

Important information on cataract surgery

Dr. Louis M. Botha Inc.
Suite 102 - 4675 Marine Ave,
Powell River, BC V8A 2L2
Phone: (604) 485 - 8455
www.preyesurgeon.com

Basic Eye Anatomy

- The lens of your eye functions very much like the lens in a camera focusing incoming light rays onto the retina. The retina, at the back of the eye, acts much like a film in a camera by gathering visual information and sending it to the brain. If the information presented to the retina is blurry, it will send a blurry image to the brain, and you will see things blurry.
- The lens must be clear and have the correct power in order to have clear vision. The natural lens is flexible as a child and can adjust to focus on near objects (called accommodation). This ability to accommodate is slowly lost with age as the lens stiffens, beginning in the early 40's. This loss of accommodation is why reading glasses become necessary.
- A refractive error means that the eye does not focus light sharply on the retina and the image that is seen is blurred. Refractive errors include **Myopia** (nearsightedness – too much focusing power, so there is more blurring of objects at distance), **Hyperopia** (farsightedness – not enough power, so nearer objects are blurrier), and **Astigmatism** (blurring of near and far objects due to irregular curvature in the cornea at the front of the eye, the lens or both).

What is a Cataract?

The natural lens is made mostly of water and protein. The protein is arranged to let light pass through and focus on the retina. Sometimes some of the protein clumps together and starts to cloud an area of the lens. This is a cataract. Light passes through the pupil, the dark area in the center of the iris, to the lens and because cataracts block this light, they can cause vision problems. New glasses may temporarily help your vision, but over time the cataract may progress and cloud more of the lens, making it harder to see.

A cataract is not a film over the eye, cannot spread from one eye to the other, is not caused by overusing the eyes and is not a cause of irreversible blindness. Common symptoms of a cataract include cloudy or blurry vision, photosensitivity, such as headlights that seem too bright at night, glare from lamps or the sun, or a halo or haze around lights. Poor night

vision, especially when driving, frequent changes in eyeglasses or contacts, fading colors, or double / multiple vision are also common symptoms.

What causes Cataracts?

Cataracts are most commonly due to aging but may also occur due to trauma or radiation exposure, be present from birth, or occur following eye surgery for other problems. Risk factors include diabetes, smoking tobacco, prolonged exposure to sunlight and alcohol. Prevention includes wearing sunglasses and not smoking. There is no current medical therapy such as eye drops or diets available to prevent or treat cataracts. Fortunately, cataract surgery has a high success rate.

Why and How are Cataracts removed?

The purpose of cataract surgery is to remove the clouded diseased lens of the eye and replace it with an Intra-ocular lens (IOL). Based on your symptoms, you and Dr. Botha will decide together when surgery is appropriate. The surgery is done as an outpatient procedure at Powell River General Hospital and is done under topical anesthetic (freezing drops). Using a microscope for magnification, a small incision is made in the eye and an ultrasound probe is used to break up the cataract into tiny fragments (phacoemulsification), these fragments are then vacuumed out of the eye leaving the capsule behind. The lens will be replaced with an artificial lens, called an intra-ocular lens implant (IOL). You will be required to take medicated eye drops before and after surgery. Most patients will require reading glasses after surgery.

Intraocular Lenses (IOLS)

A precisely engineered artificial lens, an IOL, is implanted into the eye at the time of surgery, to take the place of the clouded lens. It is permanently placed in the eye. In this way, it cannot fall out, does not require cleaning, and does not change the appearance of the eye. It produces no sensation and cannot be felt. The IOL is permanent because it is made of a perfectly transparent material that will never cloud. Once in place and healed, it will not move and because it is lightweight and flexible it will not be affected by physical activity or by rubbing the eye. You can resume all physical activity without restrictions once healed fully.

We offer 2 types of pre-operative measurements

Your eyes must be measured so that your doctor can choose the appropriate lens (IOL) regardless of whether you choose a basic lens or a specialty lens. The power of your IOL must be accurate to achieve the optimal visual result. This power varies with everyone and is different for each eye.

A-scan measurements are mandatory and are fully covered by MSP. It involves taking pictures that measure the biometry of the eye including the thickness of the cataract. This information is put into a formula to estimate the required IOL to improve your vision.

The second type is Corneal Topography and is optional as it is not covered by MSP. Not only does it measure astigmatism but also uses 1000-point technology to map out the surface of the eye and provide Dr. Botha the information he needs to better plan your surgery and fine tune the IOL selection. **Cost: \$250 per eye.**

These measurements are mandatory if you are interested in a specialty IOL or have had previous Lasik / refractive surgery. Please note Astigmatism and other ocular disorders will affect your post-operative visual acuity.

Dr. Botha works with FOUR TYPES OF IOL'S

1. The standard SINGLE FOCUS FOLDABLE IOL

This is the most common/ and most used IOL type that is fully covered by MSP. It is designed to correct vision at ONE distance. Simple myopia and hyperopia can be corrected with this standard lens. Dr. Botha recommends correction for distance vision with the use of reading glasses still required to achieve full range of vision.

Strengths:

- Excellent quality of vision
- Independent from glasses for many activities
- Proven safe and effective
- Glare and halos around lights are rarely noticed
- Monovision is possible, where one eye is corrected for near vision and the other for distance, for people who have successfully tried this with contact lenses.

Limitations :

- Unable to change focus for both near and distance vision (accommodate)
- Glasses are generally needed for either near or distance vision/ sometimes for both
- Does not correct astigmatism

2.TORIC SINGLE FOCUS IOL:

These are used to correct/treat astigmatism. Astigmatism is a focusing problem caused either by an irregularly curved surface of the eye or an irregularly shaped lens. It is normally corrected with glasses, laser vision correction or specialty contact lenses. The Toric lens implant must be precisely positioned and aligned inside the eye for maximum benefit. A small percentage of patients may require additional minor surgery to optimize positioning. The Toric lens will correct for approximately **60-80%** of the astigmatism and again only correct for distance, therefore, reading glasses will still be required to achieve full range of vision. Depending on your level of astigmatism, even with the Toric lens there may be room for improvement with corrective lenses. The TORIC lens has an additional cost of \$502.60 per eye payable to Vancouver Coastal Health. If you are interested in reducing your astigmatism to become less dependent on glasses, please discuss this with Dr. Botha. If you wish to inquire about TORIC IOL then advanced measurements are required.

Strengths:

- Excellent quality of vision
- Independence from glasses for many activities
- Monovision is possible

Limitations :

- Glasses are generally needed for either near or distance vision/ sometimes for both
- Can only correct certain amounts of astigmatism
- May require additional surgery to optimize position
- Involves extra cost (**\$250 (per eye)** for advanced measurement and **\$502.60** for the lens for each eye)

3. EXTENDED DEPTH OF VISION IOL'S:

These IOLs provide high quality vision at one focal point, usually distance, with improved intermediate vision at 70 cm (Dash of car/pedals of bicycle). You will still need glasses for near vision. **You must have advanced/ topography measurements done. Dr. Botha will decide upon reviewing your measurements if you are a candidate for these options:**

Eyhance: Cost **\$242.60** per lens

This lens gives extended depth of vision but does NOT correct astigmatism

Vivity TORIC: Cost **\$1,302.60** per lens

This lens gives extended depth of vision and can correct up to 80% of astigmatism

4. Trifocal/ Multifocal IOL:

These lenses are for those patients who wish to be as independent from reading glasses as possible after cataract surgery, but please note they may come with some compromise in visual quality as explained below. They can be selected to correct astigmatism. These lenses do not accommodate, but produce a multifocal effect by creating progressive zones of focus depending on the distance of the object looked at. Due to this, some contrast sensitivity is lost, meaning that the object looked at may not appear as crisp as with a monofocal/single focus lens. Also, patients may experience some halo formation or glare in low light conditions.

Strengths:

- Spectacle independence for most activities (80% of the time)
- Good range of vision

Limitations :

- May experience some halo and glare post-operatively.
- Some loss of contrast sensitivity
- Involves extra cost (**\$250 per eye**) for advanced measurements and up to **\$1302.60** for trifocal lenses payable to Vancouver Coastal Health for each eye.

Types of vision correction/ target

DISTANCE VISION

Dr. Botha recommends correcting for distance vision. This is useful for most daily activities. This means your vision will be corrected at 20 feet and farther with vision progressively decreasing from 20 feet and closer. This gives you the ability to see road signs, peoples' faces, a wall clock, and other objects at a distance. **If chosen, you will need spectacles for everything arm's length and in. Intermediate** vision is considered from arm's length and out until 20 feet (in between reading and distance vision).

NEAR VISION

For the few people who feel most of their daily activities are done up close, eg. An Artist. If chosen, distance spectacles would be needed for everything beyond arm's length.

Monovision

(One eye is measured to fully correct your distance vision (dominant eye), while the other eye is measured to correct your vision for near.)

While it may sound strange, monovision works well for those who have experienced it previously. The downside of monovision is that some people find it compromises the clarity of their distance vision too much, making distant objects appear slightly blurred. Others find monovision does not provide adequate near vision to give them the freedom from reading glasses they were hoping for. Also, although the two eyes still work together as a team in monovision, binocular vision is slightly compromised, which can cause a slight decrease in depth perception. It is usually best if you experience this prior to having surgery to make sure, you will be able to adapt to this type of vision correction. While some people adapt quickly to monovision, others find that both eyes may not work together as well as they did before, and would then require glasses to correct their vision.

The Process Simplified

Once Dr. Botha has indicated you have cataracts and you have signed the cataract surgery consent forms, the process begins. Our team receives the consent forms and completes measurements. They will then add you to the Powell River General Hospital waitlist for cataract surgery. The hospital's OR booking clerk will then call you with a booking date 1 month prior to your surgery. The waitlist is roughly 6 to 8 months long.

Please let our team know if you have had any previous LASIK or Laser surgery to correct vision previously.

This will change the type of calculations that will be needed to compensate for the changes made to the natural shape of your eye. It is to your benefit if you can provide any information about your eyes PRIOR to the Lasik surgery to help more accurately choose a lens to give you the best vision after cataract surgery.

At your measurement appointment, our team will review what to expect for the surgery and the drops that you will be required to take. They will discuss the lens type you would like, as well as the type of vision you would like after surgery (distance, near, monovision). This is also the time to let them know if you will be away for holidays in the next few months. They will give you a better approximation of when to expect surgery but please know, this is only an approximation and could be sooner or later.

Please ask as many questions as you would like to become comfortable with the process. As your Eye Surgeon, Dr. Botha aims to provide you with the best possible outcome following your surgery.