

Your Guide to Vision Correction

For most of us, the world is naturally out of focus.

Whether we're nearsighted, farsighted or have astigmatism, well over half* of us require some type of vision correction to get through our day. Fortunately, new developments in the methods and technology optometrists and ophthalmologists use to correct our vision are allowing today's eyecare professionals to take human sight to the next level.

From recent breakthroughs in the quality, design and performance of prescription glasses and contact lenses—to exciting advancements in laser and lens implant technology—the dream of 20/20 vision and beyond may be a reality. As the field of vision correction continues to evolve, it is important to not only understand the multitude of vision-correction options, but also the roles of optometrists and ophthalmologists and the services they provide in correcting, protecting and preserving our vision.

Because many people are not familiar with the differences between the fields of optometry and ophthalmology, we have prepared this comprehensive guide to better explain their individual services and to help you make a more informed decision about improving your vision. Whether that is through prescription glasses, contact lenses, laser vision correction or a lens implant procedure, the information presented in this guide is educational in nature. Your decision to have a vision correction procedure should be based on a thorough evaluation by your optometrist, ophthalmologist or both.

*SOURCE: The Vision Council 2013

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OPTOMETRY

BY ROCHELLE NATALONI

Eye Exams for Healthy Vision

If you think you should only see an eyecare professional when you experience a problem with your vision, think again. Seeing an eye doctor once a year for a comprehensive eye exam is the best way to maintain a lifetime of healthy vision. In addition to evaluating patients' needs for eyeglasses and contact lenses—(nearsightedness, farsightedness and astigmatism) a vision exam can identify eye diseases such as:

- Glaucoma
- Cataracts
- Diabetic retinopathy
- Age-related macular degeneration

An eye exam can also identify medical conditions, such as:

- High blood pressure
- Diabetes
- Cardiovascular disease

These conditions often exist with little or no warning signs so early detection is the key. Early treatment may not only save money on drugs or surgery later—it can save vision and, possibly even, lives.

Optometrist vs. Ophthalmologist

OPTOMETRIST

Optometrists are eyecare professionals who have earned a Doctor of Optometry (OD) degree; they are often considered the frontline medical professionals for the provision of day-to-day eye care. Their primary focus is performing eye exams also known as 'refractions,' and prescribing and dispensing eyeglasses and contact lenses. Most optometrists can also prescribe medications for certain ocular conditions, such as antibiotics for eye infections.

OPHTHALMOLOGIST

Ophthalmologists are medical or osteopathic doctors (an MD or DO) who specialize in eye and vision care. They are licensed to practice medicine and to perform surgery. While both types of eyecare providers are equipped to perform comprehensive eye exams, ophthalmologists tend to focus more on eye surgery. Often times, ophthalmologists refer patients to optometrists for general eyecare and vision exams, and optometrists refer patients to ophthalmologists for surgery or co-management of complex ocular irregularities.

*SOURCE: The Vision Council 2013



Make Eye Health a Priority

More than 64% of the adult U.S. population reports wearing prescription eyeglasses, but less than half of the U.S. population reported having an eye exam in the past year.* Why is that? One of the reasons might be that people are busier than ever; another is that scheduling an eye exam can seem a bit confusing.

- Should you see an optometrist or an ophthalmologist?
- Do your children need annual eye exams, too?
- Aren't vision screenings sufficient?

Answers to these questions will illustrate why everyone in your household should have an annual comprehensive eye exam, and will also make it clear why booking a visit with an optometrist typically makes the most sense.



Importance of Comprehensive Eye Exams for Children

Vision screenings performed in a primary care physician's or school nurse's office are not a substitute for comprehensive eye exams. Being able to read the eye chart, which tests for distance vision, is not enough for children because most learning occurs close up.* Doctors say learning and behavior problems can result if a child does not receive appropriate vision correction. These screenings are not sufficient for adults either, because they only look at the quality of one aspect of your visual function, not the overall quality of your ocular health.

Why do babies and toddlers need eye exams? Children develop rapidly in the first few years of life. Early examinations are important so that visual discrepancies can be detected and treated before they interfere with learning.

Eyewear to Fit Your Lifestyle

If your eye exam reveals the need for corrective lenses, consider how you use your eyes for different tasks when choosing glasses or contact lenses—or a combination of both. Students and business professionals may benefit from eyeglasses that help reduce computer screen glare. Those who participate in outdoor activities and sports might feel that contact lenses will be more practical. A year's supply of daily-or-monthly-wear disposable contact lenses can be conveniently ordered in advance so a fresh pair is always at hand.

It's not uncommon for fashionable people to enjoy having multiple pairs of eyeglasses to complement their dressy, casual and professional looks. Just as one pair of shoes might not satisfy all of your needs, one specific type of eyeglasses might not cover all the bases either. For instance, while the lightweight nature of titanium frames might provide the ideal 'form' for a day in the office, you'll be glad you have the 'function' of prescription sunglasses for the sunny rush-hour commute home.

What to Expect During an Eye Exam

A comprehensive eye examination usually starts with the doctor asking about your general medical history. Then several tests are performed to examine the appearance and function of all parts of your eyes.

• **Visual acuity test** : Measures how clearly you can see from a distance and up close. You will identify letters on a chart positioned 20 ft. away, as well as on a small hand-held chart.

• **Refraction assessment** : This helps determine a corrective lens prescription that will give you the sharpest vision. Or it may determine that you don't need corrective lenses at all.

• **Slit-lamp examination** : This instrument enables the eye doctor to evaluate the health of your eyes by viewing the structures of the front of the eye—the cornea, iris and lens, as well as the back of the eye—retina, optic nerve, macula and underlying layer of blood vessels. Your pupils will usually be dilated _____

*Source: Bruce Rosenthal, MD, Chief of Low Vision Services, Lighthouse International. Quoted in *The New York Times*, December 20, 2010 "What We're Not Looking After: Our Eyes."





with special eye drops for this test. This results in the necessity of wearing sunglasses after dilation or possibly bringing along another driver. Your doctor will make the appropriate recommendation.

• Visual field test: This test looks for 'blind spots' and deter mines whether you have difficulty seeing in any areas of your overall field of vision.

• **Glaucoma test**: This test measures the pressure inside your eyes. The untreated build-up of pressure inside the eye can lead to blindness.



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Much More than a Stylish Accessory

Don't lose sight of the fact that eyeglasses are actually medical devices. The lens is, in essence the 'prescription,' and there are several different types.

• Single vision lenses are prescribed to individuals who have a low-to-moderate degree of myopia, hyperopia or astigmatism.

• Multifocal lenses contain more than one prescription strength or 'power' within the same lens to help you see well at all distances. This includes bifocal and progressive lenses, which are prescribed to individuals who naturally lose their ability to see while reading. This usually happens around or after age 40.

• Lens treatments such as UV protection, polarization and antireflective coatings are other options that an experienced and trusted eye doctor can provide guidance on.



Tips for Keeping Your Eyes in Tip-Top Shape

• **Protect your eyes from UV rays;** wear a hat and sunglasses. Repeated sun exposure can increase the incidence of cataracts and macular degeneration. Look for lenses that provide 99–100% protection from UVA and UVB rays.

• Watch your diet; nutrition plays a role in ocular health. Eye conditions including cataracts and age-related macular degeneration occur less frequently in people who eat a diet rich in vitamins, minerals, omega-3 fatty acids and lutein.

• **Protect your peepers;** always wear safety eyewear when engaging in potentially hazardous activities such as home remodeling and auto maintenance.

• **Throw away old eye make-up;** better to start fresh than to risk an eye infection. If you haven't used it, toss it. Mascara and eye shadows should be replaced every three months.

• **Stop smoking;** people who smoke are at a higher risk for macular degeneration and cataracts.

Using CareCredit at Your Optometrist's Office

CareCredit is a credit card exclusively for healthcare services and can be used for eye exams, eyeglasses, prescription sunwear, contact lenses, vision therapy and more. Plus, special financing is available on purchases of \$200 or more*—so even if you have funds available, you never have to choose between your well-being and your budget.

Use your card again and again for you, your family and even your pets, with no need to re-apply.

Over 175,000 providers nationwide accept CareCredit for dental, veterinary, cosmetic, vision hearing care and more.

*Subject to credit approval. Minimum monthly payments required. See www.carecredit.com for details.

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VISION SURGERY

BY MIKE MALLEY

Ophthalmology vs. Optometry

As a compliment to the vision correction services provided by your primary eyecare optometrist, an ophthalmologist provides a more surgical component to vision correction. An ophthalmologist is an eye M.D., a medical doctor who is specially trained to provide both medical and surgical eye care.

Refractive surgery involves the correcting or improving of a refractive error (nearsightedness, farsightedness, astigmatism) and includes laser vision correction and lens implant procedures designed to adjust your eye's focusing ability by either refocusing the cornea (clear, round surface on the front of the eye) or implanting a lens inside your eye.

Most patients considering vision correction surgery are already being seen by a primary eyecare provider (optometrist), so ophthalmologists work closely with optometrists in managing vision correction care between the two specialties. This is called 'co-management' and it allows you to continue seeing your family optometrist for all of your pre- and post-operative vision correction surgical care. For patients who may not know how to choose the right ophthalmologist for vision correction surgery, your family optometrist is an excellent resource regarding a surgeon's experience, technology and surgical outcomes.

Evolution of Laser Vision Correction

Since the Food and Drug Administration (FDA) initially approved laser vision correction in the 1990s, millions of men and women around the world have had their vision corrected through this method. Today, laser vision correction procedures have become so precise, predictable and accurate that NASA and the U.S. military have approved them for astronauts, fighter pilots, and front line troops. Scores of professional athletes, Hollywood stars, political leaders—and probably even your neighbor—now enjoy clearer, more natural vision thanks to laser vision correction procedures.

Treatment times today are well under a minute and patients are now able to return to most daily activities within 24 hours. What began as an innovative method of reducing dependence on corrective eyewear has today evolved into numerous vision correction platforms for treating virtually all refractive errors.

These include:

- PRK (Photorefractive Keratectomy)
- LASIK (Laser Assisted InSitu Keratomileusis)
- Custom LASIK
- iLASIK

PRK and LASIK together represent the two most proven and popular methods of laser vision correction available today. The differences between PRK and conventional LASIK are:

- PRK is a laser treatment performed on the surface of the cornea
- PRK takes slightly longer to heal than LASIK
- PRK patients often report more postoperative discomfort than LASIK patients

• PRK results in a more stable corneal surface

Your lifestyle and your refractive error will help determine whether you are a better candidate for PRK or LASIK. If your hobbies include high impact sports—or if you are a professional athlete—you may be a better candidate for PRK. A thorough discussion with your eyecare professional regarding your lifestyle, hobbies and visual demands will help you in the decision-making process. Since long-term results from PRK and LASIK are virtually identical, patients do not need to worry about less than optimal outcomes.

Although there are many methods of LASIK being performed today, they all involve a 2-step process of making a protective layer on the cornea and using an non-thermal (or cool) excimer laser to correct myopia, hyperopia and/or astigmatism underneath. By performing the laser procedure under a protective layer of the cornea, recovery time is dramatically improved and patients experience little, if any, discomfort.

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LASIK, Custom LASIK & All-Laser LASIK

Conventional LASIK determines your surgical treatment plan based on nomograms that include detailed information taken from previous patients with similar prescriptions using similar laser technology. For years, this was the only method of LASIK available and delivered impressive results. Custom LASIK involves Wavefront diagnostics that provide surgeons information about your optical system that is as unique as your DNA and fingerprint, resulting in a custom treatment plan for your eyes.

Lasers used in correcting vision today are far superior to the early models. Because of their increased speed, accuracy and precision, surgeons today are also able to treat a much broader range of correction than initially approved by the FDA. So if you were told you were not a candidate for LASIK in the past because of your prescription or your astigmatism, you may be an ideal candidate for one of the new laser vision correction procedures being performed today. Five generations of excimer laser technology now have FDA clearance to treat a wide range of refractive errors.

With the advent of each technology, surgeons have a better understanding of these lasers and their applications making all laser vision correction procedures safer and more precise. Choosing a refractive surgeon who provides the latest laser technology and the broadest range of treatment options can help ensure successful outcomes. The ideal ophthalmic practice will offer you the latest laser technology and a variety of surgical techniques to help customize a treatment for your specific visual needs.

Are You A Candidate For LASIK?

To be considered an ideal candidate for laser vision correction, you must meet the following criteria:

- Be at least 18 years of age
- Have had the same prescription for at least 2 years
- Have generally healthy eyes
- Have had no previous eye surgery
- Show no signs of cataracts

It is not unusual for ideal laser vision correction and lens implant patients to achieve 20/20 vision or better following their procedure. This is due in part to ongoing advances in laser, eye tracking and lens implant technology. But some of the biggest breakthroughs have been made in the preoperative diagnostics and imaging technology used by ophthalmologists to customize a treatment plan for your vision. In an effort to help you achieve the best possible result, you should undergo a series of specialized tests that include the following:

1. Wavefront Diagnostics & Imaging. Advanced vision assessment and analysis that captures 21 times more detailed information on the shape and optical structure of the eye than what is capable through conventional standard measuring methods.

2. Corneal Topography. A computerized 'topographical map' that measures up to 7000 locations on the surface of the cornea for possible irregularities. Helps detect conditions like ectasia and keratoconus that rule out patients for LASIK.

3. Pachymetry. Measures the thickness of the cornea to ensure that adequate corneal thickness is available for optimal results.

4. Dilated Pathology Exam. Performed to determine the overall health of your eye for conditions like cataracts, glaucoma, retinal disease, dry eye, diabetes or inflammation that could slow healing or impair LASIK results.

5. Pupillometry Testing. Measures the size of your pupil in maximum darkness to anticipate potential halos, star burst, glare and ghosting from abnormal pupil size or shape.

6. Slit Lamp Exam. A high magnification eye exam to check overall eye health and look for irregularities in the cornea that might exclude candidacy for laser vision correction.

7. Refraction & Tear Testing. Test to determine the strength of your prescription for nearsightedness, farsightedness and astigmatism, as well to detect possible dry eye syndrome.

8. IOL Calculation. A combination of advanced tests that measures the eye length and surface curvature to determine the power of the intraocular lens (IOL) implant that replaces the eye's natural lens.

Refractive Lens Exchange (RLE)

For people whose refractions are outside the treatment range for laser vision correction—or are experiencing changes in their vision due to presbyopia (a middle age condition that causes you to wear reading glasses) or cataracts—exciting developments in lens implant design can help restore clear, natural vision with little or no dependence on corrective eyewear. Refractive Lens Exchange—or RLE—is performed in much the same way as modern day cataract surgery. During RLE, an ophthalmologist replaces your eye's clear natural lens with an artificial IOL that has been carefully calculated to correct your refractive error and help you achieve sharper focus.

RLE procedures are normally performed on an outpatient basis and take less than 30 minutes to complete. Depending on the health of your eyes, your age and your lifestyle, there are three types of IOLs available to improve your vision:

- A Single Focus IOL (monofocal) lens designed to provide clear vision at either near, intermediate or distance (but not all three)
- Multi-Focus IOL (multifocal) lens designed to provide clear vision at multiple distances
- An Accommodating IOL designed to help you focus at multiple distances by shifting its position in the eye

Ideally, RLE procedures provide the best result for people who are presbyopic or extremely farsighted and have been determined to not be ideal candidates for laser vision correction. RLE can be performed to correct nearsightedness, but procedures such as LASIK, PRK or a Phakic IOL may provide a better result. Phakic IOLs are used to treat severe myopia and are surgically implanted inside the eye. Unlike an RLE procedure, the natural lens is left intact during Phakic IOL implantation.

To help determine if you are an ideal candidate for an RLE procedure, much of the same specialized testing and measurements performed for LASIK are required for RLE, including measurements for an artificial lens.

Experience Makes a Difference

Regardless of which vision correction procedure best suits you, your results will be directly related to the overall experience of your surgeon. To achieve optimal results from your procedure, seek an experienced surgeon who is active in the American Society of Cataract and Refractive Surgery, is properly certified on his or her choice of laser and lens implant technologies and is open to discussing his or her experience and sharing their surgical outcomes of patients with a prescription similar to yours.

It is also critical that your surgeon explains the continuity of care you will receive both before and after your procedure. Make certain you understand the post-operative follow-up regimen, what services are included in your fees and who will be providing the follow-up care. Much of your post-op LASIK care may be performed by an optometrist, which is not unusual.

Results You Can Expect With Vision Correction

With today's advanced technologies coupled with surgeon experience, patients undergoing laser vision correction and/or lens implant procedure commonly achieve 20/20 distance vision or better after surgery. This level of vision enables patients to pass their driver's license test without wearing glasses or contacts. Proper pre-operative testing will enable your surgeon to determine if your best-corrected visual acuity (BCVA) is capable of helping you achieve 20/20 vision or better. As with any surgical procedure, your final results with LASIK also depend on following all pre- and post-op instruction and steps. This includes the postoperative management instruction that patients receive from the surgeon, technical staff, and/or co-managing doctor during the weeks and months following the procedure. Often times, at least one full year of postoperative exams and follow-up visits are included in the fee charged for the procedure.

Using CareCredit for Vision Surgery

Because fees for LASIK and RLE vary greatly from center to center, it is important to discuss fees and payment options prior to your procedure. CareCredit is a payment option offered by many practices to help make vision correction possible today.

CareCredit is a credit card exclusively for healthcare services and can be used at participating ophthal mologist offices. Plus, special financing is available on purchases of \$200 or more*. Use your card again and again for you, your family, and even your pets, with no need to re-apply at over 175,000 providers nationwide who accept CareCredit for dental, veterinary, cosmetic, vision, hearing care, and more.

*Subject to credit approval. Minimum monthly payments required. See www.carecredit.com for details.

For more information on how you can make your LASIK dream come true,

visit the website at www.CareCredit.com.

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