



Specialty Spotlight: Ophthalmology

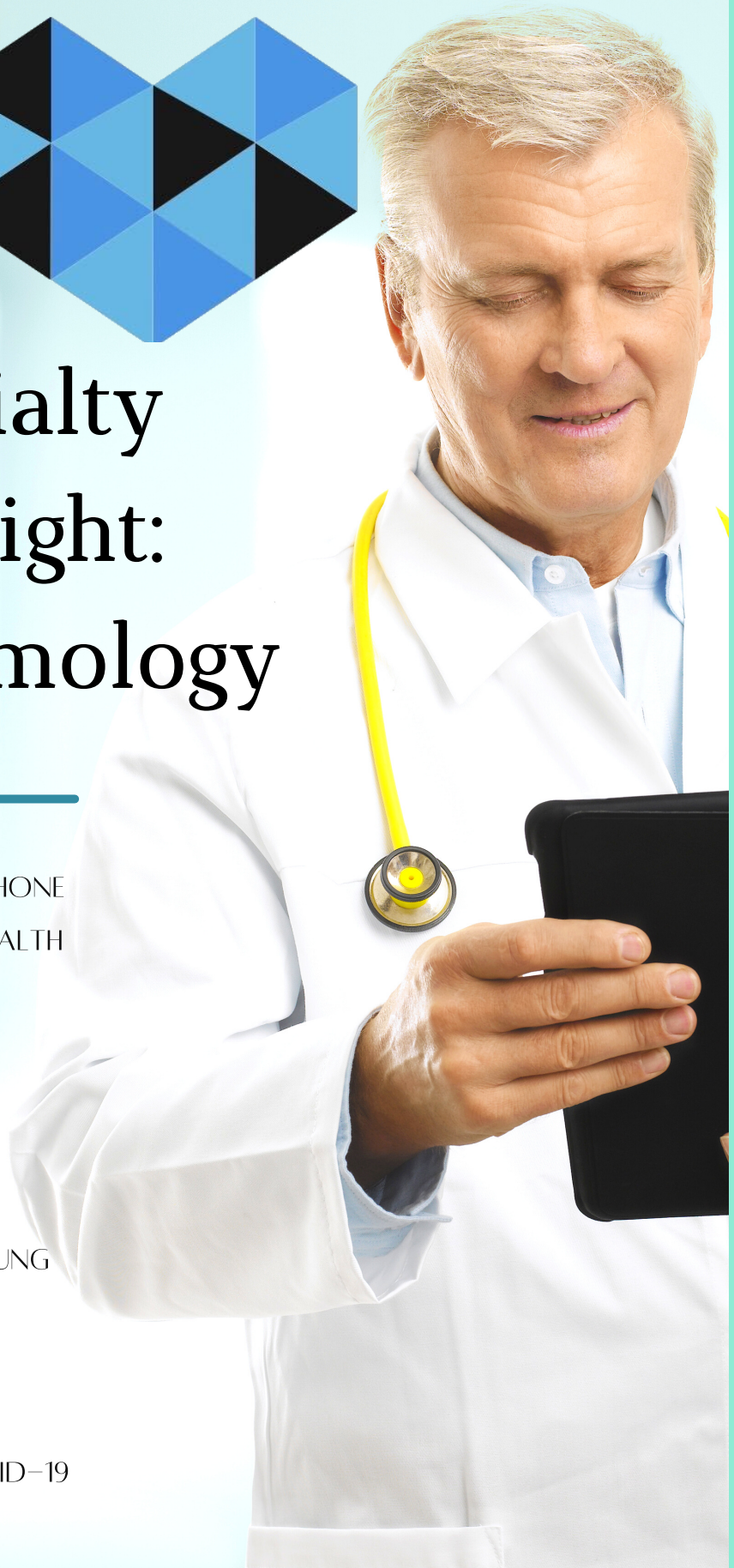
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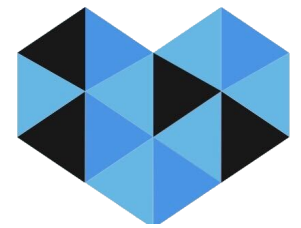
PHONE FOMO: HOW OUR PHONE
USE RELATES TO MENTAL HEALTH

THE ASTHMA EPIDEMIC AND
COVID-19

SOCIODEMOGRAPHIC
DIFFERENCES AMONGST YOUNG
ADULTS: TOBACCO AND
CANNABIS MARKETING

FETAL SEX DETERMINES COVID-19
IMMUNE RESPONSE





A NOTE FROM OUR NEWSLETTER DIRECTOR:

Dear medical newsletter readers,

On behalf of The Premed Scene, I would like to thank you all for taking some time off of your busy day to read this month's novel news in the field of science.

We're already in the middle of fall (can you believe it??!) and "spooky season" is fresh on our minds. All I'm going to say is this: This month's newsletter will most *absoludefinitely* (yes, I made that word up...) be a treat!



Fitting with this month's spirit of both fall and Halloween googley-eye decor, our specialty spotlight of the month is Ophthalmology, followed by phone usage, eye, and mental health. To spice it up, our content writers have found the latest on Asthma and COVID-19, as well as the CBD trends in the US. Lastly, if you've been wondering what COVID-19 research has led to, take a look at our last article on fetal development and our ability to respond to COVID!

Have fun reading!!

Yours truly,

Ryen Belle Harran

Specialty Spotlight: Ophthalmology

Ilana Saidov

What is an Ophthalmologist?

Ophthalmology is a branch of medicine that focuses on maintaining ocular health.

Ophthalmologists are physicians that diagnose and treat ocular disorders, and perform a variety of procedures. These physicians are able to work in a clinic as well as a hospital, which allows for a greater variety of unique surgical and clinical cases. Ophthalmologists are able to provide a full scope of medical care, ultimately improving the quality of life for their patients. After all, vision plays an imperative role in our daily lives.



Education and Training

The road to becoming an ophthalmologist may appear to be extensive at first glance. Although it may seem daunting at first glance, the opportunity to give the gift of sight back to a patient is one that will make the process all worth it in the end. The journey begins in your undergraduate years, and continues into your four year medical school. After medical school, you will enter your internship year and will complete your ophthalmology residency after three years. Thus, a total amount of twelve years is necessary before you begin to practice independently. However, if you choose to specialize, you will spend an extra one to two years of training.

Subspecialties

- Neuro-ophthalmology: focus on the function of the eyes in relation to the brain, nerves, and muscles. Neuro-ophthalmologists treat optic nerve issues, double vision, abnormal eye movements, and other diseases that can lead to tumors and even thyroid disease.
- Oculoplastics: Oculoplastic surgeons repair any damage on the structure of the eye and eyelids. Their focus is on enhancing the function and aesthetic qualities of facial structures through medical injections.
- Glaucoma: A subspecialty in glaucoma focuses on the repair of the optic nerve which connects the brain to the eye. In order to maintain a healthy eye pressure, physicians will use lasers to prevent fluid buildup in the eyes.

Average Salary: \$379,000

Source:

<https://www.aao.org/eye-health/tips-prevention/what-is-ophthalmologist>

Phone FoMO: How Our Phone Use Relates to Mental Health

Aprile Bertomo

For many students, effective studying often involves putting away one's phone to focus. However, the constant buzzing of notifications on a Friday night may sometimes cause some to take a quick look. Seeing notifications of others having a good time may actually result in FoMO, or "fear of missing out" on what others are doing. Interestingly, a recent study performed by Akyol et al., 2021 has shown that greater utilization of phones over time has only resulted in more enhanced feelings of FoMO.



While the role of phones in partially mediating mental health has been investigated in the past, the correlation between phone use and feelings of FoMO has never previously been investigated. Consequently, the ultimately goal of Akyol et al., 2021 was to analyze whether a link existed between over-utilization or problematic use of phones and the development of FoMO and escapism.

Over 200 college undergraduate students from Turkey were asked to fill out a questionnaire addressing and attempting to quantify issues from stress and severity of worrying to escapism and FoMO. Ultimately, a correlation was established between greater, more problematic utilization of phones and more issues with mental health, in addition to feelings of FoMO and escapism. However, it was also found that FoMO and escapism were not the main players in the overall mediation of the



correlation between use of phones and mental health issues. Akyol et al., 2021 noted that such an association may instead be modulated via a differing mechanism, such as emotion regulation, self-regulation, and impulsiveness. The authors also noted that further studies might be necessary, as the participants of this study were mostly women.

Ultimately, although such a study could be helpful among varying populations, it was particularly beneficial in developing a more enhanced understanding of pre-service teacher training. Such findings extend to improving the relationship between teachers and students, allowing teachers to becoming increasingly aware of how to better psychological resilience among their students.

References:

Akyol, N. A., Ergin, D. A., Krettmann, A. K., & Essau, C. A. (2021). Is the relationship between problematic mobile phone use and mental health problems mediated by fear of missing out and escapism?. *Addictive Behaviors Reports*, 100384. Chicago

The Asthma Epidemic and COVID-19

Ilana Saidov



Over the past two years, the COVID epidemic has swept the nation, causing the most damage to individuals with pre-existing health disorders. However, it has been recently discovered that certain disorders can offer immunity from this disease. Scientists have been researching the relationship between Asthma and COVID in order to determine whether asthmatic patients who contracted the virus will be at an increased risk of intubation or experience severe symptoms.

Asthma is a respiratory disease caused by airway inflammation. This inflammation leads to increased swelling and mucus buildup in the airway, making it difficult to breathe. Scientists are currently trying to understand why COVID does not aggravate symptoms of asthma but may instead decrease the severity of the virus if it is contracted. It was reported that asthmatic individuals were 14% less likely to contract the virus, easing the worries of asthmatic individuals who were concerned that the corticosteroids they use to control their disease increased their susceptibility to the virus. Additionally, it was concluded that asthma patients were not more frequently admitted to the ICU nor required supplemental oxygen than patients without asthma. Thus, patients with asthma are not at an increased risk of contracting COVID.

There are multiple instances where having a certain medical condition may provide susceptibility to different diseases. Although, individuals with asthma were less likely to contract COVID, scientists are convinced that this decreased risk is due to the inhaled steroids asthmatic patients use to control their symptoms. Within these steroids are two proteins, ACE2 receptor and transmembrane protease serine 2, that are required for COVID entry into the body. These two proteins may be the reason why asthmatic individuals have lower rates of infection. Thus, although it may appear that having a certain disorder can only negatively impact your life, it is imperative to view each disorder by the hidden benefits it can provide.

Source

<https://www.drugdiscoverynews.com/the-complex-relationship-between-asthma-and-covid-19-15232>

<https://kidshealth.org/en/parents/asthma.html>

Sociodemographic Differences Amongst Young Adults: Tobacco and Cannabis Marketing

Ashlyn Southerland

In recent years, many of us have noticed the gradual shift that has occurred within smoking product use. In the year 2000, tobacco smoking was the main public health and medical concern, affecting 46.5 million adults, which constituted 23.3% of the United States population. Countless news articles, health fairs, educational programs, and relevant community strategies focused on detailing lung cancer, COPD, emphysema, and general cardiovascular diseases as long-term consequences of the ongoing health behavior, striving to reduce this soaring percentage.

Nowadays, we do happen to present a rather notable decline in cigarette smoking prevalence (13.5% of the U.S. population), but many medical practitioners and public health professionals are now increasing their focus on another addictive

substance: cannabis. Notably, cannabis use has continued to rise over the years, with about half of the U.S. population having tried the substance between the years 2017 and 2019. Keeping this in mind, with the rise of online, television, and film marketing of both cigarettes and cannabis, it is often questioned as to how the forms and frequencies of advertising and representation could affect a population's ability to perform the behavior.

This month, a prospective school-based cohort study was published that highlighted the integration of cigarette and cannabis marketing amongst young adults, with the sample separated by sociodemographic characteristics, as well as their "never" use of either cigarettes or cannabis. With a mean age of 19.8 years, participants were asked to assess themselves via Likert scale-based questionnaire for the following: recall of online advertisements, recall of product use in television and movies, lifetime tobacco and cannabis use, and specifications of their sociodemographic characteristics (gender identity, sexual identity, race/ethnicity, and current enrollment in a degree program).



Concluding implementations of this study revealed that most respondents regularly viewed marketing of these products through television or movies, rather than online advertising. Women were also indicated at seeing higher rates of online cannabis advertisements and both film and television representation of cigarettes and cannabis. Lastly, on a rather interesting note, racial/ethnic minorities had a significantly lower recall of tobacco and cannabis marketing strategies than respondents that identified as White. Overall, this study definitely helps better grasp the populations and communities that may be most at risk to cigarette and cannabis marketing.



Fetal Sex Determines COVID-19 Immune Response

Oriana Tolentino

From the onset of the COVID-19 pandemic, millions of researchers around the world have utilized their prowess in Science, technology, and medicine in the exploration of the virus which could bring forth more effective intervention procedures. Some of those researchers would be the team of Andrea Edlow, an assistant professor at Harvard Medical School. This new research study, with the title “Maternal SARS-CoV-2 infection elicits sexually dimorphic placental immune responses”, was published in *Science Translational Medicine* on October 19, 2021. This is the first study to investigate the impact of sex differences on the production and transfer of the maternal COVID-19 antibodies to the fetus.

There were 68 pregnant women who were involved in this study. 30 were healthy while 38 were infected by the COVID-19 virus during their pregnancy. Half of the women had male fetuses while the other half had females. (Note: All neonates whose mothers had COVID-19 did not have such type of infection) The researchers obtained and processed the mothers’ maternal and cord blood as well as their placentas.



Through this study, it was discovered that the mothers generated decreased amounts of COVID-specific antibodies which resulted in the transfer of reduced immunity to male fetuses as compared to female fetuses. This entails that the vulnerability of male infants would increase when exposed to the virus during the perinatal period. This is because the newborn’s initial immunity depends on the transport of the mother’s immunoglobulin-G (IgG), a common type of antibody that serves as a protection from bacteria and viruses, to his/her blood circulation. Additionally, the study stated that with the decreased fetus’ COVID-specific IgG titers, there would be more inflammatory responses in the male fetus which could impair the mother’s ability to increase the antibody count.

The study also examined the impact of interferons (IFNs) on the placental antiviral response. After the viruses have been detected, Type I, II, and III IFNs are produced and activated to bind to their respective receptors. This would “induce the expression of downstream effectors” which would hinder the spread and progress of the infection.

References:

- Gower, A. S. and T. (2021, October 19). Male and female fetuses respond differently to COVID-19. *Harvard Gazette*. Retrieved October 25, 2021, from <https://news.harvard.edu/gazette/story/2021/10/male-and-female-fetuses-respond-differently-to-covid-19/>.
- Bordt, E. A., Shook, L. L., Atyeo, C., Pullen, K. M., De Guzman, R. M., Meinsohn, M.-C., Chauvin, M., Fischinger, S., Yockey, L. J., James, K., Lima, R., Yonker, L. M., Fasano, A., Brigida, S., Bebell, L. M., Roberts, D. J., Pépin, D., Huh, J. R., Bilbo, S. D., ... Edlow, A. G. (2021). MATERNAL SARS-COV-2 infection elicits sexually dimorphic placental immune responses. *Science Translational Medicine*. <https://doi.org/10.1126/scitranslmed.abi7428>

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