Understanding Hi Index Eyeglass Lenses

Most eyeglass wearers with a moderate to strong eyeglass correction have probably heard of Hi index lenses at one time or another. In the Optical industry today Hi index can refer to any lens material that is thinner than the standard plastic, commonly known as CR39. In the last 10 to 15 years many new Hi index materials have been developed, making it more confusing for the average consumer to know what is best for them.The term Hi index is a reference to the index of refraction of a particular lens material. The index of refraction is a measure of how much a lens material will bend or refract light. When referring to Hi index lenses, the Eye Doctor or Optician may refer to the index of the lens. For example, Hi index 1.60 or Hi index 1.67 lenses. In general, the higher the index of a lens, the thinner it will be for a given eyeglass prescription. As a point of reference, the index of a plastic CR39 lens is 1.49.As a professional eyeglass dispenser, my recommendation for Hi index lenses is primarily determined by the strength of the eyeglass correction. For eyeglass prescriptions that are less than +/- 2.00, the benefits of hi index lenses for reducing weight and thickness are negligible. Often times the added cost associated with Hi index lenses are not justified for lower corrections. If the eyeglass prescription is greater than +/- 3.00 I would normally recommend a 1.60 Hi index lens. This lens material is 25 to 30% thinner that CR39 plastic and will result in a lens that is noticeably thinner and more attractive for the wearer. For prescriptions that are greater than +/- 5.00 a 1.67 Hi index lens would be my lens of choice. A 1.67 Hi index lenses is 40% thinner than Cr39 plastic and works really well in this prescription range.The latest generation of Hi index lenses are 1.71 and 1.74 index lenses. I will often times refer to these as ultra or hyper index simply as a means of differentiating them from the other Hi index materials. These lenses I will generally recommend to people with corrections greater than +/- 8.00. The 1.74 Hi index lenses are nearly half the thickness of the CR39 lenses. If you are one the few people with eyeglass lenses in this range I can tell you that the cosmetic benefits of the 1.74 lenses are astonishing.In addition to being thinner, Hi index lenses also have the benefit of being natural UV blockers. Because of this it is not necessary to add a UV protection or coating to these lenses. Hi index lenses come standard with a scratch protective coating. Some Hi index lenses also include an anti reflective coating, which is very beneficial because Hi index lenses will have more glare due to the increased density of the material.In conclusion, these recommendations are guidelines and there are exceptions. For example, when it comes to childrens eyewear the lens material of choice is polycarbonate or trivex. These materials have a much greater impact resistance and there for are much safer. For full rimless frames, trivex or 1.67 hi index lenses are recommended. Other lenses materials are not good choices for drilling and tend to break very easily in a full rimless frame. To achieve the best lens profile with a high index lens it is important to choose the smallest frame that is still cosmetically appealing. Selecting a frame that your eyes are centered in will work the best. A frame that is too big can add thickness to a lens, especially with higher corrections.

About the Author

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