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### EYERESEARCH CENTER SPRING 2022 E-NEWSLETTER



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#### Research News

Author

Stuart Richer, OD., PhD, FAAO Title

AMD - A Multifactorial Environmental Disease

Summary

Many of my colleagues are used to thinking about AMD one dimensionally, as a one supplement disease, with Amsler Grid monitoring, and periodic monitoring to rescue with anti-VEGF inhibiting injections. Yet we know from epidemiologic, genetic and structure and function research that it is a much more complicated entity. Beyond aging, AMD is largely an environmental multifactorial disease exacerbated by "foods of modern commerce" on the one hand, and "lack of micronutrients on the other hand" and environmental toxins. Here are some the factors I consider in my clinical workup.

- •Avoid cottonseed corn, soy, canola oils & trans fat
- •Avoid high fructose corn syrup, sugar, white flour, excessive carbohydrates, and glyphosate
- -Follow Chris A Knobbe, MD at www.cureAMD.org
- -Environmental Working Group at www.org/tapwater/
- •Decrease smoking and increase movement (walking, exercise)
- -Follow general physician recommendations for better cardiovascular health
- •Increase organic plant food (i.e., green leafy veggies)
- -Follow SuperFoods® Rx books by Steve Pratt, MD, www.superhealthyliving.com
- -A high potency multivitamin/mineral w carotenoid is helpful
- •Avoid excessive nutrient depleting pharmaceuticals & toxins
- -Follow www.worstpills.org
- -A high potency BID multivitamin/mineral w carotenoid is often helpful
- •Promote gastrointestinal health with prebiotics, probiotics, symbiotic foods and supplements
- •Avoid exposure to bright morning / afternoon sunlight (i.e.blueblockers-yellow tints)
- •Consume orange, yellow peppers, goji berries for zeaxanthin
- •Consume spinach, green leafy vegetables, eggs, avocados for lutein
- •Measure 25 OH D liver reserve status & replete vitamin D3 (with K2) if necessary
- •Follow www.grassrootshealth.net
- •Avoid high Fe (II) intake; give blood 3x/year
- •Consume Omega 3 fatty acids particularly DHA from fish / algae
- $\bullet {\sf Consume}$  polyphenols in mixed berries, teas, herbs but don't overdo it
- •Use Vitamin D3, DHA & resveratrol to help prevent neovascular wet AMD;
- •See the "red wine supplement" at www.longevinex.com
- •See www.eyedoctorricher.com
- •Higher doses of fish / n3 supplements and carotenoids are required for obese patients and patients w higher % body fat
- Fix sleep breathing (i.e., nose breathing & apnea)
- •Activate the parasympathetic nervous system (i.e. meditation) when under stress

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## EYE RESEARCH CENTER

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#### Research News

Author:

Michael R. Kozlowski OD PhD, FAAO DABO

Title:

The Relationship Between Blue Light and Ocular Health – Recent Data from Chronic, Low Intensity Exposures Summary:

In recent years, there has been a significant amount of discussion over whether or not the blue light exposures experienced during the use of personal electronic devices (PED's) are having damaging effects on ocular health, including increasing the incidence of age-related macular degeneration (AMD)(1-3). Many experimental studies have shown that exposing the eye itself, or cultured ocular cells, to blue light can produce damage (3). It is hard to predict effects of PED use on ocular health based on the findings of these studies, however, since they generally employed blue light intensities that were much higher than those produced by PED's and used far fewer exposures than those sustained during habitual PED use. A few studies using lower intensities of blue light and multiple exposures, however, also produced evidence of ocular damage (4-6).

Our laboratory recently completed a study of the effect of chronically repeated exposures to low intensities of blue light on health of retinal pigment epithelium (RPE) cells(7). In this study, cell layers produced from a number of types of RPE cells were exposed to a range of intensities of blue light. The lowest intensity was less than an order of magnitude higher than those of PED's. Eight hour exposures at each light level were given daily until damage was produced in the cell layer. The time required to produce damage was found to be intensity-dependent, and ranged up to more than 30 weeks. An extrapolation of these results down to the intensities of PED's predicted that, over a lifetime, the use of these devices could produce damage to RPE cells. Although RPE cell layers grown in vitro are certainly not a perfect model of the retina, these results at least suggest that intensive users of PED's should employ some form of blue light protection.

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# EYE RESEARCH CENTER

SPRING 2022 E-NEWSLETTER



#### **Research** News

Author

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Title

Dry Eye Syndrome During COVID-19

Summary

COVID-19, caused by a SARS-COV-2 viral infection, was identified in Wuhan, China, in December 2019. Since the outbreak, many individuals have been working from home and wearing masks as a precaution. All of these variables, as well as the usage of digital devices and online learning (1), may have a role in dry eye syndrome (DES) and eye strain(2). Furthermore, there is evidence that wearing masks can promote DES. Wearing the mask has been linked to tear evaporation and conjunctival irritation (3). Giannaccare et al., 2020 showed that 10.3 percent (%) of people exhibited growing ocular discomfort symptoms during the pandemic, with a mean OSDI score of 21 and a mean age of 28.5 years old (4). According to a cross-sectional study conducted in Japan, 76.5 % of Japanese women had a combined result of definite or probable dry eye syndrome, which was greater than the % of male office employees who utilized Visual Display Terminal (5). According to Al-Namaeh et al., 2022, the prevalence rate of mild DES during COVID is 77.5 %, with 64.50 % of males and 35.50 % of females, an average age of 29 years old (mean ± SD 29 ± 14.14), 23 males (57.5 %) and 17 females (42.5 %). Inomata et al., 2020 showed that more than 8 hours per day of screen exposure was associated with symptomatic dry eye when compared to less than 4 hours per day (6). It has been found that using a digital screen reduces tear breakup time, ocular surface staining, and symptoms of meibomian gland dysfunction, all of which contribute to dry eye syndrome (7). Because of the Pandemic Remote Revolution, eye care professionals should be aware of dry eye syndrome and address it with their patients, as well as offer solutions (8,9). REFERENCES

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On April 4th, 2022 there were 80 million cases and 981,000 deaths in the United States.

For more information please visit : CDC COVID Data Tracker

#### **Upcoming Events**

Research Course A-Z I

Research Course A-Z II

Check the website for registration info.

2022 Webinar TBD Profits from selected events will be contributed to apda in the amount of 30%.

#### Partnership antican PARKINSON DISEASE ASSOCIATION

Strength in optimism. Hope in progress.

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