

A round-up of the eye related hot topics that have been trending on social media over the last few weeks.

#probyeotic #eyeballbugs #microbiome

The human microbiome usually conjures up images of the gastrointestinal tract and yoghurt containing good bacteria. However, research suggests that the ocular mucosa is home to a unique microbe collection, with important immunological functional properties [1]. This finding raises concerns around the risk to the ocular microbiome with regular prescription and use of broad spectrum antibiotics [1].

Studies found that resident bacteria on the ocular surface harbour antimicrobial properties and are capable of killing harmful microbes contained in tears [1]. Using this knowledge, microbes in the eye microbiome could be genetically engineered to supply therapeutic chemicals to treat conditions such as dry eye disease [1]. This 'prob-eye-otic' therapy would specifically target disease-causing microbes, and spare the use of broad spectrum antibiotics, resulting in preservation of the good bacteria contained in the ocular surface [1]. Read the full article on the *Immunity* journal website [2].

#designerliner #lawsuit #gucci #saksfifthavenue

A surprise birthday trip to New York took an ugly turn after a Canadian shopper claims to have been left "disfigured" when a make-up artist working for Gucci forcefully applied eyeliner to her eye without prior warning or consent when shopping in Saks Fifth Avenue [3]. It seems the eyeliner was not cleaned before it was applied to the outside and inside of the lids causing pain, watering and blurring of vision. She sought medical advice due to persistent symptoms of blurred vision and ocular pain, and reports also claim that the misapplied liner caused permanent loss of lashes [3,4].

She has filed a lawsuit against Gucci and Saks Fifth Avenue in New York making substantial claims of US\$1 million for income loss, US\$500,000 for punitive damages, US\$250,000 for the loss of her eyelashes, and US\$500,000 for ongoing physical and psychological pain and suffering [3]. This is a stark wake-up call for beauty vendors, though one could argue that a review of the consent and hygiene procedures in beauty halls is overdue!

#airpollution #eyedisease #AMD

A recent population-based study in Taiwan has added another concerning dimension to the air pollution problem; eye disease and vision loss [5]. Intriguingly, they found a significant increase in risk of age-related macular degeneration (AMD) following exposure to high levels of traffic pollutants NO₂ and CO [5]. Development of AMD has previously been linked to several risk factors including oxidative stress and inflammation. This study suggests that 'reactive

nitrogen species' may also contribute to the disease process [6]. Although the study did not include information for other important AMD risk factors, it delivers important new findings [5,6].

However, don't purchase fancy new eye protection just yet. The pollutants are thought to cause damage via inhalation [5]. After breathing in the polluted air, NO₂ hydrolyses to nitrous and nitric acid causing inflammation resulting from lipid peroxidation and oxidative stress [6]. Researchers suggest sticking to avoidance of heavily trafficked areas during rush hour periods [5]. Read the full article in the *Journal of Investigative Medicine* [6].

#Chernobyl #eyehealth #freeeyetests

The recent airing of the gripping *Chernobyl* miniseries on Sky has brought the catastrophic disaster of 1986 back into the public eye. A number of opticians across the UK have shown support for visiting children from Ukraine and Belarus [7,8], where effects of the disaster are still felt [9]. During the visits to Lancaster and Sheffield, supported by charities Friends of Chernobyl's Children and Chernobyl Children's Lifeline respectively, free eye tests were performed by opticians with free provision of glasses when required [9,10]. Simple eye checks are often inaccessible to those affected by the Chernobyl disaster. These children also receive other recuperative healthcare and English lessons during visits where they are put up with host families [9,10].

#brainimplant #restorevision #VCP

A novel visual cortical prosthesis (VCP) system developed by Orion, Second Sight Medical Products offers hope for restoring vision for acquired blindness. The system was released for an Early Feasibility Study with promising results in the first year, as partial vision was restored in six patients with acquired blindness [11]. The VCP system is designed to pass visual information from a minute camera directly to the visual cortex, bypassing diseased ocular anatomy [12]. The real-time camera takes images, and they are processed and converted into stimulation patterns. These are transmitted wirelessly to electrodes implanted on the visual cortex for light pattern perception [12].

While we are still far from complete restoration of vision in those with acquired blindness, the results of this early study are encouraging. Note the report of five adverse events including one seizure, raising some concerns about translation into real-world use [12]. More information is available on the Second Sight website [13].

#loveisland #thecampbell #blind

Love Island 2017 contestant Theo Campbell took

to Instagram to reveal that his eye had "split in half" after being hit by a champagne cork whilst on holiday in Ibiza [14]. Campbell underwent two separate surgical procedures, however, vision could not be restored [15]. Campbell shared a selfie of himself wearing an eyepatch with girlfriend Kaz Crossley, also a former *Love Island* contestant, explaining the events, and said that he was "looking at the bright side of things" and seeking a supplier of "cool eye patches" [16].

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