindness
CCVIP Pearl

Being visually impaired can be financially taxing. Medical costs including doctor visits, medications, nursing home care, as well as indirect costs, such as the inability to work and generate an income can cause financial hardships. Social Security Disability benefits can alleviate some of this financial strain. All optometrists have the ability to certify their qualifying patients as legally blind and providing this assistance may be very beneficial.

The Social Security Administration defines legal blindness (also called statutory blindness) as best-corrected visual acuity of 20/200 or worse in the better eye using a Snellen acuity chart; or a visual field limitation such that the widest diameter of the visual field, in the better eye, is 20° or less. (Please note: The June, 2015 CCVIP Pearl addressed the issue of using threshold perimetry in determining legal blindness for visual field loss)

Measuring Visual Acuity: Most test charts that use Snellen methodology do not have lines that measure visual acuity between 20/100 and 20/200. Newer test charts, such as the Early Treatment Diabetic Retinopathy Study (ETDRS), do have lines that measure visual acuity between 20/100 and 20/200.

If a patient's visual acuity is measured with one of the newer charts, and they cannot read any of the letters on the 20/100 line, they will qualify as legally blind, based on a visual acuity of 20/200 or less. For example, if the person's best-corrected visual acuity for distance in the better eye was determined to be 20/160 using an ETDRS chart, they would be classified as legally blind (using Snellen equivalent). Regardless of the type of test chart used, the person will not be classified as legally blind if they can read at least one letter on the 20/100 line. For example, if a patient's best-corrected visual acuity for distance in the better eye was determined to be 20/125** using an ETDRS chart or 20/200** using a Snellen chart, they would not be classified as legally blind.

For More Information: The SSA Blue Book listings for vision loss appear on the Social Security Administration website. The site includes information on which tests are used to measure visual acuity, visual field and visual efficiency.

http://www.ssa.gov/disability/professionals/bluebook/2.00-SpecialSensesandSpeech-Adult.htm

Presented by the COA Low Vision Committee
August, 2015

To access links to previous "CCVIP Pearls" go to www.visioncare.org and click on the CCVIP Logo
Mrs. Smith, your 80 year old patient with early AMD has been receiving Avastin injections from the retinal specialist for the past twelve months. She calls and states to your staff that she is having a harder time reading, even with the 3X (8D) magnifier you prescribed. Your examination reveals that her acuity has dropped from 20/60 to 20/100 and the extent of geographic atrophy has increased in her better eye. What do you do?

Many optometrists are not comfortable working with hand-held, stand, spectacle mounted and electronic magnification. Low, medium and high powered optical devices however, can dramatically assist their patients visual function, even when the vision loss reaches the moderate to severe levels (20/70 - 20/400). All optometrists need to provide options for their patients so they may continue to access small and fine print. Mrs. Smith is not able to access her medicine bottles and package instructions any longer with her habitual Rx and 3X (8D) LED magnifier. Increasing the magnification to 12D or 16D may improve her access to this print, but an electronic magnifier may provide improved function.

The art of low vision care is not about the magnifier, but the ability to properly prescribe the device or devices for the patient. Providing options allows the practitioner and patient to work together to meet specific goals and needs. Like properly prescribed glasses, properly prescribed magnification is crucial in helping Mrs. Smith maintain independence, safety and quality of life.

If you do not provide low vision rehabilitation in your office, the Colorado Optometric Association's Low Vision Committee has established a list of optometrist (CCVIP Providers) throughout the state that provide referral based low vision care. Like all professional referrals, we encourage all optometrists to call and/or visit the low vision specialist in your area to ensure they will meet the needs of your patients.

To access the CCVIP Provider list log into www.visioncare.org and click on Programs - CCVIP, then scroll down to the CCVIP Provider List link.

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