

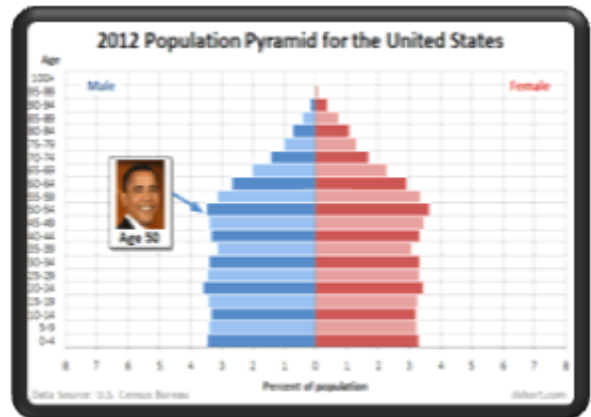
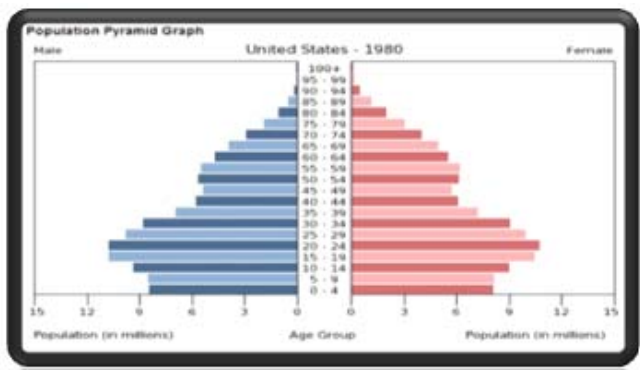
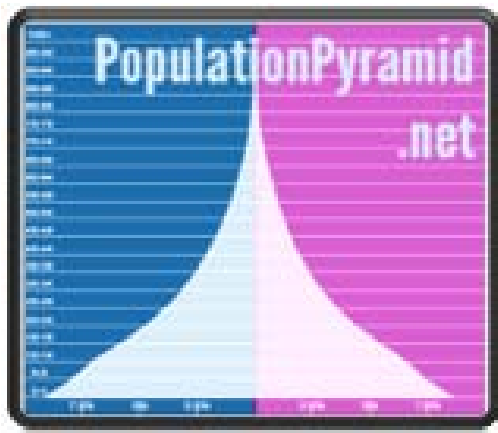
Presidential Address 2014

Towards eliminating avoidable blindness

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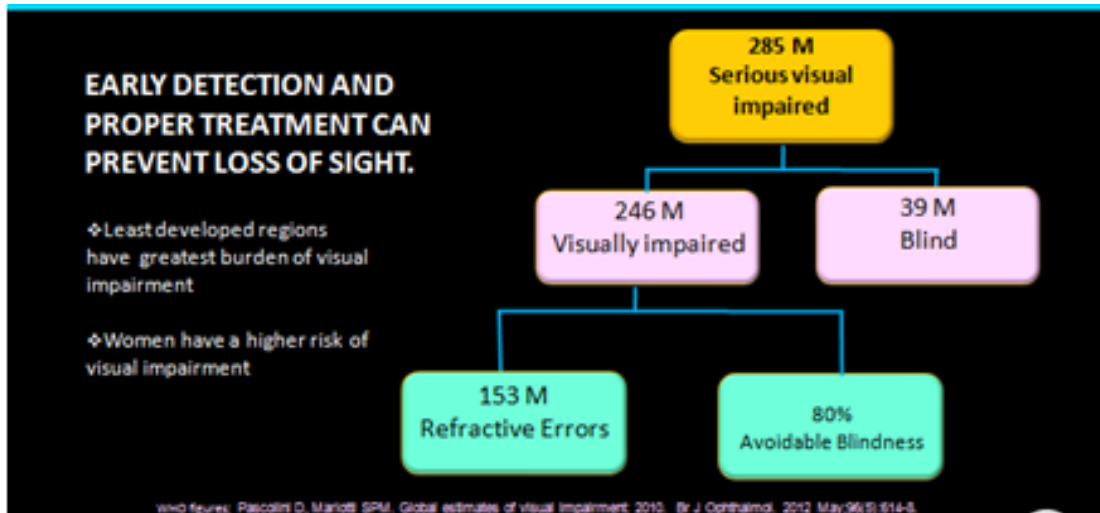
My theme for the year 2014 is the advances in ophthalmology in our Nation, which go hand in hand with the great development taking place in our beautiful country which make the mission a success, “protect the eye to see the world”.



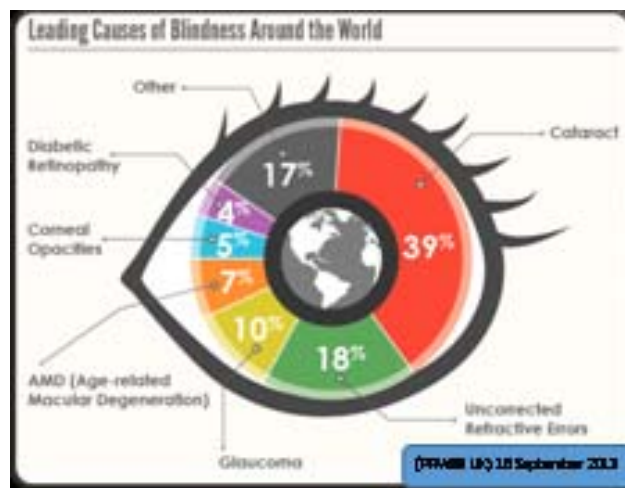
A snap shot of the world population which indicates the increase in the elderly population as apposed to the decline in the percentage of the younger population which reflects the improvement of the health care system. These population pyramids show the increase in the numbers of the middle and elderly population aged above 40 years.

¹President, College of Ophthalmologists of Sri Lanka, 2014.

With the improvement of the Health Care System, Sri Lankan figures fall within a range similar to that of the United States, thus signaling a need to facilitate and improve health care of most noninfectious and non-traumatic eye ailments as they are more common amongst the middle aged and elderly people.



According to the WHO figures, 285 million people are visually impaired and 39 million people are blind in the world. 65% of those who are visually impaired and 82% of those who are blind are above the age of 50 years. Women have a higher risk of visual impairment. From those who are visually impaired 80% are due to avoidable blindness that may have been preventable or treatable. Thus; the prevention of blindness should be our main target and common goal.



The leading causes of blindness may differ from country to country but the most prevalent cause common to all countries is cataract.

To fulfill the Mission of our College, “protect the eye to see the world”, what should be our role as the College members in our country?

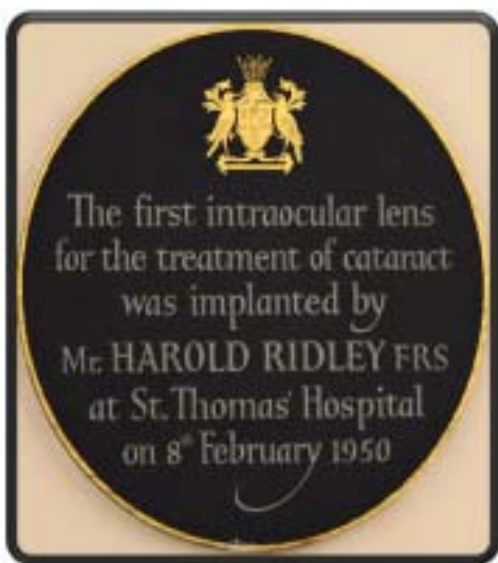


Couching

When we look back in to the history of ophthalmology, as opposed to the past there now exists great advancements in technology and treatment modalities.

For example with regard to cataract surgery, the great Indian surgeon Susruta was considered to be the father of cataract surgery in 800 BC. Couching was the first surgical procedure practiced. In this procedure cataracts were being deliberately dislocated in to the vitreous by using a needle so that it would make the visual axis clear and offer some improvement of vision to the patient. This method was practiced from the 5th century BC until 18th century, and still is being practiced today in some countries.

The modern method of cataract extraction was first described in 1745, by the French ophthalmologist, Jacques Daviel who successfully removed a cataract through a large incision in the cornea, and corrected the vision with aphakic glasses. These glasses were unfortunately very thick and imposed great inconvenience.



Cataract surgery with intraocular implants performed today is started after accidental discovery by a British surgeon named Harold Ridley in 20th century. He noticed that shattered particles of lightweight Plexiglas airplane canopies lodged in airmen’s eyes did not cause rejection. Deducing that Plexiglas, technically called polymethyl methacrylate, was biologically inert, Ridley devised a polymethyl methacrylate “intraocular” lens which he successfully implanted in a post-cataract eye in 1949. Later cataract surgery was further refined to the extra capsular cataract extraction and lens implant Charles Kelman was honored by introducing phacoemulsification in 1967 after being inspired by his dentist’s ultrasonic probe. Phacoemulsification revolutionized the modern cataract surgery with the advantage of having a rapid postoperative recovery of vision with minimum complications and became popular all over the world.



Dr. Charles Kelman

Laser assisted cataract surgery is the latest technological development in modern world. In the coming years I am sure FSL will revolutionize the way we perform cataract surgery. These methods have already shown excellent results in performing a precise and self-sealing corneal incision, a highly circular strong and accurate capsulorhexis, and a safer and less technically difficult phacofragmentation which may facilitate trans lenticular hydro dissection with minimum stress on the lens capsule and use of less ultra sound energy in phacoemulsification to be expended inside the eye.



Types of refractive errors

One of the biggest challenges in restoring vision is uncorrected refractive errors. 153 million people are affected with refractive errors world wide.

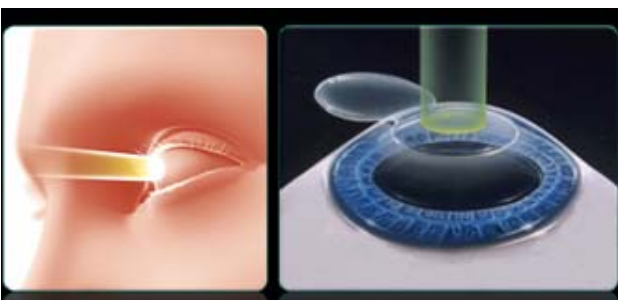
These results in blurred vision, which can be so severe that it causes blindness. The most common refractive errors are: Hypermetropia, myopia, astigmatism.

These refractive errors were corrected using magnifying glasses in the early days. Later custom made lens powers were introduced. Spectacles remain the simplest and the most popular way of correcting refractive errors. The contact lens is the next development in this sphere which is cosmetically and optically much better though handling, maintenance and cleaning may be cumbersome and also carries the risk of infection.

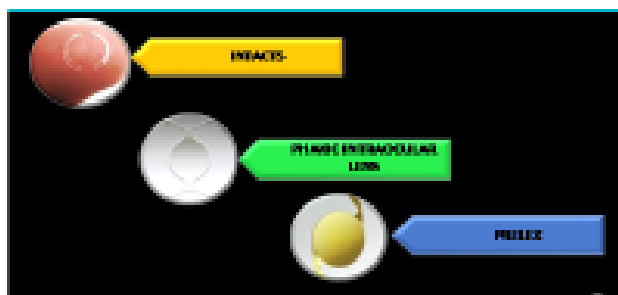
Apart from optical corrections there are numerous surgical procedures for the correction of all types of refractive errors, such as radial keratotomy and relaxing limbal incisions to alter the corneal curvature. With the development of laser procedures radial keratotomy is rarely used today and is considered an obsolete procedure.

Corneal transplant is another procedure opted to alter the surface irregularities as well as corneal opacities.

The greatly in "Vogue" procedure of LASIK has gained much popularity amongst the younger age groups. This utilizes controlled laser beams to fashion and reshape the corneal curvature and correct refractive errors.



Laser refractive surgeries



Refractive correction with ocular

Corneal curvature adjustment has advanced to such a level that today it is possible to use intra corneal implants (INTACS) to correct these errors.

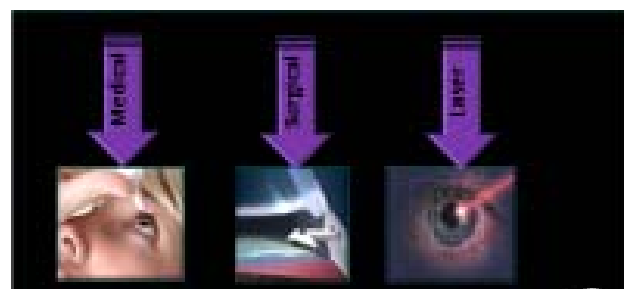
Another advancement has been the phakic intraocular lens: Designed for patients who are too nearsighted for LASIK and PRK. This phakic implant is inserted through a small incision and placed in anterior chamber or posterior chamber while the eye's natural lens is left in place. Another such procedure is the PRELEX which stands for presbiopic lens exchange: A multifocal intraocular lens implant is done by removing the clear lens with phacoemulsification to keep them free of glasses.

Glaucoma



The second leading cause of global blindness is glaucoma. Which is known as the "Silent stealer of the vision", is an optic neuropathy. The main causative factor is high intraocular pressure. In managing glaucoma three modes of therapies are available

How do we manage

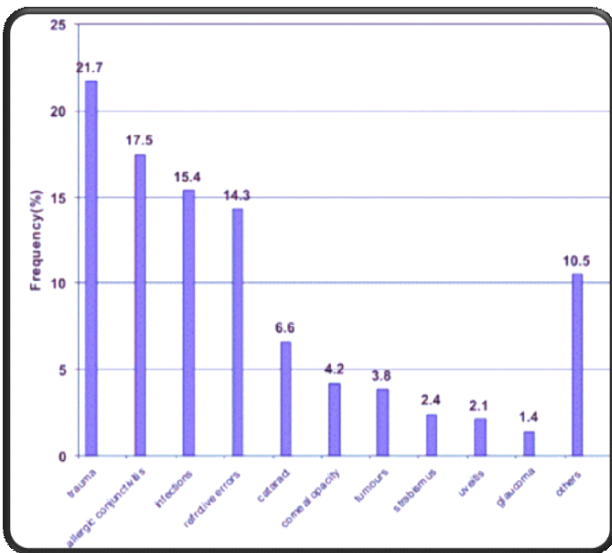


The roots of modern surgical devices and procedures are clearly evident in the mid-1800s. Since 1856, Von Graffe performed an iridectomy for angle-closure glaucoma. The first external filtration procedure recorded is the anterior sclerectomy, subsequently cyclodialysis and cyclo-cryo therapy.

Since 1968 trabeculectomy is the gold standard for surgical management of glaucoma.

The modern era of glaucoma surgery has clearly placed an improved safety for patients. Examples of this trends include the Moltano implants, the Ex-Press shunt, AB-Interno implants like, SOLX and iStent, are the latest trends in surgical management of glaucoma.

As common to all diseases prevention is better than cure, we here hope to improve our screening and detection procedures to detect a larger number of glaucoma suspected patients and prevent its progression to blindness. Medical personnel who are going to carry out the screening include, medical officers, ophthalmic technologists and optometrists. These programs are being carried out by our energetic focal points of the Vision 2020 program.



Visual impairment in children

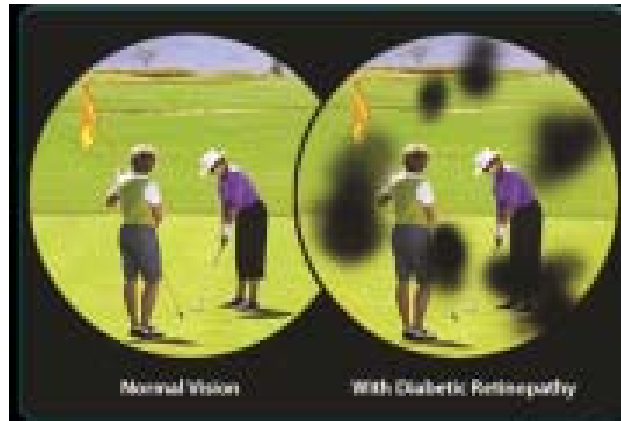
Even though I have mentioned cataract, refractive errors and glaucoma as leading causes for visual impairment, I consider childhood blindness as being a priority. This is considering the number of years the child would have to live with the impairment and the possibility of correction with a high success if detected early.

The following proposals are forwarded by the College to work in collaboration with the Vision 2020, Ministry of Health and Ministry of Education for control of childhood blindness. They include visual acuity screening of every child once in two years, starting from preschool age. Currently school screening is done at year 1, 4 and 7.



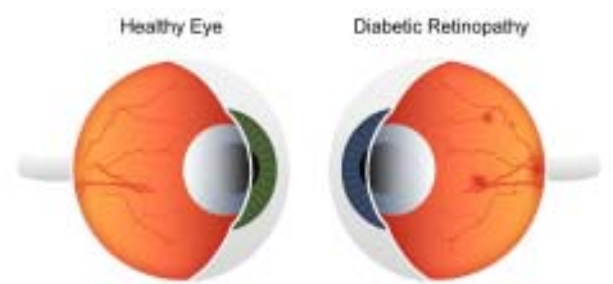
Creating awareness amongst school children with the help of attractive awareness posters on common cause of childhood blindness and how to minimize ocular trauma at schools and with the help of animated videos in school libraries or which are uploaded into a web site to educate children on the common ophthalmic problems, causes of ocular trauma and how they can protect their eyes. Health tips to be announced at school during lunch interval in an attractive way by the way of a song or rhyme. These proposals have been approved by the College and forwarded to the Ministry of Education. These will be implemented at schools in future as a measure to prevent child hood blindness.

Diabetes and the eye



Diabetes is the commonest cause of visual impairment in working age group. Of those who are 40 years and above 25% are known to have impaired glucose tolerance.

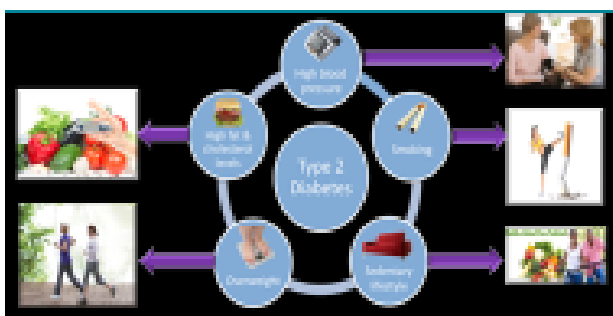
Long standing diabetes with poor glycemic control may lead to many ocular complications. Common ocular complications are cataract, glaucoma, diabetic retinopathy, retinal vascular occlusions, cranial nerve palsies, orbital and ocular infections.



Diabetes is a multisystem disease. It progressively damages the capillaries causing micro vascular occlusion and micro vascular leakage resulting damage to many target organs and one of the foremost being the eye. Strict glyceemic control may decrease the progression of the complications and aid in the treatment process of diabetic retinopathy.

But nevertheless as ophthalmologists we are concerned by what we can do for prevention of blindness by diabetic retinopathy. Our objectives are,

1. To provide regular screening.
2. To provide laser coagulation facilities island-wide.
3. Provision of Anti-VEGF treatment
4. To provide facilities for vitreo-retinal surgical units.



High risk factors

Other high risk factors such as hypertension, smoking, sedentary life style, obesity, and hyper-lipideamia may drag one faster towards all the systemic complications of diabetes. A healthy life style may keep one away from sight threatening complication of diabetes.

Preventive measures and management protocols of diabetic retinopathy include retinopathy screening of all diabetic patients by a physician, general practitioner, medical officer or optometrist at the time of their diagnosis with the use of a direct ophthalmoscope. Detail funduscopy with indirect ophthalmoscope or slit lamp bio-microscopy can be done at eye clinics.

For mass screening we can use a fundus camera for fundus photography.

Early management is utmost important. Laser treatment is the best mode of therapy in controlling the progression of retinopathy. Currently mainstay of the adjunct treatment is intra vitreal injection of Anti Vascular Endothelial Growth Factor (Anti VEGF). End stages of diabetic retinopathy could be managed with the latest vitrectomy procedures.

Retinopathy of prematurity is one of the biggest challenges for ophthalmologists and neonatologists. With the improvement of neonatal care the prevalence of ROP is on the rise and it is a blinding disease if left untreated. Preventive measures includes: adequate perinatal care and appropriate intensive care which lessens the tissue hyperoxia/hypoxia swings.

Retinopathy of prematurity

- Screening all high risk babies
- Reduce premature births
- Excellent neonatal care
- Comprehensive oxygen management
- Avoid intermittent hypoxemia
- Early detection and treatment

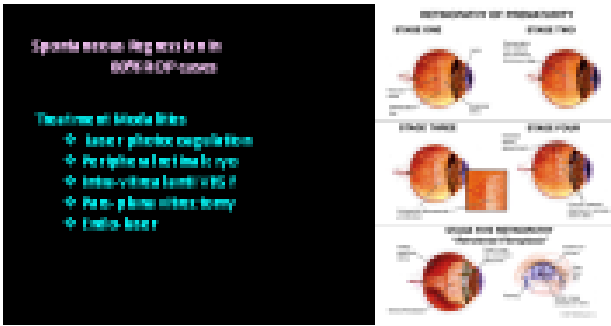
Future Management: an research trail

- Intra vitreal growth factor I
- Growth hormone
- Angiostatin
- Placental-derived angiostatin factor II

**PREVENT CHILDREN GOING BLIND WITH ROP !!
GIVE RIGHT CARE FOR THE CHILDREN**

Ophthalmic management includes screening for retinopathy of high risk infants. The treatment of acute severe ROP includes retinal photocoagulation or retinal cryo-therapy. Intra-vitreous anti VEGF is considered to be the most recent advancement in the treatment of ROP. Vitrectomy surgery is indicated in late stages of disease with tractional retinal detachment. Despite advances in ophthalmic management, number of infants go blind from ROP each year.

Management



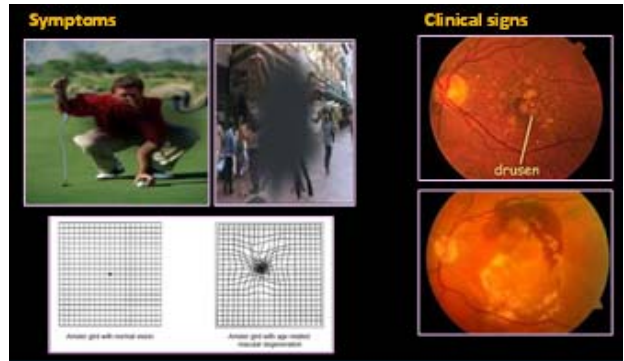
Prevention of ROP by regular screening according to guidelines is of utmost importance. Specific screening criteria for ROP have been established, although they vary in different parts of the world. In the US, screening examinations are performed in all children younger than or equal to 32 weeks gestational age and less than 1500g at birth. In addition, we also screen children who, neonatologists believe are at risk for ROP. Often, these are children with an unstable course or severe systemic illnesses such as sepsis.



Steps taken by the College for prevention of blindness from ROP

The College of Ophthalmologists of Sri Lanka has taken the following steps with the collaboration of Family Health Bureau and the Ministry of Health to minimize blindness from ROP. Updated the ROP guidelines have been circulated to all neonatologists and ophthalmologists. A leaflet has been designed on ROP to improve awareness of the parents. A standard referral letter has been formulated to be sent by neonatologists to the relevant consultant ophthalmologist and a record sheet and feedback forms give the summary of clinical finding and the management plan.

As I mentioned earlier, the Sri Lankan population is considered to be one of the fastest growing aging populations in the world. Age related macular degeneration (AMD) is a leading cause of progressive visual loss in people more than 60 years of age, causing significant visual disability in our country.

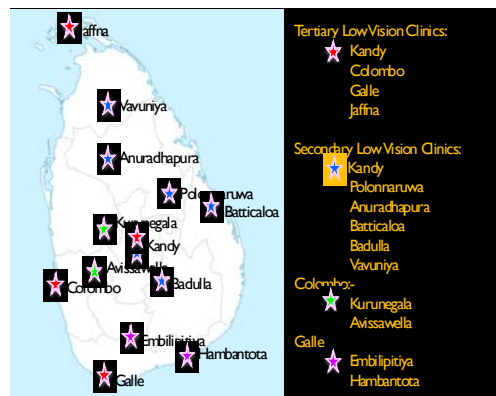


Clinical features and management

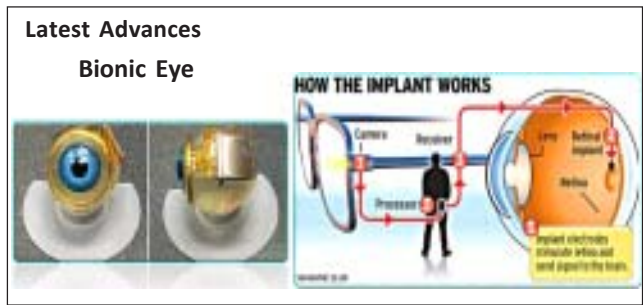
Symptoms of age-related macular degeneration (ARMD) would be, distortion of images and straight lines which may progress to a gradual loss of central vision. The presentation of ARMD is usually insidious and often detected during routine fundus examination.

Mainstay of treatment of ARMD is anti VEGF therapy. In Wet AMD anti angiogenic protein inhibits vascular endothelial growth factor (VEGF) which stimulates abnormal vascular growth. Anti VEGF medication is absorbed into the tissue of the macula and reduces the level of VEGF activity and pauses formation of the leaky blood vessels. The level of VEGF in the eye is reduced and growth of the abnormal blood vessels halted and regressed. Controlling angiogenesis and related swelling stabilizes vision and further damage to the macula. Some patients treated with anti VEGF for AMD regain some form of vision.

When all treatment modalities fail the patient becomes blind but there is still a chance and hope to make our patients independent through low vision services.



Distribution of LV clinics



Revolutionary: The high-tech glasses which allow the blind to see

Visual disability poses major impact to our society. People with visual disabilities, find it difficult to get on with their day to day activities. They have reading difficulties which may cause frustration and depression. Their physical immobility leads to a higher prevalence of medical morbidities. Daily tasks such as managing currency is impossible and affects their independence and security.

We have a strong network of low vision service centers throughout the country. All visually disabled patients have free accessibility to these centers. The low vision devices are given free of charge at these centers. Students sitting for A level and O level are given extra benefits like additional time. Universities now accept and allow low vision candidates to use computers at their examinations. Special education facilities for visually impaired children are in place. There are tactile guide paths and electronic audible road crossing signals for visually disable pedestrians available in a few cities. Tactile features in currency notes is a great invent of our country.



Services available in our country

Latest developments in Low Vision care is Hi tech glasses which make the most of the existing sight, with additional images appearing in the line of sight to give extra information about who or what is in front of them. The Bionic Eye is an implant placed in the back of the eye. It uses the eyes' natural image processing capabilities beyond the light detection stage to produce a visual perception in the patient that is stable and follows their eye movement. This has improved quality of life for patients suffering from vision loss caused by retinitis pigmentosa and age-related macular degeneration.

The College of Ophthalmologists of Sri Lanka is in the process of implementing a register for the blind to identify their needs to help them throughout the life through social services, extend and facilitate rehabilitation centers, help them at school with special attention, and educate them in special blind schools.



To end “only thing worse than being blind is having sight but no vision” – Quote by Helen Keller.