



# Novel Solutions for Vision Correction

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**H**umans have sought to aid and improve their vision since ancient times. In their case it helped to find food more easily and detect predators earlier. Those days may be behind us but not our desire to optimize our visual function without permanent visual aids like contact lenses and glasses.

The most powerful component of the optical system of our eye is the cornea. The second most important part is the natural lens. Recent years have seen improvements in the safety and accuracy of vision-correcting procedures involving those areas, although there will always be risks.

Commonly, the cornea is reshaped to correct and optimize the optical function of the eye. Nowadays this is exclusively done with a laser. The fastest recovery with few side effects and great predictability is achieved by getting Lasik eye surgery. A mobile surface layer (flap) with a hinge is created and lifted up to perform laser sculpting beneath it. The flap is then placed back into position and is ready for rapid recovery.

Traditionally, such flaps have been cut with metal blades and different lasers. A suction pressure is applied to stabilize the eye, causing a short blackout of vision and the cut can result in dislocations. One laser, Visumax, requires much less suction, which avoids any vision blackout and creates a more natural cut that follows the curvature of the cornea. The Visumax is also capable of performing the resculpting without the creation of any flap, which results in stronger and safer outcomes. This treatment should be available in Canada by next spring at the latest.

In some eye-care circles, much has been made of fingerprinting the eye. This has been an advance but we need to be aware that up to 10% of the fingerprint comes from parts of the eye other than the front of the cornea and will change over a person's lifetime. Corrective procedures do best when correcting any imperfection at the source. This means that we now fingerprint the cornea and optimize its shape to obtain the most predictable and stable results. This will give the best

outcomes for most clients.

Historically, the weakness of laser vision correction has been the inability to effectively correct the near vision in the majority of patients after a certain point in their lives. Until now, any solutions have involved a significant disparity between the two eyes, leaving one for distance and one for near focus at the cost of losing some perception of 3-D. The Blended Vision concept does create minor differences between the two eyes and makes use of the two eyes complementing each other. But, it does it at a level of sophistication several magnitudes greater than any other treatment and has minute differences that are frequently unnoticeable to the client.

Another laser device is capable of restoring reading vision without any actual surface cutting and with truly minimal risk. It will be released in Canada after mid-2010 and initially benefit only clients with perfect or near perfect distance vision.

These are exciting times and the solutions have become better and safer than ever before. **LM**