



# "In the Public Eye": Productivity in Radiology and The "Computer Vision Syndrome"

Sonia Hur MD<sup>1</sup>, Mirza Baig MD<sup>1</sup>, Daniel Edelman MD<sup>1</sup>, Marielia Gerena MD<sup>1</sup>, Jared Meshekow MD<sup>2</sup>, Perry Gerard MD MBA FACR<sup>1</sup>

<sup>1</sup>Department of Radiology, Westchester Medical Center, <sup>2</sup>Department of Radiology, Temple University Hospital / Lewis Katz School of Medicine



## Background

In the era of digital imaging in medicine, computer vision syndrome has become of increasing concern amongst radiologists.

Computer vision syndrome (CVS), also known as digital eye strain, is a constellation of visual and ocular symptoms in result of stress to near vision from extended digital display use. The workflow of radiologists requires long hours of continuous examination of medical imaging that arrive through picture archiving communications system (PACS) available at dedicated workstations composed of high-performance diagnostic monitor displays.

While CVS is not unique to the radiology department in the era of electronic medical records, radiologists remain the most susceptible to digital eye strain amongst physicians.

## Purpose

We explore the effects of computer vision syndrome on the productivity amongst radiologists and methods to treat the causes of digital eye strain.

## Results

Studies show that prevalence of CVS amongst radiologist was 36% in 2005. Prevalence of CVS was higher amongst female radiologists. Increased working hours have shown greatest impact on prevalence of CVS amongst radiologists, exacerbated by longer work days and fewer breaks.

## Results continued

Radiologists reported increased eye strain with CT studies that generally take longer to read than radiographs. Digital eye strain is related to vision problems caused by extended time spent on computers and other digital devices.

Concerted systemic effort with the workplace is necessary to manage CVS, including requirement of annual eye examination and providing ergonomic desks and chairs.

## Symptoms of CVS

- Headache
- Burning eyes
- Blurred vision
- Dry or red eyes
- Sensitivity to light
- Double vision
- Loss of ability to focus
- Neck and shoulder pain

**Table 1** Common symptoms of CVS.

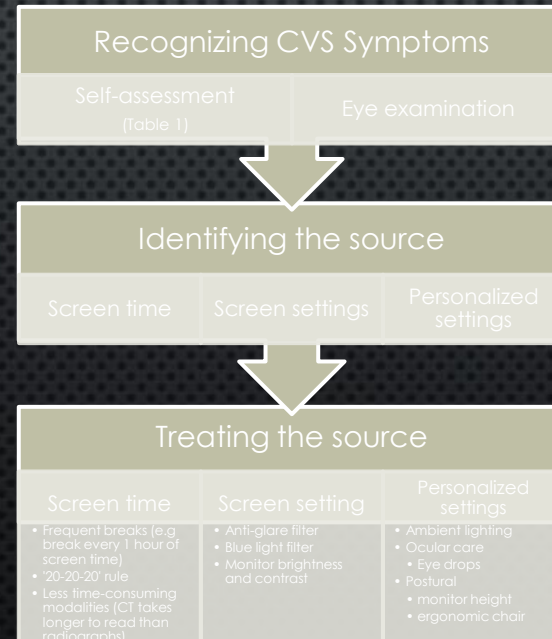
Findings by Alhasan et al show that the most common symptoms of CVS experienced by radiology residents are headache, dryness, burning, blurred vision, and sensitivity to light.

## Conclusions

Prolonged use of electronic display in the era of digital imaging in medicine brings attention to computer vision syndrome amongst radiologists. Increased recognition of computer vision syndrome as ocular and vision occupation harm is essential for proactive workplace intervention of digital eye strain and in effect increase in productivity amongst radiologists. We discuss methods to treat the causes of digital eye strain.

## References

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3. Dabrowiecki A, et al. Impact of blue light filtering glasses on computer vision syndrome in radiology residents: a pilot study. *Journal of Medical Imaging*. 2019; 7(2):022402. https://doi.org/10.1117/1.JMI.7.2.022402



**Figure 1** Approach to identifying CVS and managing cause of CVS symptoms