



Device used for modern day cataract surgery. Image courtesy: Alcon.

# VISIONARY SURGERY

How World War II helped modernise cataract surgery.

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**CATARACT SURGERY** is one of the most common and successful transplant procedures today.

It has the highest quality of life improvement for the lowest cost, relative to hip, knee, or heart surgery.

A cataract is the change in consistency of the eye's natural lens, which sits behind the iris (the coloured part of the eye).

The development of a cataract typically shifts a person's perception of the colour spectrum: whites become yellows, blues darken, and subtle shades of colours are rendered indistinguishable.

Advances in technology and important observations, as well as human perseverance, have allowed us to enjoy two critical treatment technologies: phaco-emulsification – the use of ultrasound technology to break up the diseased lens – and implantable artificial lenses.

However, this has not always been the case.

The value of eyesight has always been important.

In 2250 BC, vision was a matter of survival, with hunting, gathering and combat being integral to life.

In those days, it was thought a cataract was an abscess (infection) in the eye, presumably when the natural lens turned white and therefore the person had no vision.

At this time, the king of Babylon made a law: 'that if a man opens an abscess (in the eye) of a man with a bronze lancet and saves that man's eye, he shall receive ten shekels of silver.'

The bronze lancet was later replaced by a sharp needle, as first described in 800 BC by an Indian ophthalmologist.

This method of 'operating' was known as 'couching' which comes from the French word *coucher*, meaning 'to put to bed'.

However, it was far from 'put to bed', as the operation was commonly fraught with infection, chronic inflammation and glaucoma, all of which result in blindness.

If the patient managed to avoid these complications, the natural lens was not replaced with any form of glasses and their vision remained extremely blurry.

It wasn't until 1268, when the average life expectancy edged beyond 40, that presbyopia (the loss of the natural lens' ability to change shape in order to focus on near objects) became more commonplace.

Roger Bacon, a monk who studied mathematics, physics and philosophy, discovered that a convex lens allowed people to focus on near objects.

The first glasses were made in Murano, Venice, by the famous glass blowers of Italy.

A number of changes in cataract removal technique occurred soon after, the procedure involving 'squeezing the mature lens' out of a large incision in the eye which was not sewn closed.

The patient was left bed-bound until the wound healed, head held in place with sand bags to prevent movement.

Again, no lens was placed in the eye and the patient was left with permanently blurred vision.

A solution did not arise until the Second World War, when Dr Harold Ridley observed a Royal Air Force Hurricane fighter pilot whose plane's

windscreen had shattered in combat, leaving shattered pieces of plastic in his eyes.

Ridley noted that the plexiglass-polymethylmethacrylate pieces of the windscreen did not cause inflammation and were not 'rejected' by the eye.

He then made the leap to use this material to fashion a lens that could be placed in the eye, avoiding the need for 'coke bottle' glasses.

In 1949, Dr Ridley performed the first intraocular lens implantation at St Thomas' Hospital in London.

In 1952, he presented his new surgical technique and use of his intraocular lens, receiving much criticism and opposition at the time.

Thankfully, he was encouraged by the Europeans, Americans, and Russians, later receiving numerous awards for his pioneering advancements.

It wasn't until just before Dr Ridley's death in 2001 that he was finally knighted in delayed recognition for his contributions to eye health.

Research and technological advancement have continued to improve cataract surgery, making it more efficient and effective whilst allowing for the implantation of lenses which can alleviate the need for spectacles in many patients.

Coastal Eye Surgeons, located at Hope Island, can assess your cataracts and help tailor treatment that would best suit your eyes and lifestyle. ● [coastaleyeyesurgeons.com.au](http://coastaleyeyesurgeons.com.au)



Couching for Cataract. Image courtesy: Wikipedia.



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