

## 1 CE Credit

# Eyewear Musts For the Senior Patient

By Lee Prewitt, ABOM

Happy birthday. Every day of the year an average of 5,574 Americans celebrate their 65th birthday, a rate of nearly two million per year. Every seven seconds a Baby Boomer turns 50. The number of mature Americans age 65-plus will double to 70.3 million by 2030 according to the US Census Bureau. America is getting older by the minute as we all march down the path to our golden years. But what does this mean to today's

optician? What are the prescription "musts" for today's senior market? Before we answer that question, let's look at the needs of this group a little further.

### AGE-RELATED EYE ISSUES

The senior patient presents an array of challenging ocular pathology that is more prevalent in this age group than any other. We will look at the top concerns and explore the challenges associated with these concerns.

### PRESBYOPIA

Presbyopia is defined as impairment of vision due to advancing years. This includes reduction in accommodative ability, reduction in contrast sensitivity, need for additional lighting, increased

light scattering, and reduced ability to cope with glare. This all becomes clinically significant beginning after the age of 40, according to the Dictionary of Ophthalmic Optics. Even though all adults will suffer from presbyopia, solutions are readily available. Spectacle lenses utilized to correct this condition include single-vision readers, flat top bifocals and trifocals, progressive lenses and near variable focus lenses. A critical "must" for the dispenser to remember in dispensing to the senior patient is the working distance of the near addition. Simple lifestyle questions will help ascertain the visual needs and habits of the patient. A senior patient who is still in the work place will have different needs than someone who is already retired and contending with recreational pursuits. Even though the activities will differ, the solutions will be very similar.

Whether your patient is a flat top bifocal wearer who needs to move into a trifocal to better see crosswords and puzzles or the progressive wearer who may be better served with a near variable focus lens to better see the paint easel, bear in mind the special needs of those who are moving into their golden years. A prudent course of action is to present the ophthalmic technology that is appropriate for each individual. Allow the patient to make the informed decision regarding lens options and features that appeal to their need. Prejudging an elder patient, thinking they must only want that flat top in a 58-eye frame is not only a disservice to them, but also missing an opportunity to increase profits.

### CATARACTS

Cataracts are the clouding of the eye's natural crystalline lens. There are many theories regarding the reasons for the formation of cataracts. Some of them are health related while the leading theory is environmental. Most experts agree that the most prevalent theory is the lifetime exposure to ultraviolet light. It is believed that the effects of ultraviolet light lead to the formation of cataracts. According to the World Health Organization, cataracts are the leading cause of blindness in the world. Common symptoms of cataracts include increases in nearsightedness, sensitivity to light

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**Learning Objectives:**

Upon completion of this program, the participant should be able to:

1. Student will develop an understanding of the needs of senior patients.
2. Student will be able to identify common age related ocular diseases.
3. Student will develop knowledge to solve the issues related to senior vision.

**Faculty/Editorial Board:** Lee Prewitt, a master optician with 21 years of small private practice, clinic, manufacturer and corporate chain experience, holds an associate of science degree from Portland Community College in ophthalmic

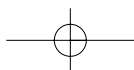


optics. He has a strong interest in technology and its application to the optical industry and is currently Pacific Northwest lens consultant for iCoat Company, a leading independent anti-reflection and mirror coatings company.

**Credit Statement:** This course is approved for one (1) hour of CE credit by the American Board of Opticianry (ABO). Course #: SJP463-1

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and glare, especially while driving at night, blurred, cloudy, or filmy vision, changes in the way you see color and color changes in the appearance of the pupil. However, here in the United States, cataracts are all but considered a conquered disease. Treatment of cataracts is widely available. A surgical procedure is used which removes the cataract and replaces it with an artificial lens called an intraocular implant. This restores the function of the crystalline lens that was removed. Although over a million and a half surgical procedures are performed each year, vision impairment from cataracts is still widespread. Cataracts affect nearly 40 million adults over the age of 40 or nearly one in six. That number jumps to 70 percent in adults age 80. Cataracts cause vision impairment by scattering light as it enters through the crystalline lens.

#### AGE-RELATED MACULAR DEGENERATION

Age-related macular degeneration or AMD is a loss of sight in the central portion of the retina, which is responsible for sharp vision. The cause of AMD is unknown and there is no cure. AMD affects 1.6 million Americans over the age of 50. There are two forms of macular degeneration, dry AMD and wet AMD. Dry AMD is the most common form of the disease affecting 90 percent of all cases. It involves the presence of drusen, fatty deposits under the light sensitive cell layer of the retina. This progression slowly damages the central vision causing dimming and blur. In late cases, this cell layer atrophies causing permanent loss of vision. Early AMD results in moderate vision loss and progresses slowly. Late AMD will result in more significant vision loss. Wet macular degeneration is less common but more devastating in vision impairment. In this case, tiny new blood vessels grow under the retina causing leaks of fluid or the blood vessels break open.

#### DRY EYES

Dry eye syndrome is a prevalent condition that affects millions of Americans. As the name suggests, a dry eye is detrimental to good vision. The cornea requires a moist surface to maintain uniformity as an optical medium. As the cornea develops dry patches, the corneal surface produces irregularities that

will affect good vision. Symptoms of dry eye syndrome will include burning, irritated eyes, blurred vision that improves with blinking, excessive tearing and increased discomfort from reading, watching television or working on computers. Dry eyes have many causes including the natural aging process. Americans over the age of 65 produce 60 percent less oils in their tears than an 18 year old. This oily component helps to contain the tear's watery layer preventing evaporation. Common treatments may include using an artificial tear lubricant, inserting punctal plugs or changing your environment. Punctal plugs are used to block the lacrimal drainage causing the tears to remain in the eye longer.

#### LIFESTYLES

The image of a senior citizen is much different today than it was 10 or 20 years ago. We no longer envision grandma or grandpa sitting in a rocking chair on the porch reminiscing about 'back when I was your age' stories. Today's senior is far more active in all aspects of life. They are no longer content to take a back seat to life but are instead seeking adventures and experiences that their grandparents never dreamed. A *New York Times* report cited mature Americans over 50 are the fastest growing market in adventure traveling. They are more likely to be riding elephants in India, horse back riding in Costa Rica or bungee jumping in New Zealand than their predecessors. In fact, according to Travel Industry Association of America, trips by mature travelers, age 55-plus peaked at nearly 180 million by the close of 2000. Baby Boomers accounted for almost half of the domestic trips and senior citizens accounted for nearly one-third of domestic travel. However, the most mature age group—65-plus—made up roughly half or 92 million trips. It is clear that today's senior is no longer content to sit on the sidelines of life and watch time go by.

Older Americans are also increasingly embracing computer technology. Mature Americans who access the Internet do so at the highest rate and time of usage than any other age group. Of 1,001 individuals aged 50 plus surveyed, 891 owned their own computers, 704 accessed the Internet at least 10 hours a week (326 at more than 20 hours), 927 regularly send and receive emails, 770 utilize the Internet for active research, 826





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taught themselves how to use the Internet and 90.6 percent were over age 55, according to SeniorNet: Home User Research, 2000. Media Metrix also reported mature users access the Internet more often, stay online for longer hours and access more web sites than younger users.

Seniors are more active in their lifestyles than in previous generations. Take a look in your neighborhood on any given morning and you're likely to see walkers and joggers out for their morning exercise. Or stop by the local mall in the early morning hours and you will see many seniors doing the mall's walk program. Older Americans are more active as they participate in activities that are designed to keep them healthy and increase longevity.

### "MUST" HAVE REQUIREMENTS

Now that we have a better understanding of today's senior, what are the requirements of the patient's prescription that must be incorporated?

The ophthalmologist or optometrist has determined the patient's prescription and they have come to you, the optician, for their glasses. What is going to be different in assisting this individual with their eyewear selection from all the others?

Several factors may come into play that you will need to be aware of. First off, begin with a lifestyle assessment. Like with all the other patients that entrust their eyewear selection to you, having a thorough understanding of how the patient will utilize their eyewear is critical to the process. Not only will you gain insights into how the mature patient will use their eyewear but also this lifestyle assessment will open other opportunities for suggestions regarding supplemental eyewear choices.

Pay particular attention to the working distances that the patient prefers. This critical factor becomes apparent as the addition of the prescription increases. Remember that a young presbyope with an add of +1.25, will have immensely greater amplitude in working distances than a mature individual with moderate cataracts and an addition of +2.75. This information will help as a guide to begin talking about the different lens style choices that are available. For example, an aging Boomer who has worn a short corridor progressive may be better served with a standard corri-

dor progressive because now her prescription add has increased to the point that she no longer has the amplitude in reading range and will enjoy the added benefit of a longer, more spacious intermediate range that the traditional progressive offers.

Lens style will also play an important role in the fitting of glasses. Being over 65 does not automatically relegate a senior to having to wear a flat-top bifocal or trifocal. Do not make the mistake of presuming that just because the patient is mature they will not be interested or open to a more modern solution. Many seniors have complained that since they began sending email to the grandchildren on the Internet, they are finding they have to tilt their head back to properly see the screen. This is an opportune time to talk about the options of computer eyewear whether the glasses are single vision or a newer style such as the near variable focus lenses. Or perhaps the solution is simply adjusting their flat-top bifocal from a 28mm wide style to a 35mm wide bifocal. The solutions are many and do not necessarily mean a complete change in the patient's choice of lenses.

Active lifestyles, particularly outdoor lifestyles, bring to mind the importance of ultra violet protection in eyewear. Ultra-violet radiation is the leading suspect in many of the ocular conditions that affect the mature market. Research strongly points to UV's role in the formation of cataracts. Long term exposure has a causative effect to the health of the eye. Beginning preventative measures at an early stage is best but it is vitally important to continue or even start measures later in life as well. Advocating glasses that address these concerns should be a high priority. This can be accomplished through either an ultra violet inhibitor added to the patient's lenses or utilizing a higher index material. Polycarbonate, as well

as other high index materials, naturally blocks ultra violet radiation from entering into the visual system. Photochromic lenses would also be a good choice for absorbing UV. Sunglasses for outdoor use are also a 'must' for today's mature American. A good sunglass will provide adequate coverage of the surrounding adnexa, absorb ultra violet radiation and greatly diminish blue light. Blue light exposure has been linked to higher levels of macular degeneration in men. Using a blue blocker sunglass lens would be prudent for this age group.





## Eyeing The Issues

<b>Cataracts</b>	UV attenuating lenses Photochromics, Poly, High Index
<b>Higher Adds</b>	Longer progressive corridors for increased width Higher minimum fitting heights
<b>Lifestyle lenses</b>	Near Variable focus Wider Flat top Bifocal
<b>Glare Control</b>	Anti Reflective Lenses Photochromic Lenses Polarized Lenses

Another major concern or 'must' for the senior patient is visible light. A 65 year old needs nearly six times the amount of visible light than an 18 year old. This presents a dilemma for adequate visual acuity. In a National Highway Transportation Safety Administration study, several conclusions were made in regards to seniors and driving and how light relates to these tasks. The NHTSA study concluded that aging directly reduces contrast sensitivity by about a factor of three; thus older drivers are at a relative disadvantage at lower luminance levels than younger drivers. It also found the "glare level" was greater by a factor of two when compared to a 70-year-old driver to that of a 20 year old. Assuming the effects of age and glare on contrast sensitivity are independent, older drivers is very much at a disadvantage in night driving situations in which glare is prevalent. However, these effects are certainly not limited to older drivers. The NHTSA study went on to report that between older drivers and their non-driver counterparts ex-drivers had more problems with glare from watching television, reading small print, reading an advertisement on a passing bus, seeing clearly at dusk, and rated their vision as less than satisfactory. This data clearly points to the need for glare control in the prescription.

The most effect method is using an anti-reflective coating on the glasses. Anti-reflective lenses will dramatically reduce the surface reflections present. A non-coated CR-39 lens will have a loss of transmittance of 8 percent. Higher index lenses will show higher losses, up to 12 percent. Application of anti-reflective treatments on both surfaces will increase transmittance to ~99 percent. From the NHTSA study, it is clear that usage of an anti-reflective treatment will have far greater implications to better help the lives of our seniors and their visual needs.

Two additional forms of glare that "must" be addressed are disabling and blinding glare. "Today's AR coatings are far more advanced than they were even as little as 5 years ago. Durability against scratching, cracking and crazing are virtually non-existent with most of the higher quality coatings. The second most voiced complaint from consumers, that of cleanability, is currently being addressed by many AR manufacturers as oleophobic top coats become more commonplace. This devel-

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opment is allowing the AR coatings of today to be easier to clean and most importantly stay cleaner for longer periods. The optician, optometrist and ophthalmologist should have no reservations in prescribing AR treatments to the senior patient."

- **Disabling glare** will occur on a bright sunny day or overcast weather. It is generally associated with light levels that are above 3,000 lumens. An example would be a clear day, sun overhead and the light reflected off the sidewalk or a high overcast when one squints even though the sun is not directly seen. A tinted lens would be recommended in these scenarios with a variable tint or photochromic lens as the ideal option. Not only will it attenuate the light as needed to the conditions but it will also filter ultraviolet light in the process. This will provide the correct amount of tinting to handle the glare without unduly sacrificing contrast sensitivity. A brown or melanin color offers the best choice for contrast enhancement. It is important to not give the senior too dark of a lens color. The light gathering ability of the eye is diminished with age and the wrong choice of density will unnecessarily rob the patient of light and therefore good vision.

- **Blinding glare**, that intense light that causes temporary loss of vision, is controlled with polarized lenses. An example of blinding glare is the reflection off the chrome bumper of the car in front of you or light coming off snow or water. The luminance levels are so intense that vision is lost and only polarizing lenses eliminate blinding glare. Polarized lenses are good choices as they offer excellent color contrast, densities and filter capabilities. Long term exposure to this type of glare can lead to extreme eye fatigue and degrade night vision. Over exposure to high intense levels of light will deplete the rhodopsin levels in the retina. Cumulative effects occur in the decrease of these levels that make nighttime adaptation time significantly decrease. A two to three hour exposure can delay initial adaptation time by as much as 10 minutes and a 10-day exposure can reduce effectiveness by 50 percent. The good news is with proper protection the visual degradation experienced from over exposure will return within 24 hours. Consider brown polarized sun lenses for all seniors.

### CONCLUSION

Today's senior market is in a state of confluence. At the upper end there is the World War II generation of older Americans. This group, with their "saving" mentality, is more likely to continue to embrace traditional lenses, tinting and larger frame styles. The lower or up and coming group of Boomers, whom have been characterized as "spend happy," will tend to continue utilizing technology that they embraced in their younger days. This group will enjoy the benefits of progressive lenses, anti-reflective lenses and higher priced, fashion oriented frames.

So what are the prescription "musts" for the senior patient? Today's optician "must" have a thorough understanding of the ocular conditions that are present in the age group. A strong background will better prepare the optician for dealing with the unique issues that will be presented



from this arena. Secondly, you “must” be aware of the lifestyle activities that will be prevalent. The senior market is changing today like it never has before with patients being more active in pursuing a broader range of activities. The optician “must” have solutions for the problems and issues of the mature patient. This can range from dealing with issues of glare related to cataract formation to taking on a new hobby and wanting task

specific eyewear to meet that need. Finally, you “must” understand the emerging market. Will the seniors of today be willing to continue to spend as they have in the past on newer technology? Will they settle into a mode of maintaining the status quo? Opticians face a growing market segment that will have unique demands both as they address the realities of their ocular conditions and meet their lifestyle needs. ■

## Self-Assessment Examination

1. How many Americans celebrate their 65th birthday each year?
  - a. 2 million
  - b. 3 million
  - c. 1 million
  - d. No one will admit that they are that old
2. Presbyopia is:
  - a. Impairment of vision due to advancing years
  - b. Typically begins around age 40
  - c. Has no cure
  - d. All of the above
3. Cataracts symptoms include:
  - a. Loss of memory
  - b. Sensitivity to light or glare
  - c. Increase in nearsightedness
  - d. B and C
4. The two types of Age-related Macular Degeneration are:
  - a. Wet and dry
  - b. Far and near
  - c. In and out
  - d. Up and down
5. Age-related Macular Degeneration is a loss of sight:
  - a. Temporarily
  - b. Only at night
  - c. Peripherally
  - d. Centrally
6. Dry eyes symptoms are:
  - a. Burning sensation
  - b. Irritated eyes
  - c. Blurred vision that improves with blinking
  - d. All of Above
7. Treatment for dry eyes may involve:
  - a. Eye lubricants
  - b. Blocking of the punctal plugs
  - c. Changing the environment
  - d. All
8. Seniors are more active today than they used to be. Those activities include:
  - a. Knitting and crocheting
  - b. Horseshoes and checkers
  - c. Travel and computers
  - d. Walking and reading
9. How many hours on average do seniors spend on the computer or Internet?
  - a. 1 hour
  - b. 5 hours
  - c. 10 hours
  - d. They don't spend any time
10. In dispensing to the senior market, this plays a vital role:
  - a. Net worth of the senior
  - b. How old they are
  - c. Lifestyles
  - d. The number of grandchildren they have
11. Ultra-violet exposure has been linked to which condition:
  - a. Presbyopia
  - b. Cataracts
  - c. AMD
  - d. Dry eyes
12. What is the optimal solution for combating disabling glare?
  - a. Darkest tint you can find
  - b. No tint
  - c. A hat
  - d. Photochromic lenses
13. Prolonged exposure to sunlight will:
  - a. Make you go blind
  - b. Give you a great tan
  - c. Bleach the rhodopsin in the retina and effect your night vision
  - d. Make you see better
14. A 65 year old needs nearly how much more light to see than an 18 year old:
  - a. 4 times
  - b. 50 times
  - c. 6 times
  - d. 20 times
15. “Musts” for today’s optician is:
  - a. Have a thorough understanding of ocular conditions
  - b. Be aware of the lifestyles of the senior
  - c. Have solutions to the issues that face this age group
  - d. All of the Above

