



REFRACTIVE SOLUTIONS FOR EVERY AGE



An inventory of corrective options for patients from childhood to retirement.

BY REBECCA MILLER, OD

For example, the MiSight 1 day lens for myopia control (CooperVision) is FDA-approved for children 8 to 12 years of age and is indicated for use in prescriptions between -0.75 D and -4.00 D (spherical equivalent) with no more than 0.75 D of astigmatism. These lenses also have alternating zones of correction and myopic defocus, which helps to slow elongation of the eye, the primary cause of myopia progression.

20s TO 30s: VISION ENHANCEMENT AND LIFESTYLE

Our patients' visual needs evolve over their lifetime, requiring customized refractive solutions. With various advances in technology, we as optometrists have the ability to enhance and improve vision in each stage of life.

In this article, I take the major age groups and offer a brief rundown of the refractive solutions available for the most common issues facing patients in each one.

CHILDHOOD AND ADOLESCENCE: BUILDING HEALTHY VISION

Myopia is growing increasingly common in children and teens.¹ Hyperopia and astigmatism may also

emerge in this stage of life, potentially affecting learning and development.²

Solutions



uses nighttime lenses to reshape the cornea, temporarily correcting myopia. Other myopia control options include low-dose atropine eye drops and specially designed multifocal lenses that can slow myopia progression.

Glasses and/or contact lenses are typically the first line of defense, as they are easy to use and offer reliable correction.

Orthokeratology



Patients in early adulthood often require correction for stable refractive errors such as myopia, hyperopia, or astigmatism. They may also come to you with a desire to reduce their dependency on glasses or contact

lenses, bridging the conversation to more lasting corrective procedures.

Solutions

Laser surgeries such as LASIK, photorefractive keratectomy, and small incision lenticule extraction, use lasers to permanently reshape the cornea. Implantable collamer lenses, such as EVO ICL (Staar Surgical), can be ideal for patients who are not good candidates for LASIK due to thin corneas and/or myopic or astigmatic prescriptions. Another unique feature of EVO ICL is that it can be exchanged for a different power, thereby adapting to the patient's vision needs over time.

I've adapted my conversations with patients to ask if they would like to improve their vision this year using glasses, contact lenses, or surgical options. This question lets patients know there are several options available, and then I can tailor the annual examination to meet their needs.

40s TO 50s: TACKLING PRESBYOPIA

Presbyopia typically develops between 40 and 50 years of age.³ Many

patients seek optometric care for the first time in this season of life, we have more options than ever. Ask questions about computer use, multiple monitors, and cell phone needs, and ask about how their eyes feel at the end of the day. Use this information to offer your patients appropriate tailored recommendations for common concerns, such as computer glasses, progressive lenses, multifocal lenses, and/or dry eye therapies.

Solutions



Reading glasses can be a straightforward solution for patients with

emerging presbyopia, especially if this is their first time wearing glasses. Adapting to a prescription pair of readers can be easier for some compared with full progressive lenses, particularly if they use multiple computer screens. On the other hand, patients who have already found success in glasses or contact lenses may prefer to improve their vision with multifocal or progressive lenses.

Multifocal and monovision lenses can offer freedom from readers. In my experience, most presbyopic patients are motivated to make changes when they can no longer comfortably read their cell phone. A refractive lens exchange (RLE) is a procedure to replace the eye's aging crystalline lens with an artificial one that can correct both presbyopia and refractive error.

RLE is particularly useful for high hyperopes who may not be ideal candidates for LASIK and may also be considered for patients with high myopia (nearsightedness). It's important to note the possibility of complications: The mean incidence of retinal detachment (RD) and cystoid macular edema after RLE is 1% and 0.1%, respectively; the risk of RD increases with young age, male sex, degree of myopia, and axial length exceeding 27 mm.⁴ Limiting recommendation of RLE to patients who are over 55 years of age with evidence of a posterior vitreous detachment can help decrease the risk of RD associated with RLE.⁴ While the risk of RD is low, when considering an elective procedure, keeping risk of complications as low as possible is an important consideration for patient safety and surgical success.

Pilocarpine-based prescription drops are also available for the treatment of presbyopia. Such drops work by activating muscarinic receptors in the eye, causing contraction of the iris sphincter and ciliary muscles. This creates a pinhole effect, enhancing depth of focus and improving near vision.

AT A GLANCE

- ▶ Myopia in childhood and early adolescence can be addressed using glasses and/or contact lenses as the first line of defense, orthokeratology lenses to reshape the cornea, low-dose atropine eye drops, or specially designed multifocal lenses.
- ▶ Patients in early adulthood may seek to reduce their dependency on glasses or contact lenses, bridging the conversation to more lasting corrective procedures, such as LASIK, small incision lenticule extraction, or photorefractive keratectomy.
- ▶ Once presbyopia becomes a concern, a refractive lens exchange to replace the eye's aging crystalline lens with an artificial one can correct both presbyopia and refractive error; however, it is important to counsel patients that there is a small risk of complications.

Presbyopia-correcting drops are not recommended for individuals over 60 years of age with advanced presbyopia, significant cataracts, macular degeneration, or retinal disease. Patients who rely on sharp night or low-light vision should also use caution, as pupil constriction can reduce night vision. Common side effects include headache, eye redness, brow ache, blurred vision in dim lighting, and, in rare cases, retinal detachment in predisposed individuals. As with any pupil-constricting eye drops, retinal detachment precautions are recommended.

60s AND BEYOND: CATARACT SURGERY AND CHRONIC DISEASES



Cataracts can affect patients' visual clarity and contrast. In addition, other age-related conditions, such as glaucoma or macular degeneration, generally develop during this period.

Solutions

Cataract surgery can offer enhanced visual clarity, especially with premium IOLs, such as multifocal IOLs, toric IOLs, extended depth-of-focus lenses, and light adjustable lenses.

For many patients, cataract surgery is a once-in-a-lifetime opportunity to improve their vision and reduce dependence on glasses or contact lenses. While premium IOLs are not

appropriate for every patient, they can be a game-changer for many. When making a referral for cataract surgery, I let patients know they will have options and that their surgical team will help them navigate these choices.

If the patient's anatomy, expectations, and personality are a good fit for premium technology, they will likely be pleased with the outcome. Patients with disease states that may limit their visual outcome and those with unrealistic expectations or "perfectionist" personalities (I claim this unfortunate title) may be better served by a simple IOL optic design combined with the use of glasses for vision correction following surgery. Additionally, I have found that many patients are interested in laser cataract surgery, which has the potential to reduce astigmatism, add precision to the surgery, and expedite recovery.⁵

Before recommending cataract surgery, I perform a comprehensive examination to rule out additional disease states that could limit the success of cataract surgery, complicate the surgery, or restrict the patient's IOL choices. This careful evaluation builds the patient's confidence in surgical success, while also establishing rapport with our team prior to surgical referral.

REGULAR COMPREHENSIVE EYE EXAMINATIONS ARE KEY TO MONITORING EYE HEALTH, UPDATING PRESCRIPTIONS, IDENTIFYING EARLY SIGNS OF DISEASE, AND REVIEWING NEW VISION CORRECTION OPTIONS, NO MATTER THE PATIENT'S AGE.

If your patient chooses to manage cataract surgery, this is an opportunity to let them know they can return to your office for postoperative care.

THE IMPORTANCE OF REGULAR EYE EXAMINATIONS

Regular comprehensive eye examinations are key to monitoring eye health, updating prescriptions, identifying early signs of disease, and reviewing new vision correction options, no matter the patient's age. Refractive solutions have come a long way, offering patients the opportunity to see the world clearly and comfortably. ■

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