

Getting The Best Vision From Your Eyewear

by Richard O'Brien

As a retired eyecare provider, I am very disappointed at the state of the optical industry today. There is so much lack of information much less care for patients these days. My intent is to make you better prepared for your next visit to purchase eyewear.

I have visited a number of optical shops this year (2023) and found the lack of shape and style of eyeglass frames to be very limited. One reason for this is a monopoly of the eyeglass frame manufacturers and optical chains are now owned by one company. The company (Essilor Luxottica) is located in Italy and owns more than 93% of the eyeglass frame manufacturers and bought Varilux and Essilor eyeglass lens makers.

The other change I observed regarding the optical shop employees is the lack of help for patients trying to find new eyewear. I observed an elderly patient in one optical shop go back to the frame display 7 times trying to find a frame that would work with his prescription. Each time they brought back a frame they were told "No, that won't work either", instead of picking out something that would work.

Moving on, I will start with an explanation about your eye examination for glasses or contact lenses. I know you have noticed how much darker the room is when your eyeglass prescription is being determined. The reason is to present the eye chart to you with the best possible lighting conditions, a combining of good contrast and resolution. This helps bring you the most accurate prescription needed to bring your vision to 20/20. A brief explanation of 20/20 vision. 20/20 means that you can see something 20 feet away that your eye is supposed to see normally (like most people with good vision). 20/15 means that you can see something at 20 feet that most people can only see at a closer distance of 15 feet, and so on.

Keeping all that in mind, you will now want to get the prescription filled with lenses that will offer you the best sight as possible and keep it as close to the sharpness of vision that you experienced in the eye examination room.

Here is where it can get tricky. I observed many of the optical shops promoting polycarbonate as the end all and be all of prescription eyeglass material. This is where I disagree. Polycarbonate certainly does have it's place in lens material. Polycarbonate has been used as a safety or sport glasses lens with great success due to the material being more impact resistant than any other lens material. Also, if a patient has vision in one only, I recommend it's use. This will keep the good eye as safe as possible.

One other use of polycarbonate is to make what is called high minus prescriptions thinner than some other lens materials. Other lens materials have to have a lens center thickness of 2mm. Polycarbonate can have a center thickness of 1mm that reduces the overall edge thickness of the prescription lens.

Back to why I disagree that polycarbonate is the best lens material. Optical lens materials are graded on what is called the Abbe number. This scale/number refers to the clarity and distortion of vision through a transparent lens material. The higher an Abbe number a lens material has, means your vision will be more free of distorting effects. Polycarbonate has an Abbe number rating of 30 as opposed to a standard plastic lens (CR-39) that has a rating of 58. The lower the number the more visual distortion will be experienced by the patient. Distortion, such as yellow fluorescing (like a yellow highlighter), especially under fluorescent lights.

Many of the “Hi-Index plastic lenses share the same Abbe number as polycarbonate lenses. There is one middle of the Hi-Index road lens material that offers an Abbe number of 45. That lens material is Hi-Index 1.60.

See the Abbe chart below:

| PLASTICS | | |
|----------------------------|-----------------|-------------------|
| Refractive index (n_d) | Material | Abbe number ν |
| 1.498 | CR39 | 58 |
| 1.53 | Trivex | 45 |
| 1.56 | Mid index | 38 |
| 1.586 | Polycarbonate | 30 |
| 1.601 | Mid index | 42 |
| 1.670 | High index | 32 |
| 1.74 | Very high index | 33 |
| 1.76 | Very high index | 30 |

When to Consider Hi-Index lenses. I suggest to begin considering these lenses when you have an eyeglass prescription of +/- 2.50 diopters or +/- 2.50 diopters of cylinder. This type of lens material is lighter and thinner than regular plastic lenses.

Also, the larger your eyeglass frame the thicker the lens edge (for those who are near sighted). Farsighted prescription lens wearers have the lens thickness concentrated in the center of the lens. For those patients I recommend an Aspheric lens. Aspheric lenses have a flatter front surface that reduces the bulging lens appearance.

One way to reduce edge thickness in regular plastic (CR-39) lenses is to have the edges “rolled and polished” to make the edge clear.

Lens coatings definitely have their place in better vision. Anti reflective coatings are of great benefit to clearer vision, driving at night in particular. The more visible light you have the better you will see things. This coating eliminates a vast majority of light that causes glare in your lenses. This will enable you to see the road and oncoming traffic much better than uncoated lenses. When this coating first became available, I gave it a try and compared it to having an extra headlight on your vehicle at night.

UV coatings are very important in helping to protect your eyes from premature cataracts among other things. Which brings up another important piece of information regarding prescription sunglasses. If the sunglasses do not specifically say “UV 400” do not buy them. UV100 means it will protect you from just one of two bands of ultraviolet radiation.

What happens to the pupils in your eye when you go in to a dark room or outside at night? Your pupils dilate, get bigger. Do not take sunglasses with questionable UV protection; more ultraviolet radiation comes pouring into your eyes doing more damage. Better not to wear any sunglasses than the ones with questionable protection. At least your pupils will constrict and reduce the amount of UV that enters your eyes.

My ultimate prescription sunglasses are polarized lenses with a back surface (the back of your lenses) Anti reflective coating. Did you ever get the annoying reflection of your eye in your sunglasses? The Anti reflection coating eliminates that and any other glare coming in from the back of your glasses.

Are your glasses slipping off from sweating? Take a little dab of antiperspirant deodorant and place some on your nose (where the frame rests and a little behind your ears where the temples bend. No more sweat and no more slipping. With Hazel is great for relieving soreness from ill fitting eyeglasses. Place a little in a cotton ball and gently rub the sore areas. Avoid getting With Hazel in your eyes!

In closing, make sure you have a licensed optician take your eyeglass measurements to get the correct fitting eyewear and lenses and have them dispensed by an Optician to get them adjusted correctly. At too many of the optical shops I visited, patients were handed their glasses, asked how their vision is and then say “Okay, you’re all set” without fitting the temples (earpieces) and nose pads (if applicable). Make sure your eyeglasses are adjusted comfortably and correctly.

Time for me to step down off of my soapbox. I hope you found this article helpful in choosing your next pair of prescription eyeglasses. If you have any further questions, feel free to contact me via the contact us page on LouisaOnline.Com.