Greetings

Dear Colleagues:

Welcome to the Summer 2018 edition of Pediatric Eye News. This issue is dedicated to computer vision syndrome, a common but incompletely understood phenomenon related to the extended amount of time often spent viewing display screens on computers and tablets. The main article is contributed by Y. Shira Kresch, OD, one of the outstanding optometrists on our faculty. We hope the information provided is both interesting and useful in your daily practice, and have also provided a fun Eye Q quiz to test your ophthalmic knowledge. As always, electronic copies of the newsletter and detailed information about our outstanding physicians, services, and facilities can be found on our webpage at http://childrensnyp.org/mschony/ophthalmology.html. Wishing you a happy and enjoyable summer!

Computer Vision Syndrome

Goodbye paper-books, hello computer screens. Not only are adults facing a growing amount of screen time from phones, tablets, and computers, our children are growing up in a world of screens as well. The Vision Council of America estimated that 28% of people spend 10 or more hours per day viewing digital displays. This has led to a new phenomenon referred to as computer vision syndrome, or digital eye strain, such that approximately 40% of adults and 80% of teens experience significant visual symptoms from electronic displays.

Computer vision syndrome encompasses a cluster of characteristic signs and symptoms that can be broken down into three main facets: extraocular, accommodative, and ocular surface.

Extraocular manifestations are primarily musculoskeletal, and include neck stiffness, headache, backache and shoulder pain. These symptoms are typically exacerbated by the ergonomic stresses of poor placement of the digital screen. The accommodative component is caused by the sustained accommodation and convergence required for close work. The extended periods of near viewing required for phones, tablets, and monitors place stress on the accommodative and convergence systems, leading to blurring and even diplopia. Ocular surface issues are also a common element of the syndrome, and result from decreased blinking and fatigue causing the surface of the eyes to become relatively dry. This component can be (continued on page 2)
1. Computer vision syndrome may include each of the following, EXCEPT
   a. Eye fatigue
   b. Esotropia
   c. Headaches
   d. Dry eyes

2. Childhood myopia, or near-sightedness, has been linked to each of the following, EXCEPT
   a. Family history
   b. Lack of outdoor activity
   c. Increased time focusing at near
   d. Eye rubbing

3. The common ophthalmic notation for “left eye” is
   a. OU
   b. OS
   c. OD
   d. Oh No

4. Excessive exposure to blue light from computer screens can result in
   a. Disruption of normal Circadian rhythms
   b. Cataract
   c. Retinal photo-toxicity
   d. Dry eyes

5. The sky often appears blue because
   a. Red wavelengths are absorbed by water molecules in the atmosphere
   b. The atmosphere acts as a prism for sunlight
   c. Our retinal pigments are more sensitive to blue
   d. Short wavelength blue light is scattered more intensely than longer wavelength red


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made more severe by certain environmental conditions including air conditioning or low humidity.

Although computer vision syndrome can occur in otherwise normal children, a comprehensive eye exam will ensure that significant refractive errors are identified and corrected, as well as making sure that children have normal binocular vision and a healthy ocular surface. Children who are constantly blinking when concentrating on homework, or rubbing their eyes when reading, may be showing signs of digital eye strain. If the signs or symptoms are apparent, then referral to a pediatric ophthalmologist or optometrist is indicated.

Other common concerns regarding increased exposure to computer screens are the potential for harm to the retina and the risk of inducing progressive myopia. Although the retina does not appear to be damaged by the light from computer monitors, the increased levels of blue light can disrupt the body’s circadian rhythm, making falling asleep more difficult, especially when exposure occurs close to bedtime. With regard to myopia, the combination of increased near work with less outdoor play in normal sunlight has been shown to be associated with increasing the risk of progression in myopia.

There is no doubt that computers, cell phones, and tablets are here to stay, so understanding, limiting, and managing the adverse side effects are important.