



香港中文大學
The Chinese University of Hong Kong



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For Immediate Release

Press Release

Early prevention of myopia reduces risk of blindness The Chinese University of Hong Kong Eye Centre launches Public Eye Health Education Series against Myopia

(October 27, 2013, Hong Kong) Short-sightedness (myopia) is very common in Hong Kong. People in Hong Kong suffer from a higher prevalence of myopia compared with inhabitants from other countries or other areas of China. The number of myopic population in Hong Kong is three times of that of the United States, and more than ten times that of the Middle East¹.

This common eye problem has been shown in recent years to affect younger children. According to recent studies conducted by The Department of Ophthalmology and Visual Sciences (DOVS) at The Chinese University of Hong Kong (CUHK), the number of young children affected by myopia in Hong Kong has been increasing over the past decade. Pre-school children with short-sightedness have tripled from 2.3% a decade ago to 6.3% today². In a survey of more than seven thousand students, an alarming rate of 30% of children 7 years old or less and 50% of those 12 years old or less suffers from myopia¹.

Serious myopia carries a potential risk of blindness

Myopia is common and high myopia that afflicts many (High myopia refers to those with myopia higher than 6 Diopters) is closely associated with degenerative changes of the choroid, sclera, and retinal pigment epithelium causing higher probability of serious complications such as retinal detachment, glaucoma, cataract and even blindness.

Professor Clement Tham Chee Yung of DOVS said, "We see an increasing trend of myopia in Hong Kong. As the Asia-Pacific Academy of Ophthalmology (APAO) is holding its Eye Care Week in October, CUHK Eye Centre takes the opportunity to raise awareness of ocular health and the potential complications of myopia. Our goal is to remind the public of the importance of early prevention and intervention of myopia to reduce incidents of serious complication or blindness to the minimum."

Technology meets community education at CUHK Eye Centre

Successful interventions for myopia are now available at CUHK Eye Centre. According to Dr Jason Yam, Assistant Professor of DOVS, atropine eye drops in conjunction with photochromic progressive lenses can effectively prevent sclera hyperplasia. Use of atropine eye drops have been studied in four to twelve-year-old children in Hong Kong. The drug is shown to be effective



in myopia retardation³. Glaucoma associated with myopia is one of the causes of blindness. Professor Clement Tham Chee Yung pioneered a series of clinical trials on glaucoma, resulting in a number of research achievements. Recent research achievements include the introduction of Argon Laser Peripheral Iridoplasty (ALPI), Selective Laser Trabeculoplasty (SLT) and Endoscopic Cyclo-Photocoagulation (ECP) and other advanced technologies, resulting in more efficacious diagnosis and treatment of glaucoma, effectively avoiding progressive loss of visual acuity.

CUHK Eye Centre has served the Hong Kong community for nearly two decades. Before 2007, the Eye Centre is the only institution to provide tertiary professional courses and training in ophthalmology. As the trailblazer of professional ophthalmology in Hong Kong, CUHK Eye Centre is committed to the promotion of eye care awareness in the general public. In the coming year, a series of public education talks has been lined up. The three main topics include “the effect of myopia on adult health”, “the long term effects of myopia on children and adolescents” and “the health threats of myopia in the older generation”, These topics, covering the effect of myopia in the different strata of the community, will be analysed and explained in depth for the public.

Professor Pang Chi Pui, Chairman of DOVS said, "As CUHK Eye Centre is about to enter its 20th year, it will continue to promote the visual health of Hong Kong citizens. In order to instil proper knowledge of eye health and myopia, the Centre is running a 12-month public education series, with the ultimate aim of achieving universal eye care and control of myopia."

CUHK Eye Centre public education series

Topics of public seminars

Oct 2013 to Jan 2014	The effect of myopia on adult health
Feb to May 2014	The long term effects of myopia on children and adolescents
Jun to Sept 2014	The health threats of myopia in the older generation

Reference :

1. Fan DS, Lam DS, Lam RF, Lau JT, Chong KS, Cheung EY, Lai RY, Chew SJ. Prevalence, incidence, and progression of myopia of school children in Hong Kong. Invest Ophthalmol Vis Sci. 2004 Apr;45(4):1071-5.
2. Fan DS, Lai C, Lau HH, Cheung EY, Lam DS. Change in vision disorders among Hong Kong preschoolers in 10 years. Clin Experiment Ophthalmol 2011;39(5):398-403.
3. Fan DS, Lam DS, Chan CK et al. Topical atropine in retarding myopic progression and axial length growth in children with moderate to severe myopia: a pilot study. Jpn J Ophthalmol 2007;51:27-33.



Patient case summary

Background and conditions

- Ms Lai, mid to late 40's, extreme high myopia in both eyes.
- Right eye: poor vision of 20/200 due to old retinal detachment 20 years ago. Received cryotherapy. Diagnosed with myopic maculopathy.
- Left eye: vision 20/40. Received cataract operation. Diagnosed with glaucoma.

Impact on daily life

- Central vision has been damaged causing serious visual discrepancies. The front is only visible through peripheral vision.
- Unable to determine position of objects, for example, going to restaurants and missing the restaurant counter causes embarrassment.
- Being visually impaired makes it difficult to cope with paperwork in her job.

Treatment and follow-up

- Ms Lai received treatment at CUHK Eye Centre in 2011.
- Through choroid and retinal Fluorescein Angiography, Ms Lai's left eye was diagnosed with myopic choroidal neovascularization.
- Between 2011 and 2012, she suffered from 2 episodes of left eye submacular haemorrhages. She was given three doses of Vascular Endothelial Growth Factor inhibitors (anti-VEGF), injected monthly for three consecutive months which successfully stabilized the condition. Due to the recurrent issue, she had to repeat her treatment course of anti-VEGF once.
- Currently Miss Lai has follow-up appointments with CUHK Eye Centre every two to three months and receives anti-glaucoma eye drops daily to control the glaucoma in her left eye. Depending on the progress of the disease, laser or surgical treatment may be required.

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About CUHK Eye Centre

With a view to integrating the academic sector with the public health care service, and meeting with the growing demand for ophthalmic services in Hong Kong, CUHK Eye Centre (CUHKEC) (formerly known as the University Eye Centre, or UEC) was set up in the year of 1995 on the 3/F of HKEH building. Established under the Department of Ophthalmology and Visual Sciences, The Chinese University of Hong Kong, CUHKEC has numerous missions, visions, and functions, including the provision of private clinical ophthalmic services through the CUHK-HKEH Private Eye Clinic.

In addition to the private clinic operation, CUHKEC also operates the CUHK Research Clinic. The CUHK Research Clinic conducts clinical ophthalmic research, including clinical drug trials and surgical trials involving laser refractive surgery, such as LASIK. We conduct upfront research on ophthalmic imaging and electrophysiology, utilising state-of-the-art equipment in optical confocal topographies and retinographies for clinical and experimental studies. We spearhead eye genetic services and eye genetic researches. We also take part in stem cells and integrated Chinese and Western Medicine researches as well. All these allow us to better understand early diagnosis and treatments of all major eye diseases.

A number of research facilities have been set up under CUHKEC with the objectives to strengthen research and education on detection and treatment of respective major eye diseases. These facilities include CUHK Laser Refractive Surgery Centre, Pao So Kok Macular Disease Treatment and Research Centre, and Lim Por-yen Eye Genetics Research Centre.



Key accomplishments of CUHK Eye Centre

Myopia

- Launched a large scale epidemiology study involving more than 7000 school children. Around 30% children suffered from myopia at the age of 7 and increased rapidly to more than 50% by age 12.
- Another recent epidemiology study showed that prevalence of myopia among preschooler increased three times compared with 10 years ago.
- Introduced the use of atropine eye drops in prevention of myopia progression.
- Clinical researchers at CUHK Eye Centre have identified *ZFHX1B* as a new susceptibility locus that contribute to the development of severe shortsightedness.

Glaucoma

- First in the world to use argon laser peripheral iridoplasty (ALPI) as first-line treatment for acute glaucoma, and pioneered the use of early lens extraction to prevent recurrence of acute glaucoma.
- Conducted numerous clinical trials to evaluate and compare different surgical treatments for glaucoma, including lens extraction, trabeculectomy, non-penetrating trabecular surgery, laser-assisted trabecular surgery, goniosynechialysis (GSL), glaucoma drainage device implantation, cyclophotocoagulative procedures (including the Endoscopic CycloPhotocoagulation introduced in 2012), and combinations of the above.
- Introduced Selective Laser Trabeculoplasty (SLT) into Hong Kong which is particularly effective in open-angle glaucoma, including the type of glaucoma associated with shortsightedness.
- Three Primary angle-closure glaucoma (PACG) susceptibility genes or regions (*PLEKHA7*, *COL11A1*, and *PCMTD1-ST18*) were recently discovered providing a future direction for the management of PACG.

Retina

- First in the world to successfully perform half-dose verteporfin photodynamic for central serous chorioretinopathy.
- Among the first to incorporate combined anti-VEGF and photodynamic therapy for polypoidal choroidal vasculopathy.
- First in the world to use combined laser & intravitreal steroid for diabetic macular edema.



Refractive Surgery

- The CUHK Laser Refractive Surgery Centre has been awarded the Reader's Digest "Trusted Brand Award" in Hong Kong for three consecutive years since 2011. The Refractive Surgery Unit is currently engaged in clinical research for evaluation of different LASIK wound profiles in order to optimize the outcomes of laser refractive surgery.

Orbital & Oculoplastic Surgery

- Published the first randomized controlled trial on endoscopic dacryocystorhinostomy for nasolacrimal duct obstruction performed solely by ophthalmologists in 2013.
- Pioneered the use of following in Hong Kong: Mohs micrographic surgery for the treatment of periocular skin tumor, designated thyroid eye clinic conducting numerous clinical trials to evaluate different medical and surgical treatments for thyroid eye disease including intravenous steroid infusion, image-guided orbital radiotherapy, immunosuppressive treatments, endoscopic and small-incision orbital decompression as well as ongoing translational studies on genetics and immunological biomarkers for thyroid eye disease.
- Promote the use of minimally invasive eyelid (ptosis, entropion, blepharoplasties, facial reanimation), lacrimal (endoscopic dacryocystorhinostomy and endocanalicular lacrimal operation) and orbital (transconjunctival orbitotomy for fracture-repair and tumor removal) surgeries.
- Among the first to incorporate frameless neuronavigation in performing orbital surgeries including endoscopic optic canal decompression, optic nerve sheath fenestration and intraorbital foreign body removal.

Eye Diseases in Children

- Pioneered the use of mersilene mesh as sling material for infant ptosis.
- Pioneered early intraocular lens implantation within first year of life in infant with congenital cataract.