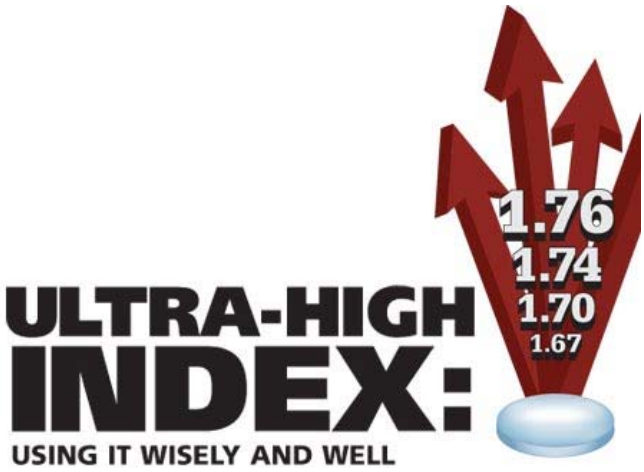
L&T: RxPertise

ULTRA HIGH INDEX: USING IT WISELY AND WELL

OCT 2006



By Palmer R. Cook, OD • Illustration by Iris Johnson

Manufacturers now offer some great new materials for the eyewear designer/dispensers' armamentarium. These are the ultra-highindex materials with lots of light bending power and high potential for thinner, lighter weight spectacles. Used appropriately these materials can give spectacular results.

We all know how unforgiving optical science can be and we spend plenty of time, effort and expertise making eyewear design trade-offs involving curvature, index, specific gravity and lens size to assure that our patients' needs are well met. Ultra-high-index materials broaden our range of choices when turning a lens power formula into finished eyewear and they present us with additional and complex tradeoff possibilities.

Ultra-high-index Choices

Just where does "ultra-high" start? The range of indices for ophthalmic lens material is almost a continuum rather than a series of steps. Patients don't neatly fit into one or another index. A patient who does well in a 1.60 index material in a 48-20 frame with a 28 B measurement, could overlap to a 1.67 index if a 50-22 frame with a 38 B measurement is selected. To facilitate our thinking it probably makes sense to arbitrarily divide the index range, starting at 1.67 as the low-end index for the term "ultra-high."

Various lens manufacturers including Seiko, Essilor, Zeiss, Hoya, Tokai and Nikon offer lenses with refractive indices ranging from 1.67 to 1.74. On the horizon are even higher index lenses such as Tokai's 1.76, which has been released in Japan, but is not yet available in the U.S. Not all lens materials are available in multifocal or PAL form yet, but you can bet that plans are being laid for making them available.

Unfortunately advertising claims of "X" percent lighter or thinner than another material have little meaning unless we are given tables comparing lenses of different materials at various specific powers and diameters. Such tables would allow us to make our design trade-offs with considered judgment rather than basing our choices on advertising and guesswork. (Manufacturers please take note.)

Ultra-high-index materials have high potential for thinner and lighter-weight lenses. They also have equally high potential for performance problems if they are misused. Our tasks are further complicated by the fact that a "best result" may be obtained with one material for one patient, while another material may be needed for a "best result" for another patient with the same Rx and even the same frame. This is a problem lamented by many students and optical apprentices as they earn their stripes with the most complex component of every eyewear design—the patient.

2020mag.com
Home
Editor's Note
Upfront
Features
What's New
L&T
Continuing Education
Supplements
Videos
Archives
Digital Magazine

Follow us
facebook
twitter
pinterest
foursquare
2020&U Blog
RSS

Jobson Optical Group
jobson.com
2020mag.com
visionmonday.com
jobsonresearch.com
framesdata.com
labtalkonline.com
sightnation.com
jobsoninteractive.com
opticianshandbook.com
revoptom.com
revophth.com

More
Subscribe
About Us
Privacy Policy
Contact Us
Reprints & Permissions
Working with 20/20
Media Kit
Classifieds
Jobson Optical Digital
Advertising Portfolio