

Optometry DisList

Instance 2015: 10

Saturday, 20 June 2015

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Today's Messages:

Date: Thursday, 11 June 2015

From: Shivram Ravi (ravishivram@gmail.com)

Subject: Growing Eyes from Stem Cells

A RIKEN team has succeeded in developing a culture method that allows human embryonic stem cells to be efficiently and spontaneously grown into the many cell types found in the human retina. The achievement brings scientists a step closer to growing the most complex component of the eye—the eye's neural tissue—and could enable doctors to repair damaged eyes with lab-grown retinal tissue.

The RIKEN team, collaborating with Sumitomo Chemical Company, refined and improved this culture technique through precisely timed treatment with a regulatory protein called BMP4. This improved method transforms human embryonic stem cells into retinal progenitors without the addition of extracellular matrix products required previously to promote retinal differentiation. This allows for a more controlled process that could be suitable for future clinical applications.

“Our results are consistent with the current view that the retinal pigment epithelium and neural retina are capable of ‘fate transition’, says Mototsugu Eiraku. “By examining retinal formation in culture, we hope to reveal the mechanisms involved in human retinal development.” The methods developed by Eiraku and his colleagues could one day be used to culture tissue that can be transplanted into a human retina damaged by conditions such as macular degeneration and retinitis pigmentosa, which lead to blindness. “The protocol developed here allows us to generate retinal tissue that closely resembles the biological retina with high efficiency and stability,” notes lead author Atsushi Kuwahara. “It is a step closer to realizing regenerative medicine for retinal disorders.”

Article Source: <http://www.riken.jp/en/research/rikenresearch/highlights/8012/>

Date: Friday, 12 June 2015

From: Eyecare Jobs (www.eyecarejobs.in)

Subject: Optometrist (Job Opening)

OPTOMETRIST required at an optical outlet in Bangalore. Store located in Jayanagar. The store timings are from 10-00 am to 8-30 pm and Sunday is a holiday. The responsibilities include refraction, contact lenses fitting, dispensing and attending spectacle/ sunglass sales as well. Good remuneration as per industry standard.

For further details, please visit <http://www.eyecarejobs.in/index.php/jobs/advert/61-optometrist>

Date: Wednesday 17 June 2015

From: Tejah Balantrapu (tejahb@iapb.org)

Subject: Report on Tracking Universal Health Coverage Adopts Cataract Surgical Coverage as Key Indicator

Influential new report co-authored by the WHO and the World Bank identifies a small set of indicators to track and monitor Universal Health Coverage. IAPB's recommendation – Cataract Surgical Coverage – among the thirteen health intervention indicators listed.

Cataract Surgical Coverage (CSC) is a reliable indicator for availability of health services in many countries, especially to the elderly. The International Agency for the Prevention of Blindness (IAPB) strongly recommends CSC data as one viable indicator for health service coverage, as it is supported by data over time and geographies.

IAPB welcomes a new, seminal report that the World Bank and World Health Organization have just published – "[Tracking Universal Health Coverage - the First Global monitoring report](#)" -- to measure health service coverage and financial protection to assess countries' progress towards universal health coverage (UHC). The report promotes thirteen indicators for monitoring health intervention coverage, including cataract surgical coverage.

In [a press release](#) accompanying the launch of the report, Dr. Ties Boerma, Director of the Department of Health Statistics and Information Systems, World Health Organization said, "As more countries make commitments to universal health coverage, one of the major challenges they face is how to track progress. The report shows that it is possible to quantify universal health coverage and track progress towards its key goals, both in terms of health services and financial protection coverage."

"I am delighted that IAPB's efforts to promote the importance of cataract surgery have been recognised by the inclusion of CSC as a viable indicator for monitoring UHC in this extremely influential and important report", said Peter Ackland, CEO, IAPB. "I believe including CSC would also strengthen the indicator framework being developed to monitor target 3.8 of the Sustainable Development Goals which focuses upon UHC."

This first-of-its-kind report looks at global access to essential health services and promotes thirteen indicators for monitoring health intervention coverage and outlines a further six possible indicators related to financial protection measurement to track catastrophic and impoverishing health expenditure. The majority of the proposed indicators build on existing monitoring of the Millennium Development Goals. Five new indicators, including CSC, relate to the need to monitor the rising tide of Non-Communicable Diseases – which account for some 55% of the global disease burden.

It is also encouraging to note that amongst the thirteen indicators there is also one that relates to Neglected Tropical Diseases – preventive chemotherapy coverage, which includes the prevention of two blinding diseases - onchocerciasis and trachoma both of which could be eliminated over the lifetime of the SDGs.

IAPB congratulates the teams at WHO and the World Bank for producing an authoritative – and accessible - report. IAPB also thanks all the individuals and organisations - especially Hans Limburg, Specialist, and Community Eye Health - whose support and advice has helped us in this process.

For further details please contact, Tejah Balantrapu (tejahb@iapb.org)

Date: Wednesday, 17 July 2015

From: Sandhya Shekar (sandhya.shekar@indiavisioninstitute.org)

Subject: Beno Zephine becomes first 100% blind IFS officer

CHENNAI: The 25-year-old from Chennai was informed by the external affairs ministry on Friday that she has been inducted into the Indian Foreign Service, the first 100 per cent visually-challenged person to gain entry into the 69-year-old service.

"I am really thankful to Prime Minister Narendra Modi for taking this big decision. I am told the IFS was not identified for the blind with certain exceptions made for candidates with low vision," Beno, a probationary officer with the State Bank of India, told TOI.

Former diplomats have hailed the decision to allow 100 per cent visually challenged people into the service. "This is nothing short of a revolutionary decision as many promising people lost out for lacking 20:20 vision. Usually, candidates wearing spectacles (and thereby have perfect vision) are accepted and I know of at least one case last year where a person who had lost an eye in an accident was admitted to the income tax or one of the related revenue services," former diplomat TP Sreenivasan said from Thiruvananthapuram.

"I am grateful that in order to give me the assignment, the central government has modified some parameters," Beno said. She had cleared the civil services exam last year but her posting was pending.

Beno transcended the dependence on Braille books by switching to Job Access With Speech (JAWS), a software that allows visually challenged to read from a computer screen, to scan Tamil and English books. The software can also be adapted to a smart phone. "Parents, especially mother, read a lot of books and newspapers to me," she said.

For full article, please visit <http://timesofindia.indiatimes.com/india/Beno-Zephine-becomes-first-100-blind-officer-in-IFS/articleshow/47669161.cms>

Date: Thursday, 18 June 2015

From: Hima Bindu (bindureddy811@gmail.com)

Subject: An experimental model of vitreous motion induced by eye rotations

Abstract

Background: During eye rotations the vitreous humour moves with respect to the eye globe. This relative motion has been suggested to possibly have an important role in inducing degradation of the gel structure, which might lead to vitreous liquefaction and/or posterior vitreous detachment.

Aim: of the present work is to study the characteristics of vitreous motion induced by eye rotations.

Methods: We use an experimental setup, consisting of a Perspex model of the vitreous chamber that, for simplicity, is taken to have a spherical shape. The model is filled with an artificial vitreous humour, prepared as a solution of agar powder and hyaluronic acid sodium salt in deionised water, which has viscoelastic mechanical properties similar to those of the real vitreous. The model rotates about an axis passing through the centre of the sphere and velocity measurements are taken on the equatorial plane orthogonal to the axis of rotation, using an optical technique.

Results: The results show that fluid viscoelasticity has a strong influence on flow characteristics. In particular, at certain frequencies of oscillation of the eye model, fluid motion can be resonantly excited. This means that fluid velocity within the domain can be significantly larger than that of the wall.

Conclusions: The frequencies for which resonant excitation occurs are within the range of possible eye rotations frequencies. Therefore, the present results suggest that resonant excitation of vitreous motion is likely to occur in practice. This, in turn, implies that eye rotations produce large stresses on the retina and within the vitreous that may contribute to the disruption of the vitreous gel structure. The present results also have implications for the choice of the ideal properties for vitreous substitute fluids.

For full article, please visit <http://www.eandv.org/content/pdf/s40662-015-0020-8.pdf>

Date: Thursday, 18 June 2015

From: Mounika Deepa (mounikav30@gmail.com)

Subject: Laser treatment claims to turn brown eyes blue

Strōma Medical Corporation based out of Laguna Beach, California, claims to have invented a new laser eye surgery technique that eliminates the pigment from the patient's eye.

Here's how it works. In darker, warm eye colours -- browns and black -- the upper layer of the iris (the stroma) contains high concentrations of melanin, the natural pigment that effects skin colour, hair colour and eye colour.

Strōma's technique uses a laser to disrupt the melanin in the stroma of the iris. The patient watches a small animation about a foot from their face, their head stabilised, while the laser does its work, a process that takes, in all, around 30 seconds per eye. This causes the body to begin its own natural process of eliminating the pigment from the eye over several weeks following the treatment.

"Some physicians on blogs and elsewhere have suggested that the Strōma procedure could cause pigmentary glaucoma," the team said. "We were concerned about this issue right from the start, so it was the first issue we tested and measured in our initial pre-clinical and clinical studies. Thus far, pigmentary glaucoma has not proved to be a problem in our pre-clinical or clinical studies."

What is less clear is whether the laser itself is safe. The Q-Switched Nd:YAG infrared laser is often used for treating skin pigmentation; but Q-switched pulses are relatively long, which means there may be enough time for heat transfer into the iris, which could in turn cause damage. Another thing to take into account is that blue eyes have a higher prevalence of age-related macular degeneration, due to the lack of protective melanin -- so if you have darker eyes, you have a very good reason to hang onto them.

For full article, please visit <http://www.cnet.com/news/laser-treatment-claims-to-turn-brown-eyes-blue/>

Date: Thursday 18, June 2015

From: Jissa James (jissa.james@indiavisioninstitute.org)

Subject: Cats and cockroaches may increase the risk of glaucoma

Being exposed to particular animals such as cats and cockroaches may increase a person's risk of developing glaucoma, according to US researchers. However, contact with dogs could guard against the eye disease, the same study found.

Published in the [*American Journal of Ophthalmology*](#), researchers at the University of California reported that people diagnosed with glaucoma had ‘significantly’ higher levels of immunoglobulin E (IgE), a type of allergic antibody produced by the body in response to cats and cockroaches.

Researchers believe that their findings raise the possibility that the immune system plays a role in glaucoma. During the study researchers analysed data from 1,678 people, aged between 50–60 years, in a larger study.

Participants were allergy tested for dust mites, cats, dogs, cockroaches and rodents. While 5.1% of participants were diagnosed with glaucoma, of those, 14.3% had significantly elevated levels of IgE to cats, and 19.1% to cockroaches. This was compared to just 10% of the participants without glaucoma with elevated IgE for either cats or cockroaches.

Furthermore, in people with glaucoma, levels of IgE to dog allergens were elevated in 6% of glaucoma patients, but 9.2% of those without glaucoma.

The study concluded that allergens from cats and cockroaches may have biochemical or physical properties which trigger antibodies that target the optic nerve, adding that dog allergens appear to behave slightly differently, “possibly because dogs spend more time outdoors.”

However, the study was not able to assess different subtypes of glaucoma and their relationship with IgE, and therefore cross-reactions to other allergens may have affected certain antibody levels, the researchers added.

Article Source: <http://www.optometry.co.uk/news-and-features/news/?article=7307>

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