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Doctors with a Vision

**GBMC Ophthalmologists Lobby to Make
Vision-sparing Treatment More Accessible**

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Around the world, collagen cross-linking is a procedure performed to stop the progression of vision loss and astigmatism due to corneal ectasia – irregular changes in the shape of the cornea. Now, GBMC ophthalmologists **Sudeep Pramanik, MD**, and **Brett Levinson, MD**, are doing their part to make this safe and effective treatment more readily available in the United States and are spearheading the only research trial of its kind in the Baltimore area.



Ophthalmologists Sudeep Pramanik, MD, (left) and Brett Levinson, MD

The Disease

Corneal ectasia is most commonly caused by keratoconus, a genetic condition that affects individuals in their teens and twenties. In some rarer cases, ectasia is caused by laser vision correction surgery weakening the cornea. “The disease essentially causes the cornea to become unstable. There aren’t enough bonds across the cornea, and it begins to lose its shape, causing a rapid change in vision and lens prescription,” explains Dr. Pramanik. “When a patient’s eye doctor notices this change occurring, we recommend a screening by a specialist as soon as possible.” After years of progression, the disease may worsen, so collagen cross-linking, the most effective treatment to prevent further progression, is no longer an option.

The Procedure

Research has shown that exposure to natural sunlight during the normal aging process cross-links the cornea, making it stronger. This knowledge led to the conclusion that perhaps it was possible to strengthen bonds by aging the cornea through artificial UV light. This hypothesis laid the groundwork for the development of the corneal collagen cross-linking technique first studied in the late 1990s by researchers at the University of Dresden in Europe. The procedure stabilizes the cornea, slowing down or preventing further vision loss. “While collagen cross-linking won’t reverse the damage that has already been done, it can prevent vision problems, blindness and the need for corneal transplant in the future,” explains Dr. Pramanik. The procedure consists of three main stages:

- Removing the epithelial barrier of the cornea and saturating the eye with Riboflavin, a form of Vitamin B
- Shining a UV light on the eye
- Providing oxygen to the eye to catalyze the cross-linking reaction

“The procedure is proving to be very safe and effective. There is a slight risk of infection or scarring in the cornea, but these can be minimized with medications. The UV light does not harm the cornea because only the top two-thirds of the cornea is treated,” says Dr. Pramanik.

The trial is currently in its third phase, and is focusing on the effectiveness of various UV intensity levels over different amounts of time. The first two phases established the safety and effectiveness of this therapy. Once patients have had cross-linking, they may be eligible to have laser surgery to improve their vision.

The Problem

Despite being performed in Canada with excellent results, the technique is not FDA-approved in the United States. Most importantly, that means the cost, approximately \$2,500 per eye, is not currently covered by insurance companies. "The fact that it is not covered by insurance is a huge hindrance to the people affected by the disease," says Dr. Levinson. "As we know, disease onset happens at a relatively young age, so to watch patients

be turned away because of financial limitations is heartbreaking."

Conversely, if individuals opt for corneal transplant, which is more readily covered by insurance policies, they will likely be subject to several surgeries over the course of their lifetime and longer recoveries. "The typical

corneal transplant lasts about 15 years. A 37-year-old who gets a corneal transplant may need future surgeries, and is always at risk for corneal dehiscence, in which the corneal transplant can separate from the eye after trauma, and rejection of the transplant, both of which carry a risk of vision loss. On top of these risks, each transplant surgery carries a 6- to 18-month recovery time," he says. "Fifty percent of corneal transplant patients still need to wear a hard contact lens to achieve functional vision."

GBMC's Corneal Cross-linking Trial is still accepting participants. Physicians who have patients who may be suffering from corneal ectasia may refer them to Dr. Pramanik, Mid Atlantic Cornea Consultants, at 410-616-9952 or Dr. Levinson, Specialized Eye Care, at 410-435-8881.

For more information, patients may also visit **specializedeyecare.com** or **midatlanticcornea.com**, where they can fill out a pre-screening questionnaire for the trial. ■

Those who would like to make a donation to make the procedure more accessible to patients in need are encouraged to contact the GBMC Foundation at <http://foundation.gbmc.org> or 443-849-2773.

