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

#blindpensioner #teachescooking #cookbook

Simon Mahoney lost his eyesight to uveitic glaucoma. His wife was his main carer and did most of the cooking. When she passed away during lockdown, Mahoney, with the help of his cleaner and friend Denise Ball, reorganised his kitchen and learned to cook. He penned a cookbook entitled *First Catch Your Rabbit! Or Cooking Without Fear.* Part memoir, part life advice, and part cookbook, Mr Mahoney details "surviving in the kitchen when you cannot see". Differing from a conventional cookbook, the recipes detail the process of kitchen organisation, setup and execution for each dish. Each recipe contains an objective such as "learning to manage hot water and master organisation skills" for the user to develop confidence to apply to future recipes. Recipes progress in complexity from how to make a cup of tea to a cooking a full roast chicken dinner. Sprinkled throughout are words of encouragement such as "Do not rush, think logically, and stay calm and focused" – wise words bearing application beyond a roast dinner [1,2].

#conjunctivalpcr #SARS-CoV-2

In a study of 108 participants from Lombardy, researchers found that conjunctival eye swabs result in a concordance of 63.0% (95% CI, 41.0%-81.0%) between positive conjunctival and nasopharyngeal swabs. Furthermore, conjunctival swabs detected SARS-CoV-2 in 10/17 patients with negative nasopharyngeal swabs. The conjunctival swabs were performed within two days of the nasopharyngeal swabs. The infectivity of the material on the conjunctival swabs could not be determined, but the researchers concluded that conjunctival polymerase chain reaction (PCR) testing may provide supplemental diagnostic information. As an ENT trainee, this conjunctival swabbing could be useful in patients with hereditary haemorrhagic telangiectasia, as nasopharyngeal swabbing may instigate a bleeding event [3].

#cataractsurgery #alcoholconsumption

British researchers found that a low-to-moderate alcohol consumption, especially red wine, is associated with a lower risk of undergoing cataract surgery. They rightly stress that correlation does not equal causation. This was a longitudinal observational study including 469,387 participants from the UK Biobank cohort and 23,162 participants from the European Prospective Investigation of Cancer (EPIC)-Norfolk cohort. Cataract surgery was used as a surrogate for visually significant cataract. Compared to non-drinkers, those with a low-to-moderate alcohol intake were approximately 10% less likely to require cataract surgery (hazard ratios 0.89 (95% CI 0.85-0.93) for UK Biobank and 0.90 (95% CI 0.84-0.97) for EPIC-Norfolk). The effect was most pronounced for red wine, where the risk of incident cataract surgery was 23% less in the EPIC-Norfolk cohort and 14% less in the UK Biobank cohort. The researchers postulate their findings may be related to both the antioxidant effects of polyphenols found in red wine, and to the association of low-to-moderate alcohol intake with lower levels of low-density lipoprotein cholesterols [4].

Heavy alcohol consumption is linked to a number of adverse health outcomes, including the acceleration of cataract development, fatty alcoholic liver disease, and various types of cancers. Furthermore, an association does not equate causation, meaning that this study *cannot* conclude that alcohol consumption is protective against developing visually significant cataract. The current guidelines for safe alcohol intake in the UK are up to 14 units per week for both men and women [5].

#mantisshrimpeyes #opticsensor

Mantis shrimp eyes inspired researchers at North Carolina State University to create a new optical sensor. Mantis shrimp eyes contain 12-16 photorecdeptors, allowing detection of visible, UV and polarised light, whereas human eyes only have three colour photoreceptors (red, green, blue). In the mantis shrimp eye, clusters of photoreceptors (ommantidia) are arranged in rows, each detecting specific wavelengths or polarised light. The new sensor features vertically stacked spectral and polarisation elements in a single optical axis, like the ommantidia rows, to allow detection of spectral and polarised light simultaneously. Although still proof-of-concept, this new sensor could have applications in improved scientific imaging and is small enough for smartphones [6,7]. Your Instagram selfies may get hyper-real in the near future!

#worms #avoidblue

Researchers at MIT discovered that a roundworm, *Caenorhabditis elegans*, which lacks eyes and photosensitive cells, genes or proteins, actively avoids the colour blue. This aversion is related to the blue-coloured toxin produced by *Pseudomonas aeruginosa*, which is not a dinner delicacy for the roundworm, unlike other bacteria. Firstly, they identified that the worms were much slower in fleeing from *P. aeruginosa* in dark conditions, suggesting it was the colour triggering the behaviour, since colour depends on the wavelength of visible light that is emitted from an item. They then mutated a strain of *P. aeruginosa* such that a beige toxin was produced. In response, the worms did not scurry away any faster. Then, they put blue pigment (pyocyanin) onto *Escherichia coli*, a common food source for these worms, and instead of feasting, the worms fled. The exact mechanism by which these worms detect the colour blue is yet to be elucidated, though the researchers identified two potential genes, jkk-1 and lec-3, that may be responsible [8,9].

Human behaviour is also affected by colour. Professor Alexander G Schlauss claimed that a bright bubble-gum pink would reduce aggressive behaviour. Despite subsequent studies showing mixed results, it was used in correctional facilities, and used by American football teams in painting their competitors' locker rooms to give them a competitive advantage [10]. Kendall Jenner has also claimed the shade reduces her appetite and thus decorated a wall in her house with this shade [11]. This year's Pantone Colour(s) of the Year are Illuminating Yellow and Ultimate Grey – chosen to represent solidity and dependability (Ultimate Grey), energy and hope (Illuminating Yellow) [12] – things we would agree we all need as we hopefully emerge from the worst of the pandemic.

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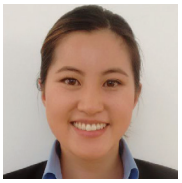

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