

Optometry DistList

Instance 2016: 29
Thursday, 30 June 2016

Today's subjects

- The iPod binocular home-based treatment for Amblyopia in adults
- Eyes offer new window into Alzheimer's disease
- Admissions open for FBDO
- Cost-effective retinal scanner for early diagnosis of glaucoma, diabetic retinopathy
- How diabetes affects contact lens wear
- Peek Potential

Date: Tuesday, 14 June 2016
From: Shweta Sharma (shwetasharma.opt@gmail.com)
Subject: **The iPod binocular home-based treatment for Amblyopia in adults: efficacy and compliance**

Occlusion therapy for Amblyopia is predicated on the idea that it is primarily a disorder of monocular vision; however, there is growing evidence that Amblyopia patients have a structurally intact binocular visual system that is rendered functionally monocular due to suppression. Further it is found that a dichoptic treatment intervention designed to directly target suppression can result in clinically significant improvement in both binocular and monocular visual function in adult Amblyopia patients. Previously the treatment has been administered as a psychophysical task and more recently as a video game played on video goggles or an iPod device equipped with a lenticular screen.

The case-series study of 14 amblyopes (six strabismics, six anisometropes and two mixed) ages 13 to 50 years aimed to investigate: 1. whether the portable video game treatment is suitable for at-home use and 2. whether an anaglyphic version of the iPod-based video game, which is more convenient for at-home use, has comparable effects to the lenticular version.

The dichoptic video game treatment was conducted at home and visual functions were assessed before and after treatment. It was found that at-home use for 10 to 30 hours restored simultaneous binocular perception in 13 of 14 cases along with significant improvements in acuity ($0.11 \pm 0.08 \log \text{MAR}$) and Stereopsis ($0.6 \pm 0.5 \log \text{units}$). Further, the anaglyph and lenticular platforms were equally effective. In addition, the iPod devices were able to record a complete and accurate picture of treatment compliance. The home-

based dichoptic iPod approach represents a viable treatment option for adults with Amblyopia.

For the complete article, please visit:

<http://onlinelibrary.wiley.com/enhanced/doi/10.1111/cxo.12192/>

The iPod binocular home-based treatment for amblyopia in adults: Efficacy and compliance. ClinExpOptom 2014; 97: 389–398.

Date: Saturday, 12 June 2016

From: Anuhya N (anuhya.nalluri@gmail.com)

Subject: **Eyes offer new window into Alzheimer's disease**

The eyes of people with Alzheimer's disease are distinctly different from those of normal aged individuals. The changes identified could offer reliable evidence of the disease. More importantly early signs of these changes might allow treatment for the disease before it worsens and causes irreversible damage of the nerves. Right now, doctors and patients get no such early warning and specific symptoms. The only sure way to confirm an Alzheimer's diagnosis is to look at samples of brain tissue after a victim has died. Archana Murali and Elena Berman identified new signs that appear in the eye, to signal Alzheimer's disease in living people. They compared the retinal scans of 68 Alzheimer's patients to that of 65 healthy people. Some findings have striking signs in comparison, which they presented at the 2016 Intel International Science and Engineering Fair, US.

Alzheimer's disease causes confusion, psychological mood changes, problems with memory and this condition cannot be prevented or cured. About 5.3 million people in the United States currently have Alzheimer's disease and it is the sixth leading cause of death in the elderly. The family members of the victim and caregivers also face huge emotional and financial burdens.

The retinal nerve fiber layer in Alzheimer's patients ranged between 20 and 25 micrometers, thinner than the 30 to 34 micrometers of the healthy volunteers. In healthy people, the thickness of the Choroid layer ranged from 180 to 218 micrometers, but in Alzheimer's patients, it typically ranged between 213 and 256 micrometers. Although those ranges overlap slightly, on average the Alzheimer's patients had choroids that were much thicker. The diameter of the central retinal vein in Alzheimer's patients is measured between 83 and 94 micrometers relatively constricted to the people without Alzheimer's, where the vein's lumen normally ranged between 131 and 134 micrometers.

Today, brain scans are only 75% accurate in diagnosing Alzheimer's disease, but this early analysis, appears to be more than 95% accurate. While the cost of a cerebral scans is around USD 2,600, ophthalmologists can take an image of a patient's retinas for about USD 100.

If Alzheimer's disease is indeed behind these internal eye changes and they show up early in the development stage, then this test could become an easy, low-cost means of predicting

and/or diagnosing the disease and become a part of a routine eye exam and be a screening test for detecting early changes of Alzheimer's disease in the at-risk population.

For the complete article, please visit: <https://student.societyforscience.org/article/eyes-offer-new-window-alzheimer-disease>

Date: Wednesday, 15 June 2016

From: Ashok Kumar (ashok.s@snmail.org)

Subject: **Admissions open for FBDO - Fellowship Diploma in Ophthalmic Dispensing from Association of British Dispensing Opticians**

The FBDO programme is a six semester program spread over three years. A special waiver of seven courses has been given to the four year Optometry students and graduates after due consideration to their exemplary curriculum in the BSc degree program. These pursuant will have to study for a period of eight months. The course is conducted at 'The Sankara Nethralaya Academy', Chennai.

The Association of British Dispensing Opticians is the qualifying body for dispensing opticians in the UK. Its objectives include promoting better education and training of dispensing opticians and improving the practice of dispensing optics.

The main objective of the course is to provide specialized scientific dispensing skills to budding optometrists that will enable them to professionally manage an optical outlet independently either as an entrepreneur or as an employed professional in the optical retail industry.

For further details, please write to ashok.s@snmail.org

For the complete article, please visit: <http://www.thesnacademy.ac.in/fellowship-of-british-dispensing-opticians.html>

Date: Thursday, 16 June 2016

From: Revanth Reddy (revanth.kumar@indiavisioninstitute.org)

Subject: **Scientists developing cost-effective retinal scanner for early diagnosis of glaucoma, diabetic retinopathy**

OCT Chip is a hand-held, wireless and robust portable retinal scanner that will harness new photonics technology to enable early diagnosis of glaucoma and diabetic retinopathy. Funded by the Photonics PPP platform, a group of scientists in Europe headed by Professor Wolfgang Drexler, Professor at Medical University of Vienna, are working to develop this breakthrough, cost-effective scanner that will revolutionize the early diagnosis of retinal diseases that are leading causes of blindness worldwide. The OCT Chip will be a maintenance-free scanner the size of a 1 cent coin.

Diabetic Retinopathy is the leading cause of blindness, with 200 million cases world-wide. With an ageing population, higher life expectancies and rising levels of diabetes, the

number of cases of this disease is set to increase. Currently OCT (Optical Coherence Tomography) is the established method of diagnosis in retinal diseases, but the instrument is bulky, costs around €100, 000 per sophisticated unit and limited portability.

The long term potential for OCT Chip will work via Bluetooth, on a mobile phone or a tablet, enabling the improvement of healthcare in remote Third World areas. As a miniaturized imaging technique, it can be implied as a battery-operated capsule for gastrointestinal diagnosis in the future. The project head believes that the OCT Chip scanner can be made so user friendly that self-diagnosis will be possible. The team aims to release their first prototype by end of 2017 and plans for mass commercialization to begin around 2020.

For the complete article, please visit:

http://www.photonics21.org/pho_nl_backend/2016/05-2016/NL-juni.php?#artikel_3

Date: Saturday, 25 June 2016

From: Johnson Singh (johncrtr94@gmail.com)

Subject: **How diabetes affects contact lens wear**

Mass media and medical publications have been warning for years that the incidence of diabetes is rising rapidly. They predict a “health catastrophe” in which more than 10% of the U.S. population will be afflicted by this disease. The future looks even worse with statistics showing that the rate of pre-diabetes has been climbing even faster than predicted and that without significant lifestyle changes, most people with pre-diabetes will develop type 2 diabetes within 10 years.

Diabetes and dry eye

“There are distinct evidence-based reasons why we should be looking at the ocular surface,” said Milton M. Hom, OD, FAAO. According to Dr. Hom, studies have shown that half of patients with type 2 diabetes also have dry eye symptoms and that the higher the haemoglobin A1C (HBA1C) values, the higher the rate of dry eye syndrome.

The association may be linked to automatic neuropathy, which decreases corneal sensitivity and affects feedback mechanisms and lacrimal gland secretion. In addition, hyperglycaemia impairs inflammatory cell function and raises the risk of corneal infection. Patients with diabetes are also at risk of endothelial cell loss, impaired sensitivity, and recurrent corneal abrasions.

To better address the host of eye-related risks associated with diabetes, Dr. Hom divides his management of these patients into two categories addressed in separate visits: one for the standard diabetic exam and one for ocular surface problems. During the ocular surface exam, measurement of HBA1C is standard. These readings can offer a more accurate picture of the disease status than glucometer readings because they provide a snapshot of the amount of glucose in the blood over the past two to three months.

Currently, an A1C level of 6.5 percent or higher indicates diabetes. This is lower than the value used in the past, and it’s likely to be reduced again in a few years, according to Dr. Hom. The rationale for adjusting the numbers is early intervention and better treatment outcomes.

Contact lenses and diabetes

Patients who have diabetes and wear contact lenses are particularly challenging for optometrists. The susceptibility of diabetes patients to corneal erosions, occurring at multiple places on the cornea, must be a factor in recommending contact lenses and on-going patient management, Dr. Hom said.

Not every patient with diabetes is a good candidate for contact lenses, based on A1C levels and ocular surface health. But if contact lenses seem to be appropriate, the best option may be daily disposable contact lenses.

While there is no absolute upper limit of A1C levels that prohibits fitting for contact lenses, a value in the 7-8% range warrants caution, and a patient with an A1C level of 10% ordinarily would not be a good candidate.

For the complete article, please visit:

<http://optometrytimes.modernmedicine.com/optometrytimes/news/how-diabetes-affects-contact-lens-wear?page=0,1>

Date: Wednesday, 22 June 2016

From: Vishnupriyan (vishnudinakar96@gmail.com)

Subject: **Peek Potential**

A portable eye test tool has “real-world potential to transform global eye health,” a new study claims.

Researchers at the London School of Hygiene & Tropical Medicine, and Amref Health Africa in Kenya, reported a “clear positive” evaluation of the portable eye examination kit, Peek.

In the Nakuru Eye Disease Cohort Study, which included interviews with patients, healthcare providers and decision makers in Kenya, researchers explored Peek’s acceptability and usability, factors that could affect whether the system can be successfully adopted nationally and internationally.

Peek is a smartphone-based system developed as an affordable, user-friendly alternative for performing comprehensive eye exams anywhere in the world. It consists of a suite of apps, an adaptor for the phone’s camera, integrated systems to share the data with specialists and a training programme.

However, challenges were also identified by the study. These included the need for government support to deploy Peek, building capacity to train healthcare providers and mobilising community health volunteers. Ensuring data protection and access to low-cost smartphone technology also emerged as important themes.

Ophthalmologist and co-founder of the Peek Vision Foundation, Dr Andrew Bastawrous, said that there are multiple human factors that need to be understood because ultimately, the technology has no value when not appropriately used in the right hands, with the right support and right information being generated.

He added: “Therefore, it is encouraging to find that Peek is perceived to be valuable as a tool that would increase access to high quality eye care services in rural, hard-to-reach

areas. The technology has already demonstrated its accuracy, repeatability and consistency and we now know that Peek is an acceptable solution that supports patients' needs and can help strengthen the eye health system."

Discussing Peek's potential, director of research at Fight for Sight, Dr Dolores Conroy, told *Optometry Times*: "Mobile technology has great potential to transform eye healthcare delivery and it's important that we have this evaluation of people's views about Peek.

"The technology may be possible, but people have to be able to use it and to want to. Here we can see that they can and do. With the right commitment and backing there will be a real opportunity to overcome the current barriers to universal eye health."

For the complete article, please visit:

<http://optometrytimes.modernmedicine.com/optometrytimes/news/how-diabetes-affects-contact-lens-wear?page=0,1>

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