

Ask The Experts

Is the bladeless procedure a better choice for cataract surgery?

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NOVENA Bladeless Cataract Surgery
& Eye Specialist Centre

Q What are the benefits of bladeless cataract surgery compared to the traditional manual procedure?

A The advanced bladeless cataract surgery is the wave of the future for cataract surgery, while traditional cataract surgery has not changed much in more than 30 years.

Traditional manual cataract surgery

The traditional procedure is performed by using knives to cut the cornea; and needles and forceps to tear the lens capsule inside of the eye.

The cataract has to be manually sculpted inside the eye, requiring greater energy that causes more corneal endothelial cell loss and more inflammation to the eye.

The traditional method is dependent on a human's estimation of depth and breadth to prevent intra-operative complications.

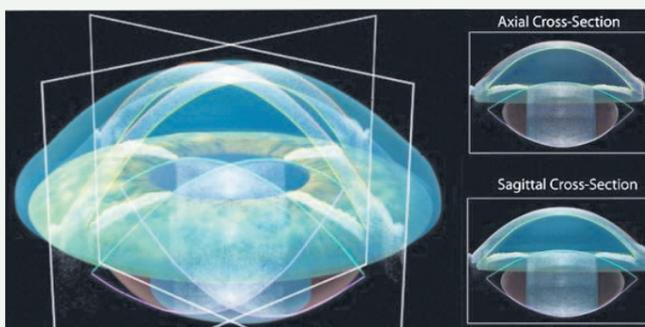
Modern 100% bladeless cataract surgery

Now, with 100% bladeless cataract surgery, the femtosecond laser makes all the incisions and breaks up the cataract in less than 60 seconds.

With artificial intelligence programming abilities, the laser provides higher precision and predictability than traditional cataract surgery.

It uses real-time optical coherence tomography (OCT) to accurately pre-program incisions at different levels within the eye, and then performs all the incisions in a bladeless fashion under total computer guidance.

This offers better lens implant



The femtosecond laser system uses 10,000 real-time scans to accurately perform customised incisions at different levels within the eye.

centration, greater precision for visual outcomes and, most importantly, minimises the chances of intra-operative complications caused by human errors.

Incisions are not only done bladeless but are also fully customised for each specific eye to a much greater degree than any surgeon can do.

At the same time, astigmatism can be corrected during the cataract surgery with more accuracy than we are currently able to achieve using a blade.

More patients can achieve 20/20 vision after surgery without the need for glasses.

The laser's ability to break up the cataract in 20 seconds means that the cataract can be removed with less energy inside the eye compared to manual phacoemulsification technique.

This enables more rapid visual recovery and is also more beneficial for the long-term biomechanical strength of the cornea due to less corneal endothelial cell loss.

Moving forward

Some of the reasons why some eye surgeons still do not adopt the technology include the large capital investment in the equipment, and overcoming an initial steep learning curve to convert to advanced bladeless cataract surgery.

However, new technology can succeed if it ultimately improves lives.

For example, LASIK used to be done by a blade until 2005.

Today, bladeless LASIK is regarded as the gold standard in vision correction.

Although femtosecond laser for LASIK is just as big a capital investment for clinics worldwide, LASIK surgeons have chosen to adopt the 100% bladeless method as it offers improved short- and long-term safety, precision and predictability.

Likewise for advanced bladeless cataract surgery, the United States Food and Drug Administration (FDA) approved of it in 2010, and leaders in refractive cataract surgery are proponents of it. I predict it will be the worldwide gold standard in the next few years.

Dr David Goh



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