

Seeing is Believing: Ultrasound Minimally Invasive Surgery for Cataracts



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Cataracts are, unfortunately, a result of the ageing process. As we get older, our eye's natural lens becomes thicker and more opaque, obstructing and scattering the light passing to the retina. Colours no longer seem as vivid, objects appear blurred, halos appear around lights and night vision suffers - these are all symptoms of cataract formation. Diabetes and eye trauma can also accelerate the formation of cataracts and if left unchecked, cataracts will ultimately lead to blindness. Contrary to popular belief, waiting for a cataract to 'mature' before undergoing surgery does not hasten recovery and may allow the condition to worsen. Cataracts are best treated in the early stages of the disease and with proper and timely surgery patients can expect a full recovery and greatly improved vision.

A common eye problem

Cataracts are a common eye disease and remain the world's leading cause of blindness; in Hong Kong more than 30,000 patients undergo the operation every year and although cataracts have been traditionally considered an affliction of the over-70s, in recent years they have been occurring among the younger generation, starting as early as 50 years old. The good news is that cataract surgery today boasts a success rate of over 98%.* Although there is no alternative to removing the clouded lens, the advances in medical technology now mean that invasive surgery is reduced to a minimum, decreasing the risk factor even further whilst tremendously reducing trauma and enhancing recovery rates. Moreover, modern artificial lenses with advances in optical properties are now available, allowing pre-existing conditions such as long and short-sightedness, presbyopia and astigmatism to benefit from the procedure.

Ultrasound and folding lenses

Ultrasound Minimally Invasive Surgery (MIS) only requires a small incision to be made at the edge of the cornea. Ultrasound is then directed at the cataract, breaking it into pieces which can be removed after emulsification. Finally, a foldable artificial lens is unfurled and implanted. The intraocular lens imitates the natural lens by effectively allocating light and enabling the eye to focus at a certain distance. Newer designs of intraocular lens now possess additional properties such as asphericity, UV-blocking properties and multi-focality. Asphericity reduces spherical aberration and improves contrast sensitivity. Yellow lenses filter out harmful blue light and increase protection for the retina. Multi-focality exploits concentric rings on the optical surface to imitate more than one focus, enabling patients to have both near and distant focus and improving presbyopic vision. Accommodative lens design makes use of the inner eye muscles, permitting the implanted lens to emulate the natural lens and move over a certain range, consequently reducing the patient's dependency on spectacles and contact lenses. Different types of intraocular lens will have different optical properties and it is best to consult your ophthalmologist for the most suitable lens.

Astigmatism and trauma sufferers also benefit

Patients with astigmatism can now opt for a corrective artificial lens that is able to correct the astigmatism with a specially designed curved surface, so that both cataract and astigmatism can be eradicated at the same time.

Cataracts are also caused by eye trauma and other diseases such as diabetes and the rarer Marfan's syndrome, and may arise in steroid-dependent patients. Such lens disorders can be treated with cataract removal and intraocular lens implants; in selected cases, implants providing extra structural support are required.

Our sight is arguably the most precious of all our senses; if you think you may be developing a cataract, please don't hesitate to seek expert medical advice.

*Source: The Royal College of Ophthalmologists