Optometry DistList
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Subject: **IVI Brings 'Blind Tennis' to Chennai**

Popular film star Kushboo Sundar and Nawabzada Mohammed Asif Ali, Dewan to the Prince of Arcot, today launched a blind tennis demo match for school children at 'St Louis Institute for the Deaf and Blind', Adyar, Chennai.

Twenty blind and visually impaired students played a demo match as part of the launch event from 2 to 3 pm at their school in the presence of Brother John Xavier, Headmaster & Correspondent and other attendees. The event was organised by India Vision Institute (IVI) in partnership with Global Community Sports (GCS), Australia.

"This is the first time ever that the sport of blind tennis has been played in India. Almost identical to standard tennis, blind tennis is played on a smaller court with a modified ball that makes a rattling sound when it hits the court. Another modification is that more than one bounce is allowed before returning a volley." said Vinod Daniel, CEO, IVI.

"An interesting feature of this sport is that both blind and sighted participants can play against each other", he added.

He also stated, "IVI is glad to bring these children this new experience, which is something taken for granted by those of us with sight. We hope that this will become a habitual activity for them that is enriching and beneficial in the long term. Thanks to Rick Shrowder for coaching the children and the Australia-India Council (AIC) for making this possible."

Nawabzada Mohammed Asif Ali said, "This is a noble initiative by IVI and Global Community Sports to empower blind and visually impaired children. I am happy that they have brought this initiative to India."

Rick Shrowder said, “A disability does not have to be restricting or isolating. This event is an excellent way to demonstrate this to both the normally sighted and visually impaired. I am thrilled to have coached the kids and look forward to blind tennis becoming a regular activity at this school and elsewhere in the country.” Originally from Adelaide, Australia Rick has been coaching young people in the UK since 2003 and has been involved in national and regional sports coaching, particularly Australian Rules Football.

Global Community Sports specialises in developing innovative ways of using sports and activities to enhance the life chances & life experiences of children, young adults & the wider community in the UK, India & Australia.

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Date: 30 November, 2016
From: Sony Singh (sony.singh@indiavisioninstitute.org)
Subject: **Imaging the Young and Restless**

An early glimpse of an infant’s retinal cells is now possible with the use of a brand-new handheld optical coherence tomography (OCT) system.

Scientists at Duke University in the US have developed a system that is “the size of a pack of cigarettes, weighs no more than a few slices of bread, and is capable of gathering detailed information about the retina’s cellular system.” The handheld device relies on a number of technological advances, including a smaller scanning mirror, the use of converging – rather than collimating – light and custom lenses, according to a paper published in the journal Nature Photonics.
The new monocular device, which is held by a clinician over a child’s eye, can measure the density of photoreceptors. It has already been tested out in infants – something not possible with the older, bulky systems that require a person to sit still and focus for an extended period of time.
The limitations of previous devices mean that the early development of the retina – and the impact of injury or disease on a young child’s photoreceptors – is not well understood, first author and PhD student, Dr Francesco LaRocca, highlighted.
He explained: “Because children have never been imaged with these systems before, there’s no gold standard that we can compare it to. The results do, however, match theories of how cones migrate as the eye matures.
“The tests also showed different microscopic pathological structures that are not normally possible to see with current low-resolution, clinical-grade handheld systems.” The research team, funded by the National Institutes of Health and the Hartwell Foundation, is currently refining the prototype.

For the complete article, please visit: https://www.aop.org.uk/ot/science-and-vision/technology/2016/08/03/imaging-the-young-and-the-restless

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Date: 23 December, 2016
From: Sneha Krishnan (iyers3012@gmail.com)
Subject: **iPad Beats iPatch**

Children's insatiable love of tablet games has been put to great use by US researchers in treating amblyopia.
The action-adventure iPad game requires children to wear special spectacles that regulate the elements of the game seen by each eye. High-contrast elements are seen by the amblyopic eye while low-contrast elements are seen by the other eye, and high-contrast background elements are shown to both eyes.
To successfully play the game, the child must see all these elements. In an early-stage study of 28 children, half were given the iPad game and asked to play for one hour a day, five days a week for a fortnight.
The remaining 14 children were offered the standard patching treatment, in the study published in the journal JAMA Ophthalmology.
After two weeks, the children who had played the game were found to have the best-corrected visual acuity improvements – double that of the children in the patching group. This is despite the children spending just 10 hours playing the game in comparison to the children who wore the patch for 28 hours over the same period, Retina Foundation of the Southwest researcher, Dr Krista Kelly highlighted.

She added: "We show that, in just two weeks, visual acuity gain with binocular treatment was half that found with six months of patching, suggesting that binocular treatment may yield faster gains than patching. Whether long-term binocular treatment is as effective in remediating amblyopia as patching remains to be investigated." Dr Kelly explained that it is hoped that binocular treatments like the game will ultimately have better success than patching at restoring visual acuity and teaching the eyes to work together.

"Unfortunately we were only able to provide one game, and most children had finished its 42 levels within the four-week study treatment period. Providing a variety of games could help with long-term treatment," she noted.

She explained that the development of more games were also critical to evaluating the therapy's potential. "It is also important to investigate how contrast changes should be manipulated to achieve maximum acuity improvements. Lastly, options for younger children who cannot play the games must be explored, such as animated movies or television shows. These methods are currently being investigated," Dr Kelly outlined. While the option was not yet available as a treatment, interested practitioners and patients may want to keep the potential therapy in mind.
"It is our hope that binocular interventions that rebalance contrast will eventually become available as an additional option for amblyopia treatment," Dr Kelly emphasised.

For the complete article, please visit: https://www.aop.org.uk/ot/science-and-vision/technology/2016/11/10/ipad-beats-ipatch

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Date: 1 December, 2016
From: Aarthi Jude (aarthijude@gmail.com)
Subject: **Packing Eye Medication**

Canadian scientists have created a 'better' eye drop that hides the medication in the tear film so it is not washed away.

The drug is put into microscopic packets in order to lodge in the base of the tear film, which enables the technique to overcome the common problem with eye drops – that 95% of the medication is washed away by the eye's defences before it has a chance to take effect.
Speaking about the issue, McMaster University chemist, Professor Heather Sheardown, emphasised that conventional drops are frustratingly inefficient.

She added: "It's a lousy delivery system. If you can deliver drops to the front of the eye at lower concentrations that work over a longer period, it could be huge."

A study, published in the journal Biomacromolecules, looking at the molecular packets shows such results. These packets dissolve slowly, and could enable patients with dry eye and glaucoma to switch from a daily drop to a weekly drop, Professor Sheardown said.
The research team, funded by the Natural Sciences and Engineering Research Council and The Boris Family Foundation, has been conducting trials evaluating the safety and efficiency of the drops. This work should be completed shortly.

Professor Sheardown said that she hoped the new technique would be utilised in eye drops and available on the market "in the near future."

For the complete article, please visit: https://www.aop.org.uk/ot/science-and-vision/technology/2016/09/07/packaging-eye-medication
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Date: 10 November, 2016
From: Daniel Prakash (danielethakoti@gmail.com)
Subject: **The Next-Generation Smart Lens**

Google's early designs for a smart intraocular lens device have been filed with the US patent office.
The Alphabet-owned company's patent details the way the device, which is unlikely at this stage to have a prototype, might one day look.
If it becomes a reality, it would be fitted into the lens capsule of the eye, after the person's natural lens is removed. The smart intraocular lens will adjust its focus in response to the accommodation forces the ciliary muscles apply on the lens capsule, either directly or indirectly, the patent document said. The battery-powered device may also include additional lenses to correct for myopia, hyperopia and astigmatism, the filed paperwork noted.

Transparent nanowires or alternate conductive materials may be used as circuitry in the gadget, without the wearer's vision being affected. Other possible features that may be included are a variety of sensors, a data storage unit and an antenna to receive or transmit signals using an interface device. The patent imagines that the intraocular lens, through a connected smart phone or even a clothing-integrated device, could send information from the smart lens to the optometrist's office, allowing better diagnosis and monitoring of the patient's condition.

The design also noted that the battery in the intraocular device could be powered up overnight while a person is sleeping, using wireless recharging from a device near or in the bed or pillow. First, the natural lens will be cut from the eye, or broken up using ultrasonic vibrations, with the pieces suctioned out.

A specialised fluid will be inserted into the lens capsule during this process, followed by either an intact device or the components of the device to be assembled after implantation, the patent outlined.

When completely assembled and correctly positioned, the fluid will be solidified. The smart lens will then sit within the capsule surrounded by a solid polymeric material, which may be designed to stop UV light from entering and damaging the eye, the documents noted.

For the complete article, please visit: https://www.aop.org.uk/ot/science-and-vision/technology/2016/05/04/the-next-generation-smart-lens

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Date: 28 November, 2016
From: Amarnath Venkat (amaropt@gmail.com)
Subject: **Diabetic Retinopathy Deep Learning**

An algorithm by Google has taught itself how to identify diabetic retinopathy and macular oedema with high accuracy using fundus photographs. The software's analysis of a photograph now corresponds with the diagnosis of ophthalmologists more than 90% of the time.

Rather than having experts tell the computer program how to detect suspicious lesions, it is given a large data set of labelled fundus photographs, in a technique known as "deep learning."

Using 128,175 anonymous retinal images, the algorithm determined the criteria it uses to determine a healthy retina from one showing signs of disease. The algorithm's capability was then put to the test analysing two sets of retinal images, one of 9963 images from 4997 patients and the other with 1748 images from 874 patients.

Based on the diagnosis of multiple ophthalmologists, the algorithm had a false negative rate of between 2.5–4% and a false positive rate of 6–7% for the sets of images. The authors of the JAMA journal paper emphasised the accuracy of the algorithm.
The researchers wrote that: "[An] automated system for the detection of diabetic retinopathy offers several advantages, including consistency of interpretation – because a machine will make the same prediction on a specific image every time – high sensitivity and specificity, and near-instantaneous reporting of results."
Moorfields Eye Hospital is also participating in Google's wider automated diagnosis work, for ocular conditions such as age-related macular degeneration.

For the complete article, please visit: https://www.aop.org.uk/ot/science-and-vision/technology/2016/11/30/dr-deep-learning
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Date: 25 November, 2016
From: Deepika Reddy (deepikakommanapalli@gmail.com)
Subject: **5 Ways to Protect Kids' Eyes**

Children love tablets and smartphones, but it's contributing to a spike in short-sightedness. Tablets and smartphones have become an essential kid-wrangling item for many car trips, restaurants, waiting rooms, you name it. But there's a catch: the more kids watch things up close on screens, the more they put their eyes in danger.

Short-sightedness (or myopia) is rising at an alarming rate in Australia — a recent study has shown that it now affects 19 per cent of 12-year-olds, which is almost double the amount in 2005.

"More than half of myopia cases are diagnosed between the ages of 6 and 15, with a second wave between 18 and 22. It's estimated that 31 per cent of 17-year-olds also suffer from the condition," Optometry Australia president Kate Gifford says

Genetics play a role in a child's risk but so does their visual environment. When a child is looking at something close to them, the muscles around and inside the eye adapt.

A recent University of Sydney study of 2000 primary and secondary students found rates of myopia to be much lower in children of all ages who spent at least 90 minutes a day outdoors, even if they did a lot of close work (such as homework book reading) or screen time.

5 Ways to Protect Kids' Eyes

Limit Screens: Zero time for under-2s, one hour for 2- to-5-year-olds and two hours for 5-to-18-year-olds. Take a break every 20 minutes.
Eat Colourful Vegetables: Antioxidants (particularly lutein from leafy greens) help the retina stay healthy, Optometry Australia President Kate Gifford says.

Regular Checks: Have your kids' eyes checked by an optometrist at age 3, and every two years after that, Gifford says.
90 Minutes Daily Outside Play: This is essential for normal eye growth and to prevent strain.
Sunglasses: UV rays damage the eyes, so choose sunnies with 100 per cent UV protection. Eyes still get the benefits from sunlight, Gifford says.

For the complete article, please visit:
http://www.couriermail.com.au/lifestyle/health/body-soul-daily/5-ways-to-protect-your-kids-eyes/news-story/a92d7ab322ba41199a728bc62d525892
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