CORNEAL LASER TREATMENT FOR MACULAR DEGENERATION (C)

Making the impossible, possible.

BOCHNER EYE INSTITUTE

ENHANCING VISION AND LIFE THROUGH CLINICAL INNOVATION.

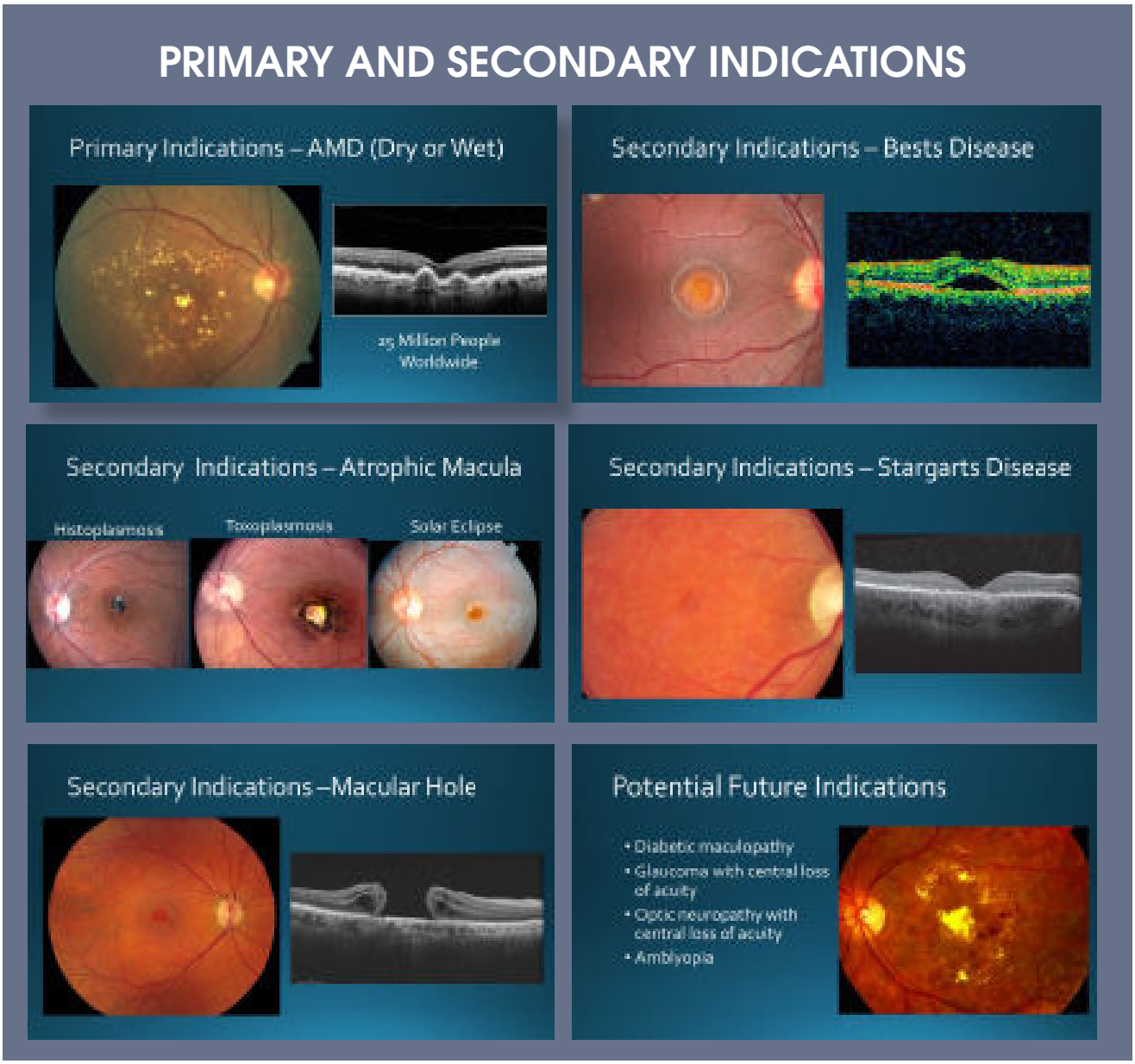
At the Bochner Eye Institute, we are proud to be the first clinical site in North America to use a new, gentle, non-penetrating corneal laser for age-related macular degeneration and other forms of central vision loss for over 6 years following approval by Health Canada.

How can a corneal laser procedure result in improved vision for patients with age-related macular degeneration (AMD) and other conditions with central vision loss?

The corneal laser procedure alters the corneal contour in specific locations to redirect light 5 to 10 degrees away from the poorly functioning cells of the central macula to cells that have better function. For patients that have some healthy cells in the macula, the outcomes have been positive with lines gained of vision and/or quality of life improvement. There is no corneal tissue that is removed and the depth of treatment is very superficial of less than two hairs in thickness. Enhanced quality of life can mean greater independence.

We were introduced to this corneal laser procedure for macular degeneration and other retinal disorders by the inventors of the technology Michael Berry, PhD and Donald Heller, PhD. International clinical experience prior to Health Canada approval was positive and we were excited to offer this innovative technology. Low vision glasses and magnifiers can make a difference, but the visual improvement is often limited. Patients with wet AMD will still need intravitreal injections to turn the macula in to a dry state. Results with this unique corneal laser offer the best chance of enhancing the quality of vision. The treatment is easy for patients to undergo and the safety profile appears to be superior to any other surgical treatment in ophthalmology.

At the Bochner Eye Institute, we have pioneered many innovative laser procedures over the years that have shown longterm patient benefits and been accepted world-wide. These procedures include Photorefractive Keratectomy (PRK) in 1991, LASIK in 1994, Corneal Crosslinking in 2008, Femtosecond Cataract Surgery in 2012, and RestoRX™ in 2018. We are excited by the patient benefits of the RestoRX™ procedure for both dry and wet AMD, and other macular conditions.

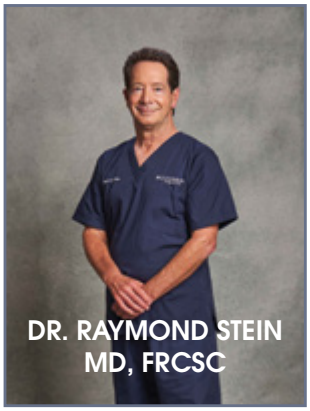


OUR SURGEONS

The Bochner ophthalmic surgeons that perform the RestoRX™ procedure are Dr. Raymond Stein, Dr. Fatimah Gilani, Dr. Rebecca Stein, and Dr. Robert Devenyi. All of our surgeons are highly experienced and have made significant contributions in the field of ophthalmology to advance patient care.

We are accepting patients for consultation to any of our four facilities: Downtown Toronto, East End Location (Scarborough), West End Location (Oakville), North End Location (Unionville).

All RestoRX™ procedures are performed at our downtown facility.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FREQUENTLY ASKED QUESTIONS

How does the RestoRX™ laser for AMD and other retinal conditions enhance vision and quality of life?

The secret for success is the use of a low energy laser that alters the cornea to relocate images to areas outside of the blind spots to functioning retinal areas. The procedure allows residual functioning retinal cells to provide improved sight. Neural processes, including neuroadaptation, allow vision to continue to improve over years. Treatment of both eyes allows for further improvement in neuroadaptation.

Who is a candidate for this Corneal Laser Procedure?

Low vision patients with central vision loss and a best-corrected visual acuity between 20/60 and 20/800 are potential candidates for this procedure. The best candidates are those with dry or wet AMD, Best disease, and Stargardt disease. Future conditions to be evaluated include diabetic maculopathy, and glaucoma with central loss of vision.

What is the range of improvement in vision?

Clinical studies at Bochner since 2018 have shown improvements in vision ranging from one to six lines on the vision chart, as well as better quality of life. This improvement in vision can provide enhancement of daily activities for both distance and near. Patients have also reported improvements in colour, peripheral, and night vision, in addition to social functioning and independence.

ENHANCED QUALITY OF LIFE

- near activities
- distance activities
- colour vision
- peripheral vision
- social functioning
- independence


F1000Research

Corneal laser procedure for vision improvement in patients with late stage dry age-related macular degeneration - a retrospective observational cohort study

[version 1; peer review: 2 approved with reservations]

Abstract

Are there any peer review articles or scientific presentations on the outcomes?

The surgeons have published peer review papers on the outcomes.

Visit ***https://f1000research.com/articles/9-1500*** to review this article. ***(Corneal laser procedure for vision improvement in patients with late stage dry age-related macular degeneration-a retrospective observational cohort study.*** RM Stein, SN Markowitz, MJ Betty II, MJ Berry - F1000Research, 2020***)***.

Visit ***https://f1000research.com/articles/11-316*** to review this article. ***(Corneal laser procedure for vision improvement in patients with neovascular age-related macular degeneration and other retinal disorders involving central vision loss.*** RM Stein, SN Markowitz, MJ Betty II, MJ Berry - F1000Research, 2020***)***


F1000Research

Corneal laser procedure for vision improvement in patients with neovascular age-related macular degeneration and other retinal disorders involving central vision loss: a retrospective cohort study

[version 1; peer review: 1 not approved]

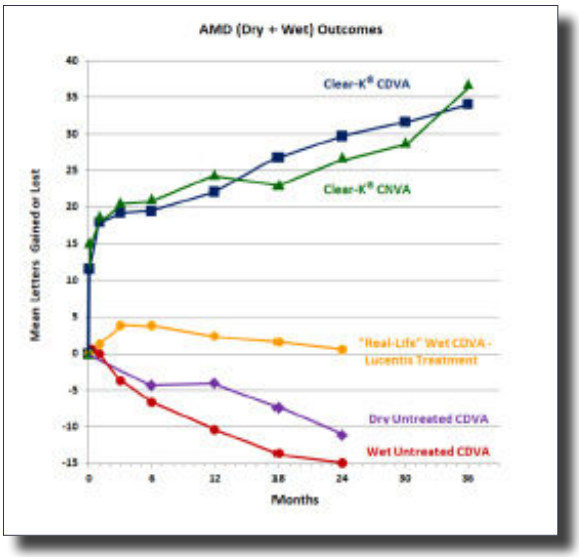
Abstract

In addition, the surgeons have presented their clinical findings at major ophthalmology conferences including the American Society of Cataract and Refractive Surgery, the Ontario Association of Optometry, the Academy of Ophthalmic Education, and the Canadian Ophthalmological Society.

How does the improvement in vision compare to other surgical modalities?

The National Eye Institute Visual Function Questionnaire (VFQ-25) is a reliable measure of patient related quality of life functioning in patients with AMD.

On average, the results have shown significant improvement in the 25 category scores after treatment with RestoRX™ procedure.



Do patients with wet AMD still require intravitreal injections?

Yes, patients with wet AMD will still require intravitreal injections to turn a wet macula into a dry form. The Clear K® procedure can be offered to patients with both dry and wet AMD. In the past there were no easy surgical options for vision improvement until the development of this innovative laser technology.

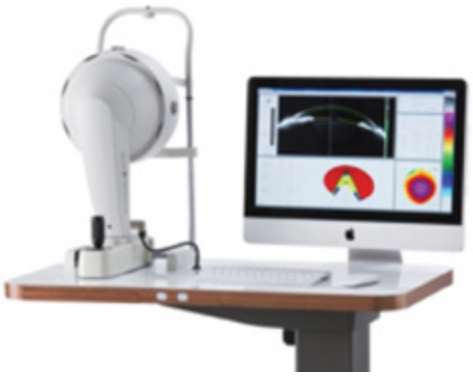
How long can one expect the procedure to last?

The initial patients treated for AMD at Bochner over six years ago, have shown ongoing improvements or stabilization in best-corrected visual acuity and quality of life. These improvements in vision over time are attributed to neural processes including neuroadaptation.

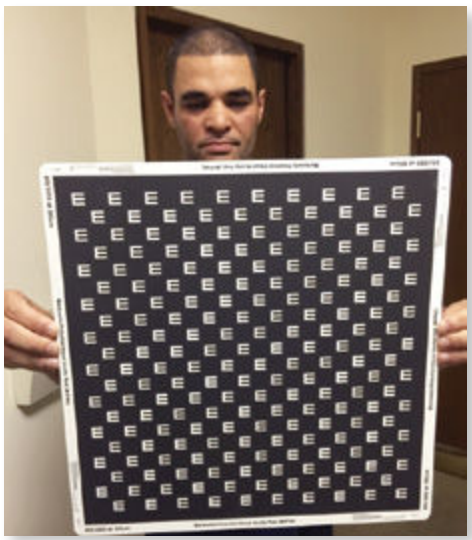
Is the treatment area visible to the naked eye?

The laser treats very small and superficial areas in midperipheral regions of the cornea outside the pupillary zone. These faintly translucent circular spots can be visualized only with a high powered microscope that eye doctors use, referred to as a slit-lamp. Treated areas cannot be seen by the naked eye and, therefore are not of cosmetic concern.

What testing is performed to determine if someone is a good candidate?



At the Bochner Eye Institute, we determine the visual acuity level for both distance and near using specialized low vision charts. Potential visual acuity is determined to estimate the success of the RestoRX™ procedure. This noninvasive testing provides an estimate of the degree of functioning retinal cells in the macula. In general, if there are some healthy cells in the macula outside of the central area, the greater the chance for vision improvement with the RestoRX™ procedure.



This test is used to assess the visual acuity of a patient with low vision.

THE SURGICAL PROCEDURE

How is the procedure performed?

Anesthetic drops are instilled to freeze the front of the eye. No other medications are required. The patient sits on a motorized chair, which is then reclined.

The laser beam is checked by the surgeon and technician to be sure the energy level and other variables are within a specific range.

A suction device with a built-in cross-hair is centered over the pupil, and then a vacuum is activated to secure the suction device to the front surface of the eye. A laser head is placed in the centre of the suction device.

The laser beam is then activated to create a corneal treatment outside of the pupillary zone. The vacuum is released and then the suction device is removed from the eye. If both eyes are to be treated, then the procedure is repeated for the other eye.

The chair is repositioned and then the patient can walk out of the operating room.

Is the Corneal Laser procedure easy to undergo?

This procedure is much easier to undergo than any other eye surgical procedure. There are no needles or incisions. There is typically a mild pressure sensation that is felt at the beginning of the procedure, which resolves in seconds.

What is the postoperative care?

No postoperative drops or oral medications are needed after surgery. Patients are typically very comfortable after the procedure. Patients are usually seen postoperatively at three months and twelve months following treatment. Follow-up visits can be done at one of the Bochner facilities or by the referring eye doctor.

AFTER THE SURGERY

What has been the satisfaction level of patients that have been treated?

Satisfaction levels have in general been very good. Most patients achieve an improvement in vision. It is often important for patients to understand their level of vision prior to treatment and then compare that to the way they are seeing after the surgery. Similar to postoperative cataract patients, some low vision patients forget what their vision was like prior to treatment. Unfortunately, in rare situations, some patients do not achieve an improvement in vision despite being a satisfactory candidate and a well performed procedure.

Why are the results better than wearing glasses with prisms?

A prism only relocates images to one location. Alternatively, the Clear-K® CPV laser procedure relocates images to several locations and, therefore, has a higher probability of stimulating functioning retinal cells.

Why are the visual outcomes better than simple magnifiers?

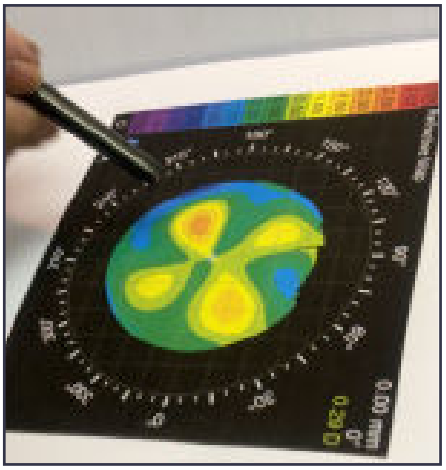
Magnifiers simply enlarge the image on to the macula. The laser technique shifts the focus of the image to different retinal locations that potentially have improved visual function.

What are the risks?

The safety profile is excellent with a low energy level laser and a superficial treatment in the cornea. The laser wavelength only penetrates very superficially into the cornea. This means there is no risk to the intraocular structures of the eye such as the deeper layers of the cornea, iris, crystalline lens, retina, or optic nerve. There have been no reported complications.

Why is this technology a major breakthrough?

This is the first noninvasive technology that can help patients with AMD and other retinal disorders with central vision loss. Invasive procedures that are performed in other countries include removal of the crystalline lens and replacement with a prismatic intraocular lens implant or an intraocular miniature telescope.



Computerized topography image that shows a topographic corneal shape change to redirect light to the back of the eye.

What is the cost of the procedure?

The total cost to the patient is $4,500 per eye, which includes the following:

1. Payment to the manufacturer that provides the technology and service: **$2,000**
2. Preoperative evaluation, imaging, and counseling of the procedure: **$400**
3. Surgeon fee for performing the Clear K® procedure: **$450**
4. Surgical Facility fee: **$1,150**
5. Postoperative care at the Bochner Eye Institute or by the referring eye doctor at three months, and twelve months: **$500**

Why does the Ontario Health Insurance Program (OHIP) not cover all or part of the cost of the procedure?

The RestoRX™ procedure is considered a refractive procedure that alters the cornea to redistribute light to the retina. OHIP does not cover refractive procedures. Other refractive procedures not covered by OHIP include laser vision correction procedures such as LASIK or PRK, topography-guided lasers to improve irregular corneas, a refractive lens exchange, and correction of astigmatism at the time of cataract surgery.

CONTACT US.

To arrange a consultation, and possible surgery, please contact the Bochner Eye Institute.

1. Doctors can either send a referral note by email to AMD@bochner.com, by fax to 416-966-8917, or via mail.
2. Patients or family members can call directly for a consultation at 416-AMD-1000 or email us at AMD@bochner.com.
3. Patients will be contacted to arrange a comprehensive consultation and testing.
4. RestoRX™ laser procedure to be scheduled.
5. Three-month and twelve-month post-op visits, seen at the Bochner Eye Institute or referring doctor's office.

OUR FACILITIES

Located in the heart of Yorkville, easily accessible by TTC, at 40 Prince Arthur Avenue, we also have three satellite offices across the GTA.

40 Prince Arthur is our flagship office, and the main centre for all surgical and refractive procedures. Our Scarborough office is the location that serves our east end patients. The Unionville and Oakville facilities support patients living north and west of the city, respectively.

Pre-surgical consultations are performed at all four offices.

THE BOCHNER EYE INSTITUTE

TRADITION AND INNOVATION IN EYE CARE

SINCE 1929

CANADA'S MOST ESTABLISHED EYE CARE FACILITY.

EXPERIENCED SURGEONS. ADVANCED TECHNOLOGY.

In 1929, Dr. Maxwell K. Bochner opened his practice specializing in cataracts and diseases of the eye. As one of the first eye surgeons in Canada, he became well known for his thorough diagnosis and compassionate bedside manner.

Today, the Bochner Eye Institute, located in Toronto's Yorkville area, stands as a symbol of the care and innovation for which Dr. Bochner became famous. The mission of the Bochner Eye Institute is to use the most advanced, effective technology and proven techniques to help people see clearly, and naturally. We conduct our own research and develop our own techniques. We are pioneers in refractive surgery procedures for restoring clear vision to people with nearsightedness, farsightedness and astigmatism.

Over thirty years ago, we were one of the first practices in North America to invest in revolutionary Excimer laser technology, with devices that have turned out to be the future in vision correction. In 2012, the Bochner Eye Institute was the first centre in Canada to offer Laser Cataract Surgery with the Catalys™ Precision Laser System. This is considered one of the most significant advances in cataract surgery and lens replacement surgery in over 50 years.

Today, we are the first approved eye care facility in North America to perform Corneal Laser Surgery, a revolutionary procedure that treats various forms of macular degeneration.

BochnerVIsion™ is our promise to use the most advanced technology and techniques to allow unsurpassed precision and safety. Today, our patients can undergo advanced procedures to enhance their vision and enjoyment of life.

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BOCHNERVISION™ It's not a procedure. It's a promise.

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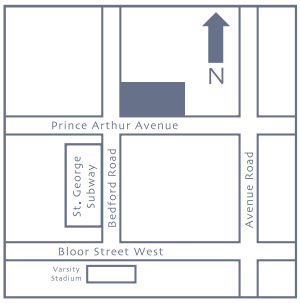
THE EYE CARE PROFESSIONALS
ESTABLISHED 1929



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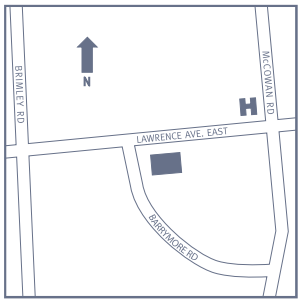

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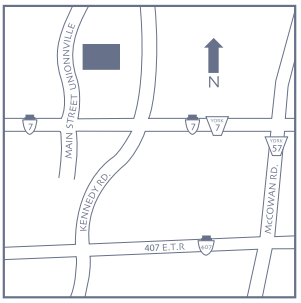

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