



Cataract Blindness

Cataract is the leading cause of blindness in the world. While easily treated with surgery, most people affected by cataracts live in developing countries where eye health services are difficult to access, costly or are simply not available.

The Fred Hollows Foundation works to provide cataract surgery to poor people in developing countries.

The Foundation is a world leader in blindness prevention and together with its partners, has pioneered ground breaking improvements in cataract surgery and treatment.

What is cataract blindness?

Cataract blindness occurs when the natural lens of the eye becomes cloudy, causing gradual loss of vision and ultimately blindness. It is rather like looking through a mirror in a bathroom that has become fogged up with steam.

Cataract is the most prevalent form of blindness in the world. It is much more common as a person's age increases; however in developing countries the onset of cataract blindness can often be much earlier.

The main risk factors for the onset of cataract include aging, exposure to ultraviolet light, injury, diabetes and smoking. (A)

The good news is that cataract blindness is treatable. Cataracts can be removed in a relatively routine operation, performed under local anaesthetic.

Facts about Cataract

- The World Health Organization (WHO) estimates that almost 18 million people are blind from cataract. (A)
- Cataract causes about 48% of all blindness. (B)
- Cataract blindness can be easily treated, yet most people afflicted by the disease are unable to afford or access treatment.
- The number of cataract cases is likely to double in the next 20 years due to the aging world population. More work needs to be done to prevent and treat the disease. (C)
- In some developing countries, the rate of cataract surgery is less than 250 operations per million people per year. This compares to a rate of up to 8,000 in some developed countries. (D)
- Cataract surgery is considered to be one of the most cost-effective forms of health intervention. (D)
- Over the past 15 years, The Fred Hollows Foundation has helped restore sight to more than one million people in over 20 developing countries.

The operation takes around twenty minutes in the hands of a skilled surgeon. In some developing countries, this operation can be performed for as little as £12.

Treatments for cataract blindness

The late Professor Fred Hollows, an ophthalmologist and social justice advocate of international renown, championed the use of modern cataract surgery in developing countries using an implanted intraocular lens (IOL), a thin piece of clinical grade plastic.

In the early 1990s, this surgical technique was not widely available in developing countries and was thought to be too complicated, risky and expensive to implement outside of westernised medical conditions.

Modern cataract surgery, using an IOL, is officially called ECCE + PCIOL (extra capsular cataract extraction with posterior chamber intraocular lens). It involves removing the natural, but clouded lens from the eye, leaving the thin lens capsule behind. An IOL is then implanted into the capsule and acts as a replacement lens (see diagram below).

Most cataract operations in developing countries were traditionally done by removing the whole lens from the eye, including the capsule which contained it. Because the natural lens of the eye had been removed, the patient was left with no focusing mechanism and needed thick 'coke bottle' glasses. This solution provided poor quality vision and was often only temporary.



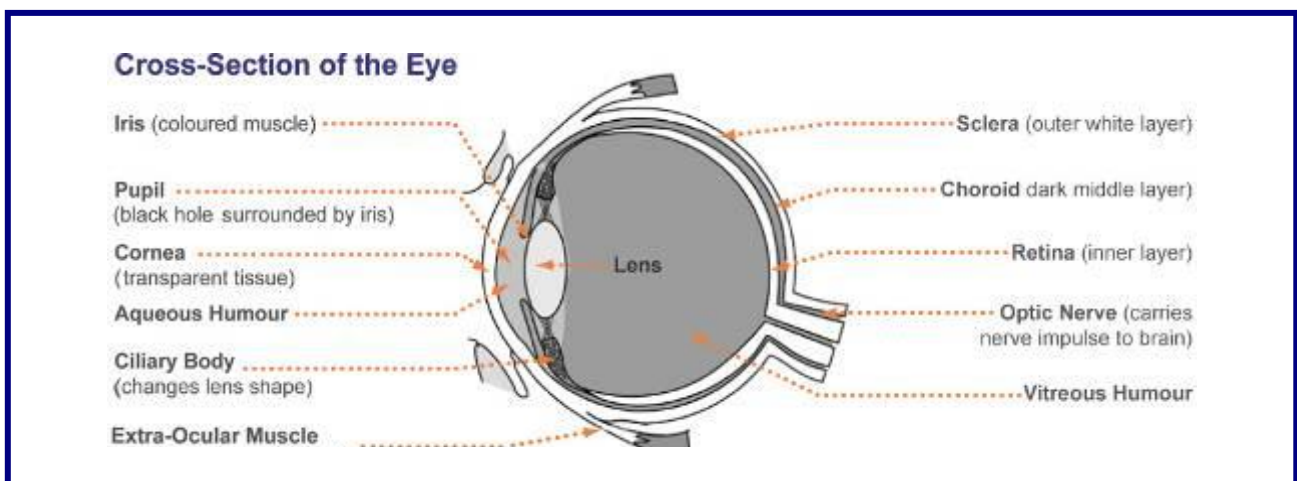
Photo | A patient at Tilganga Eye Centre waits to have the cataract in her left eye removed. Photo courtesy of The Fred Hollows Foundation

When glasses were lost or damaged, patients effectively lost their sight again.

By comparison, 'extra cap' surgery is safer for the eye and allows rapid return of sight (usually overnight), without the need for glasses.

Today, modern cataract surgery is generally regarded as standard treatment for cataract blindness in many developing countries.

In 1994, The Foundation supported the construction and development of IOL laboratories in Eritrea and Nepal to manufacture high quality, low cost IOLs.



By producing IOLs in-country the market price was dramatically reduced and more developing countries were able to afford to purchase them.

Today, the laboratories have a combined manufacturing output of approximately 250,000 lenses annually and export to more than 40 countries

Advances in surgical techniques

In 1998, Dr Sanduk Ruit and his team at The Tilganga Eye Centre in Nepal (a partner of The Foundation) developed a new technique for cataract surgery that did not involve the use of sutures (thread for stitching), one of the most expensive components of the operation.

Not only is 'sutureless surgery' far less expensive, it is safer and faster (taking around half the time of the standard technique). Many of the training programs supported by The Foundation now train surgeons in the new sutureless technique, along with the standard ECCE + PCIOL technique.

A new IOL design has subsequently been developed to match the needs of sutureless surgery. Known as the FH105, the IOL (which is smaller in diameter) fits snugly into the eye through a tighter incision.

In 2001, Tilganga Eye Centre developed a further refinement to its sutureless technique called 'temporal' section. An incision is made on the side rather than from the top of the eye. The 'temporal' section produces better post-operative results, reduces astigmatism and leads to earlier recovery of vision.

New Beginnings for Zhou Jing Guang

When The Fred Hollows Foundation met Zhou Jing Guang from Jiangxi Province in China, the 85 year old had been practically blind for ten years.

He could only see shapes in terms of light and dark.

Zhou was almost totally dependent on his son and confined to the four walls of his home.

He spent his days sitting doing the only thing that he could still do – hand sorting cotton before it was spun into yarn and sold at the markets.

Zhou heard about The Foundation's work through friends in the village who'd had their sight restored at Gao'an Hospital.

Along with two other villagers, Zhou travelled to the hospital for treatment. His son and son-in-law waited anxiously to see the results.

When the bandages came off, Zhou was absolutely thrilled to see his 10 year old grandson for the first time.



Photo | Zhou Jing Guang sees his grandson for the first time after having the cataracts removed from his eyes. Photo courtesy of The Fred Hollows Foundation

References

- A. *What is Avoidable Blindness, Cataract*, VISION 2020: The Right to Sight website accessed 16 May 2008 www.v2020.org
- B. *Magnitude and causes of visual impairment*, Fact Sheet 282, World Health Organization, November 2004, <http://www.who.int/mediacentre/factsheets/fs282/en/index.html>
- C. *Cataract Blindness: Challenges for the 21st Century*, WHO Bulletin, 2001, 79 (3), pp 249-250 http://www.who.int/ncd/vision2020_actionplan/documents/vol79.no.3.249-256.pdf
- D. *State of the World's Sight, Vision 2020: The Right to Sight*, VISION 2020, 2005, Executive summary, pp 9-10, full report, pp 27-30 <http://www.v2020la.org/english/docs/State%20of%20the%20World's%20Sight.pdf>