



# INTRAOCULAR PROCEDURE

INFORMATION BOOKLET

***LASIK MD***  
VISION

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## **WELCOME TO LASIK MD**

Thank you for expressing interest in LASIK MD. We know that the decision to undergo vision correction is an important one—and we want to make sure that you have all the facts before taking the leap. Like most of our patients, you may be feeling excited about reducing the need for wearing glasses or contacts, but you probably have questions about the procedure beforehand. In this booklet, you will find answers to some of the questions you may have about this life-changing procedure, along with information detailing the benefits, potential complications and the steps you will take along your path to clear vision.

### **About LASIK MD**

LASIK MD provides high-quality vision correction and personalized care. Our mission is to help our patients live life to the fullest, using the highest surgical standards and the latest technology at an affordable price.

We want to ensure that your time with us is as comfortable and easy as possible from start to finish. From the moment you connect with the LASIK MD team, we make it our mission to answer all of your questions, walk you through your options and work to ensure that any questions you may have are addressed. We've also developed enhanced safety protocols to ensure the highest level of safety when you visit us in-clinic.

### **Eye care professionals**

At LASIK MD, our eye care professionals are experienced in the pre-operative, operative and post-operative management of vision correction procedures.

Throughout your LASIK MD experience, you will interact with our highly trained staff, including our experienced optometrists and surgeons.

### **Optometrist**

Your optometrist has completed four years of optometry school, has obtained a doctor of optometry (OD) degree, is trained in diagnosing and treating refractive errors by non-surgical means, and has experience in providing post-operative care following vision correction procedures. Your optometrist, who will collaborate closely with your surgeon to ensure the best possible surgical result, may be able to assume responsibility for your care as early as the day following surgery.

## Surgeon

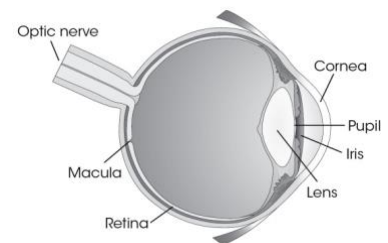
Your surgeon has a doctor of medicine (MD) degree and is experienced in the medical and surgical management of refractive errors and eye diseases. In addition to four years of university, the surgeon has spent four years in medical school, followed by a five-year residency in ophthalmology.

LASIK MD surgeons have performed over **two million** vision correction procedures (including 500,000 in Quebec alone), offering LASIK (laser-assisted in-situ keratomileusis), PRK (photorefractive keratectomy), refractive lens exchange (RLE), and phakic intraocular lens implantation (PIOL). RLE and PIOL will be referred to, collectively, as the "procedure" in the following materials, and will be briefly described in the following sections.

Please read all of the material in this package carefully. Remember that we provide this package in addition to, but not as a replacement for, direct discussions with your eye care professional. You may also find it helpful to consult our website, at [lasikmd.com](http://lasikmd.com) or to contact one of our consultants at 1-866-366-2020 if you have any other questions. Also, please keep in mind that our patient care representatives are not trained to give a medical diagnosis or to determine the specific price of a surgery. Pricing will vary depending on your prescription and the condition of your eyes. **Specific pricing will be given to you following a series of tests at your pre-operative consultation.**

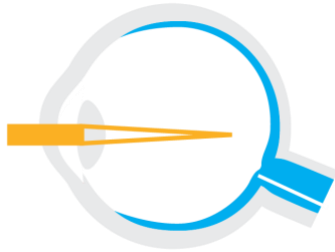
## HOW THE EYE WORKS

The eye is like a camera. The cornea is a clear, dome-shaped window that forms the front wall of the eye. The lens is a transparent structure inside the eye, capable of changing shapes. The retina is the tissue in the back of the eye that acts like the film in a camera. The cornea and the lens focus light onto the retina, producing an image on the retina that gets transmitted to the brain and is interpreted as vision. The curves of the cornea and the lens determine whether the incoming light rays from distant objects focus directly onto the retina.



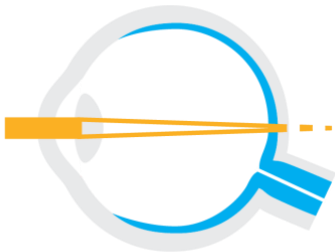
## COMMON EYE AND VISION CONDITIONS

Emmetropia is the condition of the normal eye when parallel rays are focused exactly on the retina and vision is perfect. When light does not focus directly on the retina, the eye has a refractive error. This means that with the appropriate visual aid, incoming light rays become focused onto the retina, producing clear vision.



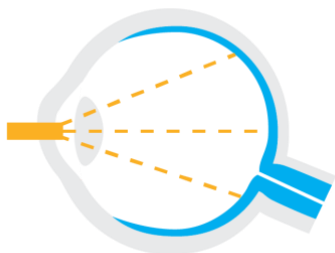
### **Myopia (Nearsightedness)**

In myopia, the eye is longer than normal, preventing light rays from focusing directly on the retina. The light rays come together at a point in front of the retina, and are out of focus on the retina. Distant objects are blurred, while nearby objects can be clear.



### **Hyperopia (Farsightedness)**

In hyperopia, the eye is shorter than normal. The light rays come together at a point behind the retina, and are therefore out of focus on the retina. Nearby objects can appear blurry, while distant objects are clearer. Very farsighted patients will report that even distant objects appear blurry.



### **Astigmatism**

In the normal eye, the cornea is curved the same way in both the horizontal and vertical directions, like a baseball. When light rays hit the cornea, they focus on a single point. With astigmatism, the curve of the cornea is not the same in the horizontal and vertical directions. The cornea looks like a football with a steep curve on one side and a flat surface on the other. As a result, light rays entering the cornea do not focus at a single point and instead cause distorted vision. Many people with myopia or hyperopia have some degree of astigmatism.

In all of the conditions listed above, the person requires some type of corrective lens, such as glasses or contact lenses, to focus the light properly.

## ABOUT CATARACTS

Most cataracts are age-related. Cataracts are very common in older people. By age 80, more than half of all North Americans either have a cataract or have had cataract surgery. A cataract can appear in just one or both eyes. It cannot spread from one eye to the other.

### **How do cataracts develop?**

Age-related cataracts develop in two ways:

#### **1. Clumps of protein reduce the sharpness of the image reaching the retina.**

The lens consists mostly of water and protein. When the protein clumps up, it clouds the lens and reduces the light that reaches the retina. The clouding may become severe enough to cause blurred vision. Most age-related cataracts develop from protein clusters.

When a cataract is small, the cloudiness affects only a small part of the lens. You may not notice any changes in your vision. Cataracts tend to "grow" slowly, so vision gradually worsens. Over time, the cloudy area in the lens may grow and the cataract may increase in size, thus making seeing clearly more difficult. Your vision may get duller or blurrier.

#### **2. The clear lens slowly changes to a yellowish/brownish colour, adding a brownish tint to vision.**

As the clear lens slowly colours with age, your vision gradually may acquire a brownish shade. At first, the amount of tinting may be minimal, and won't necessarily cause a vision-related problem. Over time, increased tinting may make it more difficult to read and perform other routine activities. This gradual change in the amount of tinting does not affect the sharpness of the image transmitted to the retina.

If you have advanced lens discolouration, you may not be able to identify blues and purples. For example, you may be wearing what you believe to be a pair of black socks, only to find out from friends that you are wearing purple socks.

**Are there other types of cataracts?**

Yes. While most cataracts are related to aging, there are other types of cataracts:

- **Secondary cataracts:** Cataracts can form after surgery for other eye problems, such as glaucoma. Cataracts can also develop in people who have other health problems, such as diabetes. Cataracts are sometimes linked to steroid use
- **Traumatic cataracts:** Cataracts can develop after an eye injury, sometimes years later
- **Congenital cataracts:** Some babies are born with cataracts, or develop them in childhood, often in both eyes. These cataracts may be so small that they do not affect vision. If they do affect vision, then cataract surgery is recommended
- **Radiation cataracts:** Cataracts can develop after exposure to some types of radiation

**Who is at risk for developing cataracts?**

The risk of cataracts can increase with age. Other risk factors for cataracts include:

- Certain diseases (such as diabetes)
- Personal behaviour (smoking or alcohol use)
- Environment (prolonged exposure to ultraviolet sunlight)

**What are the symptoms of a cataract?**

- Cloudy or blurry vision
- Colours appear faded
- Glare: headlights, lamps, or sunlight may appear too bright; halos may appear around lights
- Poor night vision
- Double vision or multiple images in one eye (this symptom may clear up as the cataract grows)
- Frequent prescription changes in your eyeglasses or contact lenses

These symptoms can also be a sign of other eye problems. If you are experiencing any of these symptoms, check with your ophthalmologist.



**How are cataracts detected?**

Cataracts are detected through a comprehensive eye exam that consists of various tests:

- **Visual acuity testing:** This eye chart test measures how well you see at various distances
- **Dilated eye exam:** Drops are placed in your eyes to widen—or dilate—the pupils. Your eye care professional uses a special magnifying lens to examine the diverse parts of your eye for signs of damage and other eye problems. After the exam, your near vision may remain blurred for several hours
- **Tonometry:** Completed with an instrument that measures the pressure inside the eye. Numbing drops may be applied to your eye for this test
- **Biometry:** Completed with a device that measures the curvature and also different parts of the eye in order to calculate the best intraocular lens implant power needed

Your ophthalmologist may also perform other tests to learn more about the structure and health of your eye.

## OUR PROCEDURES

More and more people are choosing intraocular lens surgery for improved quality of life. Worldwide, over 50 million intraocular lenses (IOL) have been implanted in patients.

### **Refractive lens exchange (RLE)**

Refractive lens exchange (RLE) is a safe, effective and proven method of vision correction designed to treat refractive errors such as myopia, hyperopia, astigmatism, and presbyopia. Your surgeon will recommend the RLE procedure if your prescription can't be corrected with LASIK, or if the curvature of your eye does not allow for full vision correction with LASIK. With RLE, there is no limit to the prescription that can be corrected. RLE offers patients stable, long-term results.

Once RLE is performed, cataract surgery will not be required in the future since the natural lens is removed and replaced with a permanent artificial lens. This can minimize the amount of eye surgery necessary throughout your lifetime. Most patients who undergo RLE only need one single surgery to correct their vision.

You may have been presented with the choice between getting LASIK or RLE. Rest assured: if both options have been offered to you, you can expect excellent results with either procedure. We will help guide you in making the decision best suited to you.

Refractive lens exchange is an elective surgical procedure. There is no medical condition or emergency condition requiring that you have any RLE procedures. We cannot guarantee that RLE will improve your vision, or that it will eliminate your need for glasses or contact lenses. After the procedure, you may still need glasses or contact lenses for some purposes, either immediately after the procedure or years later.

### **Phakic intraocular lens implantation (PIOL)**

Phakic intraocular lens implantation (PIOL) is a great alternative for patients under 45 years of age with either high hyperopic or myopic prescriptions who are non-candidates for laser refractive surgery. It is called "phakic" because the eye's natural lens is left untouched. This is in contrast to a refractive lens exchange (RLE) procedure which remove and replace the eye's natural lens.

Phakic intraocular lenses function like contact lenses to correct both hyperopia (farsightedness) and myopia (nearsightedness). The difference is that they work

from within your eye instead of sitting on the surface of it. Unlike contact lenses, you cannot feel an intraocular lens in your eye and, apart from regular eye exams, these lenses typically do not require any maintenance.

PIOL implantation can permanently correct your vision, yet no natural tissue is removed in any way during the procedure. The procedure is typically quick (generally, surgery takes just 10 to 15 minutes per eye, sometimes less, to complete) and most people are able to resume daily activities in just a few short days with clearer vision. Phakic intraocular lenses are completely removable, allowing patients, as well as their ophthalmologist, to make changes whenever applicable.

## **WHO IS ELIGIBLE FOR A PROCEDURE?**

RLE is recommended for patients over 45 years of age. PIOL can be performed on patients under 45 years of age who have either a high hyperopic or myopic prescription and are non-candidates for laser refractive surgery. Other factors, such as the general health of your eye, will be examined at the pre-operative assessment.

Certain conditions may mean you might impede your eligibility for the procedure. These conditions can also potentially lead to additional risks or complications. If you have been or are currently at risk of the conditions listed below, we suggest that you discuss them thoroughly with your optometrist and your surgeon as they might interfere with the healing process and require additional care. Those conditions include, but are not limited to:

- Eye inflammation or infection
- Severely dry eyes
- Corneal and retinal degenerative diseases
- Excessive corneal scarring or inadequate corneal tissue
- Certain rheumatological conditions (such as lupus or rheumatoid arthritis, for example)
- Diabetes with advanced retinal disease
- Pregnancy

## WHAT HAPPENS DURING THE PROCEDURE?

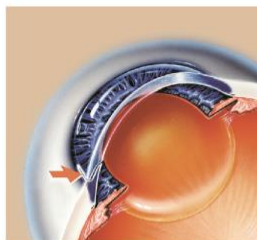
### Refractive lens exchange (RLE)

A refractive lens exchange (RLE) is a surgical procedure that replaces the natural lens of the eye with an artificial one of a preselected strength.

The procedure is performed on an outpatient basis. It generally takes under 10 to 15 minutes per eye, but the length may vary according to the hardness of your natural lens. At your request, we will offer you a mild sedative to help you relax. Ask your clinical counsellor about this possibility during your pre-operative assessment.

Before your RLE begins, different eye drops will be used to dilate the pupil and numb your eye. The surgeon starts by entering the anterior chamber of the eye through a microscopic port incision in the cornea. The surgeon then uses a specialized and precise instrument, called a phacoemulsifier, to remove the lens of the eye. The lens is then replaced with an artificial one with a strength calculated based on the pre-operative determination of the strength of your eye. Within minutes, natural forces seal the microincision to the cornea. Intraocular lenses used with RLE can correct nearsightedness (myopia), farsightedness (hyperopia), astigmatism and presbyopia.

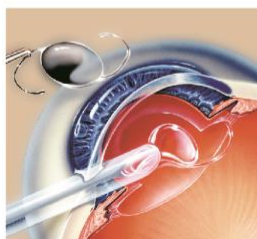
The RLE procedure offer extremely fast recovery: within hours of the surgery, the incision begins to heal. Most patients are able to resume day-to-day activities just a few short days after the surgery. Your surgeon may prescribe eye drops for three weeks after surgery.



Step 1: A microscopic port incision is made in the cornea.



Step 2: The surgeon uses a special device called a phacoemulsifier to remove the eye's lens.



Step 3: The lens is removed and replaced with an artificial version based on the pre-operatively determined power of your eye.



Step 4: Natural forces seal the microincision to the cornea and it begins to heal.

## Phakic intraocular lens implantation (PIOL)

Phakic intraocular lens implantation is a surgery during which an artificial lens of a preselected strength is inserted behind the iris without removing the natural lens of the eye. This is in contrast to a refractive lens exchange (RLE) procedure where the eye's natural lens is removed and replaced.

The procedure is performed on an outpatient basis. Before your procedure begins, different eye drops will be used to dilate the pupil and numb your eye. The surgeon starts by entering the anterior chamber of the eye through a microscopic port incision in the cornea. The phakic lens is inserted through the incision and placed just behind the iris. The procedure is short and takes just 10 to 15 minutes per eye. At your request, we will offer you a mild sedative to help you relax. Ask your clinical counsellor about this possibility during your pre-operative assessment.

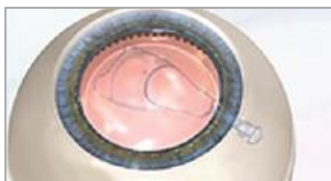
### Steps of a phakic intraocular lens implantation:



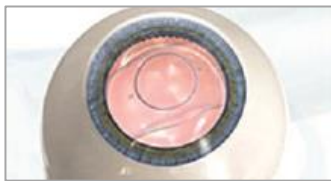
**Step 1:** First, the surgeon uses eye drops to dilate your pupils. Please note that this step may trigger some light sensitivity. Pupil dilation may also cause blurred vision in the first four to six hours following administration of the drops, particularly at near distance. Then, eye drops will be used to anesthetize your eyes.



**Step 2:** The surgeon will create a small incision at the base of the cornea. This is where the phakic lens will be inserted behind the iris, the coloured part of the eye. It will be positioned directly in front of the natural crystalline lens.



**Step 3:** The lens will then be properly inserted and positioned.



**Step 4:** After rest, most patients will be able to return to their day-to-day in just a few short days after surgery. Please note that patients will not, under any circumstances, be allowed to drive home following their procedure and must arrange for transportation ahead of time.

**Step 5:** Patients will be required to undergo a follow-up appointment in the first 24 hours following their surgery. After this, regular post-operative appointments must be respected in the first year. Then, the patient can return to the clinic annually for their check-ups.

## OUR TREATMENTS

LASIK MD offers a wide variety of intraocular lenses designed to meet your visual needs.

### Artificial monofocal intraocular lenses

Monofocal lenses are the most common lenses used in the world. Patients appreciate the clarity in images corrected at distances further than their arm’s length. After having a monofocal intraocular procedure, images up close are less clear. Because we remove the natural flexible lens in the eye, patients lose their accommodative ability after the surgery. Therefore, near vision glasses are necessary. Your prescription for near vision glasses should not increase with time.

Monofocal intraocular lenses correct myopia (nearsightedness) and hyperopia (farsightedness). Toric monofocal implants are recommended for patients with corneal astigmatism. Monofocal toric artificial implants are considered Advanced Technology Intraocular Lenses. Extra fees for these implants may apply.

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| <p><b>MONOFOCAL LENS</b></p> <p><b>MONOFOCAL TORIC LENS</b></p> <p><b>Planned correction:</b><br/>Distance vision correction in both eyes</p> | <p><b>ADVANTAGES</b></p> <ul style="list-style-type: none"> <li>• Excellent distance vision</li> <li>• Minimized night vision difficulties</li> <li>• Toric lenses available to correct wide ranges of astigmatism</li> <li>• Myopia and hyperopia fully corrected</li> <li>• Lens replacement ensures no future cataract development</li> </ul> <p><b>LIMITATIONS</b></p> <ul style="list-style-type: none"> <li>• Glasses needed for precise near vision activities (e.g.: computer work, reading, etc.)</li> </ul> | <p><b>Who is a candidate?</b></p> <p><b>Everyone</b><br/>(Most common lens offered)</p> |
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### Monovision with monofocal artificial intraocular lenses

Monovision correction is an option that corrects one eye for distance vision and the other eye for near vision. It is performed using two monofocal intraocular lenses of different powers and allows most people to function without glasses most of the time. With monovision, prolonged reading, driving and other specific activities may require glasses in order to have both eyes corrected for that particular distance and activity. It is also possible to experience a halo/starburst effect from the residual prescription in their near-seeing eye. A glasses prescription would generally alleviate these symptoms.

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| <p><b>MONOVISION</b></p> <p><b>MONOFOCAL LENS/<br/>MONOFOCAL<br/>TORIC LENS</b></p> <p><i>Planned correction:</i><br/>One eye corrected for near and one eye corrected for distance</p> | <p><b>ADVANTAGES</b></p> <ul style="list-style-type: none"> <li>• Good distance vision</li> <li>• Minimized night vision difficulties</li> <li>• Toric lenses available to correct wide range of astigmatism</li> <li>• Myopia and hyperopia fully corrected</li> <li>• Lens replacement ensures no future cataract development</li> <li>• Reduces dependence on glasses</li> </ul> <p><b>LIMITATIONS</b></p> <ul style="list-style-type: none"> <li>• A slight compromise in distance and near vision</li> <li>• Glasses may still be required for prolonged activities and more precise details</li> <li>• Monovision requires a level of adaptability that not all patients are suited for, as it compromises stereoscopic vision (depth perception)</li> </ul> | <p>Who is a candidate?</p> <p>Select patients only</p> |
|---|--|--|

## Lens PresbyVision™

Lens PresbyVision aims to reduce the dependence on both distance and near vision glasses, bifocals, progressive lenses or contact lenses. The procedure is recommended to patients over 40 years of age who have symptoms of presbyopia and that may not qualify for laser vision correction. Lens PresbyVision is a refractive procedure in which the crystalline lens is removed and replaced with an intraocular lens implant. It corrects refractive errors such as hyperopia, myopia, and astigmatism, as well as presbyopia.

## Full Range of Vision (FROV): Distance + Intermediate + Near Vision

FROV lens implants feature a series of rings which diffract light to provide clear distance, intermediate and near vision without the need for glasses most of the time. With a FROV lens, the vast majority (>95%) of patients are free of glasses at all times and for all distances.

The FROV lens, which allows people to see well at all distances, also causes glare and halos around lights, especially at night and for driving. These tend to improve over the first 6 months after surgery and are usually not bothersome but will be permanent. Glare and halos are not a result of a complication and occur for everyone.

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| <p><b>FULL RANGE OF VISION</b></p> <p><b>FULL RANGE OF VISION TORIC</b></p> <p><i>Planned correction:</i><br/>Both eyes work together to see near and far.</p> | <p><b>ADVANTAGES</b></p> <ul style="list-style-type: none"> <li>• Offers expanded range of vision at near, intermediate and far distances</li> <li>• Vision is sharpest up close, at approximately 40 cm</li> <li>• Lens replacement ensures no future cataract development</li> </ul> <p><b>LIMITATIONS</b></p> <ul style="list-style-type: none"> <li>• Night vision can be impacted with significant haloes or starbursts</li> <li>• Decreased contrast sensitivity in both day and night settings</li> <li>• Near vision glasses may still be required for certain activities</li> </ul> | <p>Who is a candidate?</p> <p>Select patients only</p> |
|--|--|--|



**Extended Range of Vision (EROV): Distance + Intermediate + some Near Vision**

EROV lens implants provide clear distance, intermediate and some near vision without the need for glasses. In addition to good distance vision, most patients function without glasses for intermediate activities such as using a desktop computer or tablet, cooking, eating or playing a musical instrument.

With an EROV lens, many patients still require glasses for near tasks such as reading at close distance, using a laptop computer or cellphone.

All lens implants can lead to some glare and halos around lights, especially at night. This is rare but can occur with the EROV lens implant.

All Lens PresbyVision implants (FROV and EROV) are considered Advanced Technology Intraocular Lenses. Extra fees for these implants may apply.

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| <p><b>EXTENDED RANGE OF VISION</b><br/><b>EXTENDED RANGE OF VISION TORIC</b></p> <p><b>Planned correction:</b><br/>Both eyes work together to see distance and intermediate.</p> | <p><b>ADVANTAGES</b></p> <ul style="list-style-type: none"> <li>• Improved near vision compared to a standard monofocal IOL</li> <li>• Decreased incidence of glare and haloes</li> <li>• Minimized night vision difficulties</li> </ul> <p><b>LIMITATION</b></p> <ul style="list-style-type: none"> <li>• Near vision glasses may still be required for certain activities</li> </ul> | <p><b>Who is a candidate?</b></p> <p>Select patients only</p> |
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**Phakic intraocular lenses**

Phakic intraocular lenses are designed to provide visual outcomes for patients with high myopia (nearsightedness) and hyperopia (farsightedness). These artificial lenses are made from a soft, pliable material, a biocompatible collagen polymer that offers UV protection. Phakic intraocular lenses are a solution for the correction or reduction of high myopia, hyperopia and astigmatism. The lens can permanently correct your vision, yet no natural tissue is removed in any way during the procedure. If, in the unlikely event that you need or wish to remove your lens in the future, your doctor can accommodate you. Phakic lenses are sometimes combined with a laser treatment to help maintain eye pressure. Our eye care professionals will confirm if a combined treatment is best for you.

## PHAKIC INTRAOCULAR LENS

**Planned correction:**

Distance vision correction  
in both eyes.

### ADVANTAGES

- Corrects high myopia and hyperopia that laser refractive surgery cannot treat
- Quick and minimally invasive
- Sharp, clear vision
- Does not induce dry eye syndrome

### LIMITATIONS

- Night vision can be impacted with peripheral and/or central halos, as well as starbursts
- Does not reduce or eliminate the need for future cataract surgery
- For patients with symptoms of presbyopia, near vision glasses are needed for precise activities

### Who is a candidate?

Patients with either  
high hyperopic  
or myopic  
prescriptions, who  
are non-candidates  
for laser refractive  
surgery

## LIMITS TO CORRECTION

These procedures are unable to correct vision defects, like those listed below, which do not arise from refractive errors. Patients with such conditions may be subject to additional risks and additional side effects and should discuss their condition(s) with the eye care professionals before deciding whether to have the procedure.

### **Amblyopia**

Amblyopia, or "lazy eye", is a medical condition that develops in early childhood in which a person with reduced vision in one eye relies on the other eye to focus. A refractive lens exchange procedure will not reduce or eliminate amblyopia, and will not improve vision in the amblyopic eye. If the patient experiences side effects or complications from the procedure in the eye that is able to focus, he or she could experience a loss of vision because that eye would no longer be able to compensate for the other.

### **Strabismus**

Strabismus is an eye disorder caused by a weakness in the eye muscles in which the eyes may not be aligned properly. A refractive lens exchange procedure will not correct, reduce, eliminate or prevent strabismus. Patients with strabismus may develop double vision as a result of or as a side effect of the procedure.

### **Presbyopia**

Presbyopia occurs when the crystalline lens of the eye loses the ability to change shape and focus on near objects, a process known as accommodation. Blurred vision from this condition typically occurs in people aged 40 and over. This progressive loss of function is caused by the stiffening of the lens, which results in reduced clarity. A refractive lens exchange will result in presbyopia immediately post-operatively unless a special trifocal type of intraocular lens is placed in the eye.



## HOW WILL SURGERY IMPROVE MY LIFE?

### Reduced dependence on glasses and contacts

There are numerous potential benefits for patients who undergo intraocular surgery. Almost all of these advantages are associated with reduced dependence on eyeglasses and/or contact lenses. While the use of glasses or contact lenses can be an effective method of correcting a refractive error, it is also a method that can place restrictions on normal, everyday activities.



Reduced dependence on corrective lenses can result in more freedom for patients with active lifestyles. Many recreational activities, such as water sports or contact sports, tend to be much more enjoyable when the necessity of wearing glasses or contacts is removed. In some cases, patients choose intraocular surgery for professional purposes, rather than recreational ones. Additionally, corrective lenses are also not permitted in certain fields of employment.

For contact lens wearers, intraocular surgery can also eliminate the time and effort involved in cleaning, removing and replacing lenses. In addition, over time, the costs associated with maintaining and replacing corrective lenses can be prohibitive. Many eyeglass wearers also cite cosmetic or aesthetic reasons for wanting to undergo the procedure.



The reasons for undergoing intraocular refractive surgery will be different for every individual. For those who have required corrective lenses throughout most of their lives, the simple prospect of being able to drive without wearing glasses or contacts, or of being able to wake up and see without putting on glasses or contacts, may be sufficient reason in itself. The potential benefits, as well as the potential complications, can vary, and should be considered carefully. The patient is the only person who can decide whether the benefits of intraocular surgery outweigh the risks.

## POSSIBLE SIDE EFFECTS AND COMPLICATIONS

As with any procedure, intraocular surgery can have associated risks, unsatisfactory results, complications, and/or serious injury. Although the majority of our patients see an improvement in their vision, neither your surgeon, the clinic or the staff, can promise or guarantee that the procedure will be 100% effective or make your vision better than it was before the procedure.

Traditional intraocular lens surgery is performed on one eye at a time, with the second eye having surgery on a separate day. Immediately Sequential Bilateral Intraocular Surgery (ISBIS) involves performing intraocular surgery on each eye in the same day. Having both eyes done on the same day has the benefit of a quicker visual recovery and a more balanced immediate result. However, ISBIS does carry the rare risk of complications occurring in both eyes at the same time.

As with any surgery, it is not possible to identify every potential risk or complication. Unexpected complications or side effects can occur. Serious complications are rare, and the majority of our patients are very satisfied with the results of their procedure.

### Intra-Operative Complications

#### **Retained lens fragment**

If the capsular bag ruptures, a piece of the natural lens may fall into the back part of the eye. This complication is called a retained lens fragment and can usually be removed by the surgeon. In some cases, the patient may be referred to an external specialist for further care. The possibility of this complication occurring is 0.2%, while only 0.025% of cases risk leading to serious vision loss.

#### **Iris trauma/ prolapse**

During the procedure, there may be trauma to the iris. This may either lead to a defect or irregularity in the iris or a poorly functioning pupil leading to post-operative visual disturbances, such as glare and sensitivity to light. Further surgical interventions may be required. The risk of iris trauma occurring is between 0.1% and 0.01%.

#### **Corneal wound burn**

Rarely, the phacoemulsification tool that is used to help remove the natural lens can become overheated and mildly burn the edge of the cornea. This is usually self-limited and heals with time. The risk of this occurring is 0.1%.

**Capsular tear and vitreous leak**

The capsule is a membrane that surrounds the crystalline lens and holds it in place. During intraocular lens surgery, the crystalline lens of the eye is removed, and the capsule is left in place to hold the new IOL implant. If the capsule tears during the procedure, the vitreous gel from the back of the eye may leak forward into the front of the eye through the tear. If this occurs, the surgeon will perform an anterior vitrectomy to remove the vitreous gel from the front part of the eye. In some cases, the planned IOL may not fit properly and a different monofocal IOL with specialized support features may need to be used instead. The risk of a vitreous leak is 0.05%.

**Bleeding**

Bleeding inside or around the eye, called a hemorrhage, is a rare occurrence during routine surgery. However, patients with fragile blood vessels in the back of the eye tend to be more at risk. The blood vessels under the retina may rupture due to a sudden drop in pressure during surgery. This can result in a loss of vision and possibly permanent blindness of the eye, which carries a risk of 0.005%.

**Post-Operative Side Effects and Complications****Halos, starbursts, glares, and ghosting**

After a procedure, some patients may experience optical effects called halos, starbursts, glares, or ghosting. These occur around lights predominantly in dark conditions. These symptoms arise from optical distortions induced by the intraocular lens implanted in the eye. The design of some intraocular lenses can cause more significant and permanent glares and halos. The possibility of having difficulty functioning at night is very rare, with only 0.1% of cases reporting this issue post-operatively.

**Floaters**

New floaters can occur after intraocular lens surgery due to a condition called posterior vitreous detachment. The back part of the eye is filled with a gel called the vitreous. In younger patients, the vitreous is attached to the back wall of the eye. With age, this gel becomes more liquid and can detach from the back wall of the eye. Floaters are small fragments of the vitreous gel that float around inside the eye. Intraocular surgery can sometimes accelerate this process of posterior vitreous detachment, and thus, more floaters become evident post-procedure. Floaters typically diminish with time, though it can take weeks or months for them to become less noticeable. This condition is benign and does not require corrective surgery.

In some rare instances, a sudden shower of new floaters can occur, causing a tear in the retina or, in worst cases, early retinal detachment. In some rare instances, a sudden increase of new

floaters can occur, caused by a tear in the retina or, in worst cases, early retinal detachment. These conditions require urgent diagnosis and treatment.

**Posterior capsule opacification (PCO)**

Posterior capsule opacification (or PCO) occurs when the capsular bag in which the IOL is placed becomes cloudy. This may result in a decrease in vision. PCO is usually easily corrected using a laser procedure called a YAG capsulotomy. This laser treatment creates a hole in the cloudy part of the capsular bag, thereby restoring vision. There is a 10%-15% possibility of a PCO occurring.

**Undercorrection/ overcorrection**

Despite sophisticated equipment and modern surgical techniques, refractive regressions can occur after undergoing a vision correction procedure. These are more likely to happen in very high myopic and hyperopic patients. Residual refractive errors are easily corrected within the first year by performing laser eye surgery.

**High intraocular pressure**

The eye has a clear fluid that flows into and out of the eye, maintaining its natural pressure. Occasionally, high intraocular pressure after surgery can occur for one of several reasons. These include reaction to the gels used during the procedure, reaction to the steroid post-operative drops, inflammation or retention of small fragments of the natural lens. If the pressure is significantly elevated, it will require close monitoring and additional pressure-lowering drops or pills. It is important for you to attend scheduled follow-up visits to allow your eye care professional to monitor your eye pressure and modify the medication schedule as needed.

**Retinal swelling**

Cystoid macular edema (CME) is a temporary swelling of the central retina, leading to visual distortion. It can be treated with eye drops and can usually be resolved completely. Rarely, this condition can cause a permanent decrease in vision. The risk for CME is approximately 3% and is higher in patients with high hyperopia.

**Corneal swelling**

Corneal edema occurs because of the inability of the endothelium (inner corneal layer) to pump out excess water. During the procedure, there may be mild damage done to the endothelium. When this happens, the cornea swells up and becomes opaque, leading to blurry vision. When mild, this condition is treated with eye drops. Rarely, if severe, it may require a corneal transplant. The risk of severe corneal edema is approximately 0.1%.

**Retinal detachment**

A retinal detachment occurs when the retina peels off the back of the eye. This causes a decrease in vision which, if left untreated, can lead to permanent vision loss or blindness. Treatment often involves referral to an external specialist for retinal detachment surgery. This condition is more common in patients with pre-existing myopia. The incidence ranges from 0.5% to 3%, depending on the patient's age, severity of their myopia, and time from initial surgery. The risk is 1% in patients with pre-existing hyperopia.

**Wound leak**

In rare circumstances, the microincision created in the cornea to perform surgery may leak post-operatively. Often, the only treatment required is to place a contact lens on the eye until it reseals itself. Rarely, the surgeon may need to stitch the wound. The risk of this occurring is 0.1%.

**Displaced lens**

Post-operatively the IOL implant may become misaligned, causing vision to become blurry. This may occur due to a weakness in the fibres that hold the capsule in place or due to any trauma. This may require surgical intervention to reposition the lens, or possibly glasses to correct a change in prescription. The risk of this occurring is 0.1%.

**Optical imbalance**

If the surgeon performs the procedure on each eye on different days, the eyes may not be able to balance and focus properly until the procedure is performed on both eyes.

**Eyelid droop**

Eyelid drooping (called ptosis) may be caused by the swelling of the eyelid. This lowering of the upper eyelid is usually temporary and resolves in the post-operative healing period. Persistent drooping is rare and occurs due to weakening of the eyelid muscle.

**Inflammation**

Mild inflammation following an intraocular procedure is common and usually resolves relatively quickly with initial treatment. Some patients may develop temporary moderate inflammation, such as iritis or uveitis. A more severe form of eye inflammation is toxic anterior segment syndrome (TASS), which generally occurs within the first few days after surgery. Inflammation can cause blurriness, redness, pain, discomfort, and/or light sensitivity. If left untreated, it may cause permanent vision loss or even loss of an eye. This condition is treated with anti-inflammatory or steroid drops.

**Infection**



A severe bacterial infection of the eye can occur in the first few days or weeks after the procedure. This condition is called endophthalmitis. It causes pain and blurriness. If not addressed quickly, it can lead to permanent loss of vision or, in rare instances, even the loss of an eye. Patients receive very powerful antibiotic drops in the weeks after their procedure to help guard against severe infections. If endophthalmitis does occur, additional antibiotics can be injected into the eye to help clear the infection. The risk of an infection is 0.01%.

**Loss of visual acuity**

While extremely rare, an IOL procedure can result in damage to the eye, leading to a loss of vision impacting day to day activities.

**Corneal neuropathic pain (Ocular pain)**

Corneal neuropathic pain, also known as ocular neuropathic pain or corneal neuralgia (CN), is a recognized but rare post-operative complication estimated to occur in about 1 in every 20,000 patients. Corneal neuropathic pain is a chronic localized pain condition. It is thought to be related to corneal nerves becoming hypersensitive and signaling too much after they heal (corneal neuropathy) and the brain interpreting the signals as discomfort (central nervous system sensitization). This is similar to persistent post-operative pain syndrome (PPP) that can occur with other types of surgery and trauma with nerve injury. It is not limited strictly to ocular procedures. With treatment, many patients can see improvement in the symptoms.

**Complications related to phakic intraocular lens implantation (PIOL)**

Some examples of complications can include an increase in intraocular pressure, over- or under-correction, central and peripheral halos, night glare, loss of visual acuity, infection, and inflammation. PIOL can cause damage to the crystalline lens. Since the lens is placed inside the eye, there is a potential risk of touching the eye's natural lens, which may cause a cataract. The risk is negligible for myopic eyes and 1.5% for hyperopic eyes. In the most serious case, it may require cataract surgery.

## THE PATIENT CARE PROCESS AND PROCEDURE

### Step 1—Preparing for your pre-operative assessment

#### Important information for contact lens wearers

Contact lenses can mold the corneal surface, which changes the corneal curvature and may lead to a change in your prescription. To properly calculate the treatment to correct your refractive error, you will have to stop wearing contact lenses at some stage prior to your appointments. In time, the cornea will return to its natural shape and size. LASIK MD is dedicated to providing you with the most accurate treatment, and this can only be achieved if the corneal surface is stable and back to its natural shape.



For the vast majority of patients, the recommended minimum length of time for contact removal should suffice. However, the individual rate of corneal adjusting may vary. If your cornea is still adjusting at either the pre-operative or surgery appointment, you will be required to reschedule your appointment for a later date. This will allow the cornea to return to its natural shape and your refraction to stabilize, thus providing you with an opportunity to obtain the best possible outcome. LASIK MD cannot reimburse time off work, hotels, airline tickets or any other expenses incurred due to rescheduling.

The difference in the length of times to remove contact lenses listed below is to ensure that the majority of out-of-town patients are not inconvenienced by rescheduling of appointments if corneal molding is apparent.

#### Removal of contact lenses prior to the pre-operative evaluation and surgery appointments\*

| Type of lens worn                                       | Local patient     | Out-of-town patient |
|---|-------------------|---------------------|
| Soft lenses<br>(daily or extended wear, and toric)      | At least 12 hours | At least 24 hours   |
| Hard lenses<br>(toric and true/polymethyl methacrylate) | At least 1 week   | At least 12 weeks   |
| Rigid gas permeable<br>(worn for 20 years or less)      | At least 1 week   | At least 6 weeks    |
| Rigid gas permeable<br>(worn for 21 to 29 years)        | At least 1 week   | At least 8 weeks    |
| Rigid gas permeable<br>(worn for 30 years or more)      | At least 1 week   | At least 12 weeks   |

\*Please note that this is only necessary in the eye(s) undergoing surgery and that patients can wear their contact lenses in the unoperated eye immediately following surgery. Patients must refrain from wearing their contact lenses when they begin to use their drops two days prior to surgery.

## How to prepare for your pre-operative assessment

- Consult the Contact Lens Policy to determine the minimum amount of time prior to your procedure that your contact lenses must not be worn.
- Prior to your arrival at our clinic, we will ask that you fill out a Patient Information Sheet electronically. The link will be sent to you via email.
- Pupil dilation will be performed; therefore you will experience blurred vision anywhere from 4–7 hours after.
- You may not be able to drive or to return to work after the evaluation.
- Your eyes may be sensitive to light, so we recommend that you bring sunglasses.
- Avoid smoking on the day of your pre-operative exam.
- Out of respect for other patients and to ensure your visit is as comfortable as possible, we ask that you not bring others into the clinic. The duration of your stay will be approximately two to three hours.
- LASIK MD will not be held responsible for any costs incurred for travel and/or accommodation, lost employment income or any additional expenses incurred due to the patient being deemed a non-candidate, requiring re-treatments, rescheduling, or delays.

## Step 2—Day of surgery

### What happens before surgery?

- If you wear contact lenses, they should be removed before surgery in the eye(s) to be operated on.
- If you have surgery scheduled on your second eye at a later date, you may wear a contact lens in the non-operated eye up until two days prior to surgery on your second eye. Do not wear eye makeup the day of surgery.
- If travelling from outside Canada, please remember to carry proper identification, such as your passport and/or other proof of citizenship.

## The day of surgery

- You can expect to feel nervous, anxious and/or excited prior to your procedure. This is a completely natural, normal response.
- As you are not allowed to drive following your surgery, please arrange for transportation after the procedure.
- Please note that your eyes will be irritated and light-sensitive following the procedure. This usually diminishes within 24 hours of surgery.
- Do not use any makeup, alcohol-based or scented products the day of surgery.
- We recommend avoiding alcohol 24 hours prior to and 24 hours after your surgery, as it tends to dehydrate the tissues and can delay the healing process.
- Avoid smoking on the day of your surgery.
- Wear comfortable clothing on your surgery day. Please do not wear clothing, such as wool or fleece, which can lead to lint in the surgical suite.
- Out of respect for others and to ensure that your visit is as comfortable as possible, we ask that you do not bring others with you into the clinic. The duration of your visit will take, on average, two hours.

## After the procedure

Please remember that your follow-up care is as important as the actual procedure.

- Follow the eye drop regimen recommended by the surgeon.
- Your first mandatory post-operative appointment will take place within the first 24 hours following your surgery.
- Following this visit you are required to attend at least two additional post-operative appointments.
- In the event post-operative measures are required, it is recommended not to travel out of country for the 1st week following surgery, with the exception of pre-approval by your surgeon.

Please be aware that the timing of post-operative appointments may vary from the above table, and some may be conducted virtually or over the phone. The details of your timetable will be explained on the day of your procedure by one of our eye care professionals.

Note that after an RLE/PIOL procedure, it is possible to notice a dark temporal shadow during the healing process. This is referred to as dysphotopsia. This shadow is actually the port of entry the surgeon used to perform the procedure. This temporary occurrence will heal on its own and usually disappears within a few months.

**Step 3—Post-operative care**

**Recommended activity schedule following uncomplicated surgery**

In the first two weeks:

| YOU MAY   | PLEASE DON'T   |
|---|--|
| <ul style="list-style-type: none"> <li>• Shower and wash your hair with your head leaning back and your eyes closed;</li> <li>• Bend over to lift normal objects or to put on your shoes;</li> <li>• Wipe or clean around your closed eye with water and a clean cloth;</li> <li>• Read, watch television, prepare meals and do housework;</li> <li>• Eat and drink normally, including tea, coffee and alcohol (in moderation);</li> <li>• Sleep in any position that you wish;</li> <li>• Go outside (even in the cold).</li> </ul> | <ul style="list-style-type: none"> <li>• Rub your eye(s);</li> <li>• Strain or lift very heavy objects. However, regular activities that require bending are allowed;</li> <li>• Touch your eye with dirty hands or dirty towels;</li> <li>• Work in a dirty or dusty environment (such as the garden);</li> <li>• Engage in strenuous exercises or sports that risk injury to your eye;</li> <li>• Go swimming with your head under water.</li> </ul> |
|   | <p><b>DO NOT DRIVE OR OPERATE HAZARDOUS MACHINERY FOR THE FIRST 24 HOURS FOLLOWING SURGERY. ONLY RESUME WHEN YOU FEEL COMFORTABLE WITH YOUR VISION</b></p>   |

## **FINANCIAL RESPONSIBILITY**

Our clinic charges a single combined fee for its services. The price of your surgery also comprises post-operative care, including a same-day and/or 24-hour follow-up exam as well as subsequent exams in the first three months.

Please note that you will be responsible for paying the remaining balance for surgery on the day of the procedure. For your convenience, payment may be made by Visa, MasterCard, debit card, certified cheque or cash. We do not accept personal cheques. LASIK MD offers financing to its Canadian patients. Should you require financing, this must be done before the day of surgery. Ask your clinical counsellor about the different options available to you.

The procedure fee does not cover the cost of glasses, contact lenses, certain medications, costs associated with completing additional post-operative appointments, or services provided at other facilities.

## **INFORMED CONSENT**

You have the right to consent to or to refuse any treatment or procedure at any time prior to its performance. Consent is a process that involves many steps, involving the patient, the surgeon and LASIK MD's staff. Please remember that the staff and the surgeon at LASIK MD are available to help address your concerns, so do not hesitate to ask questions.

### **Steps of the consent process**

#### **Eye exam**

During your pre-operative evaluation, we will examine your eyes to determine if you are a candidate for intraocular surgery according to criteria established by the surgeon. We will then provide you with an explanation of the procedure, the risks, complications and expected benefits, the alternatives, if any, and any particular conditions that might affect your decision to undergo the procedure.

#### **Surgical counselling**

Before your surgery, we will ensure that you have a copy of the Surgical Information Package and the Consent Form(s). We will ask that you review these documents while we are present to address any questions that you have. After this, we will complete much of the information on the consent form(s) with you in preparation for the signing and witnessing of your signature.

**Surgeon meeting**

To assist you in making an informed decision, your surgeon will review, with you, the risks and complications that are specific to your case. Please notify your surgeon if you have unanswered questions or if you aren't sure about something. You will also be given a specific post-operative plan, for which you will also need to provide consent. Your surgeon is not required to explain risks that are extremely unlikely, or those that your surgeon does not know about, even if these become known at a later time. Your surgeon will provide you with information and materials considered necessary for a person in your position to use in deciding whether or not to undergo the procedure.

**Patient consent form**

If, after reading this material and speaking with the counsellor, optometrist, eye care professional, and your surgeon, you decide to undergo the procedure, you will need to sign the Patient Consent Form(s). The Patient Consent Form(s) will indicate to us that you have been made aware of the nature of the procedure along with any risks or benefits associated with it. In signing this, you have also been made aware of any alternatives to this procedure, and you are thereby making an informed decision to undergo this procedure. You may request a copy of your Consent Form(s) at any time.

**OUR COMMITMENT TO YOUR VISION**

At LASIK MD, we understand that undergoing intraocular surgery is a very important decision. We are devoted to helping you and making you feel at ease throughout the entire process. Our clinics are equipped with new generation technology and our doctors are among the most experienced in the industry.

If you have any questions, or if you would like to schedule an appointment, please contact our Patient Care Centre at 1-866-366-2020. A Patient Care Representative is available to assist you seven days a week, and will be more than happy to help you.

**Improve your vision today and see how life begins with LASIK MD.**



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