

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

#QueenElizabeth #cataract

It is well and truly summer! Queen Elizabeth was spotted in her sunnies during recent events, not just as a fashion accessory, or to shield the hot British summer sun. As it transpires, she underwent successful cataract surgery. Whoever performed her procedure has nerves of steel [1].

#myopia #schooling #intelligence #education

Wearing glasses may mean that you really are smarter. The global prevalence of myopia is increasing rapidly. An estimated 30-50% of adults in the United States and Europe and 80-90% of school leavers in high income East and South East Asian countries are reported to be myopic [2]. Myopic maculopathy is now one of the most common causes of untreatable blindness in high income East and South East Asian countries [2]. Many studies have demonstrated a correlation between education and myopia. However, this study by Mountjoy E, et al. suggests a causal link between education and myopia [2].

The researchers used a Mendelian randomisation approach and found that every additional year of schooling resulted in -0.27 dioptres of myopia per year. Mendelian randomisation allowed for examination of this relationship with minimal confounding because, based on Mendel's second law of independent assortment, genetic variants are inherited randomly at conception from parents. By knowing which genetic variants were associated with educational attainment and myopia [3,4], the researchers could assess the direction of causality. They found that those with genetic variants linked to higher levels of education were more likely to be myopic, but the reverse relationship was not found. This suggests that myopia itself does not influence a person's education level [5]. Their research has implications for educational practices, as children would inadvertently be exposed to risking visual disability in adulthood by developing myopia secondary to societal and economic pressures to pursue higher education [2].

#mascara #25years

In other #firstworldproblems, a woman nearly went blind because she failed to remove her mascara for 25 years. This peculiar practise in lid hygiene resulted in 'black lumps' (darkly pigmented subconjunctival concretions) embedded under her eyelids [6-7]. These concretions eroded through the conjunctiva and caused corneal injury and scarring. Histology showed "chronic inflammatory infiltrate with pigmented macrophages, in keeping with foreign body deposition" [8]. Essentially, particles of mascara had accumulated over the years to form the concretions.

#eyelash #extensions #demodex

Here's another lassy public service

announcement coming your way. Orlando Ophthalmologist, Dr Parbhu, recently treated a young woman with lid oedema and ocular irritation after getting eyelash extensions [8]. A video from Channel 9 in the USA documenting her ordeal showed demodex mites wiggling around this patient's eyelash follicles. Beauty is not for the faint-hearted it seems. Dr Parbhu explained that demodex infestation was more likely in eyelash extensions that are individually glued on, or in those who tend not to remove their eye makeup. The infection may also be facilitated in spreading from person to person if salons are not meticulous in their hygiene practise. I might not give up my mascara just yet, however, I will be sure to remove every last speck before going to sleep.

#ocularmelanoma #North Carolina #Alabama

Let's move on to a more sombre topic. Ocular melanoma has been identified in over 50 people around two specific locations: Huntersville, North Carolina and Auburn, Alabama. The normal incidence of ocular melanoma is around six in every one million individuals [9,10]. A year-long study of environmental factors in the Huntersville cases was inconclusive, but now it seems that the same disease has cropped up two states away in Alabama [11]. A support group on Facebook for those who went to Auburn University and are affected by the disease showed that at least 38 of these people had attended Auburn University between 1983-2001 [12]. Even though officials say it is premature to conclude there is a cancer cluster here, it seems rather coincidental that three of these patients are friends who met at Auburn University, with two of them in the same or neighbouring sororities and with the same degree (education) [9,10].

#blind #NHS delays

Nearer to home, ophthalmologists have warned that hundreds of patients are going blind each year due to health service initiated delays in starting treatment for age-related macular degeneration [13-15]. This study was done through the British Ophthalmological Surveillance Unit. The most common cause of delay was a follow-up appointment which occurred beyond the clinically recommended time [15]. The majority of patients had chronic conditions requiring long-term follow-up, which the authors suggest indicates a discordance between the healthcare capacity and patient needs [15]. Indeed, England saw a 10% rise in ophthalmology appointments in the last year (2016/2017) [14].

#3Dprintedcorneas

To end on a hopeful note, Newcastle University researchers have 3D printed the first human corneas [16,17]. This was a proof-of-concept study. It showed that human corneal stromal

cells, which were isolated from healthy human cadavers, were mixed with alginate and collagen to produce a printable solution, their so-called 'bio-ink'. This technique does not completely eliminate the need for corneal donors, but will help maximise the use of available tissue.

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- (All links last accessed July 2018)

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