DEPARTMENT OF OPHTHALMOLOGY
AIIMS, RAJKOT
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Digital Eye Strain

COMPUTER VISION SYNDROME

"complex of eye and vision problems related to use of digital devices - computer, smart phone etc."

Life without digital devices is now considered a myth. These devices are ubiquitous. Gone are the days when computers and cellphones were status symbol. We are in an era when digital devices have become the fourth basic necessity of 'modern homo sapiens'.

Although the recent pandemic failed to teach us how to correctly use our masks, it did teach us that we need gadgets to survive. Academics, arts, yoga, medical consultation, earning and learning; everything available and waiting to be explored on our command. It's no surprise that it's termed as digital addiction, and the organ we mistreat here the most is our eyes.

Epidemiology –

prevalence of computer vision syndrome - as high as 75% among medical students and 50.23% in children.

Among children, the reported risk factors - smartphone use (odds ratio(OR)-1.98), duration of digital device use ›5hr (OR-3.38), digital device distance ‹18 inches (OR-1.65), and use of mobile games ›1 h per day (OR-16.69)

Symptoms

Eye strain, tired eyes, dry/watery, irritated eyes, contact lens related problems, blurred vision, slowness of focus, double vision, near vision problem, neck/ shoulder/back pain

CVS self assessment questionnaire

	a. Frequency	b. Intensity	Frequency x Intensity
1 Burning			
2 Itching			
3 Feeling of a foreign body			
4 Tearing			
5 Excessive blinking			
6 Eye redness			
7 Eye pain			
8 Heavy eyelids			
9 Dryness			
10 Blurred vision			
11 Double vision			
12 Difficulty focusing for near vision			
13 Increased sensitivity to light			
14 Coloured halos around objects			
15 Feeling that eyesight is worsening			
16 Headache			

$$\text{Score} = \sum_{i=1}^{16} (\text{frequency of symptom occurrence})_i \times (\text{intensity of symptom})_i \; ^*=$$

Frequency:- Never=0 - Occasionally=1 - Often or always=2

Intensity - Moderate=1 - Intense=2

If the total score is ≥6 points, the worker is considered to suffer Computer Vision Syndrome

Protection and Prevention

Minimize glare

- anti-glare screen
- anti-reflective coating to glasses
- brightness adjustment of computer screen.
- text size and background color are optimized
- words with upper case and lower case combinations are better tolerated than ALL UPPER-CASE
- dark characters against a light background display screen are better accepted compared to the opposite
- surrounding walls - matte finish

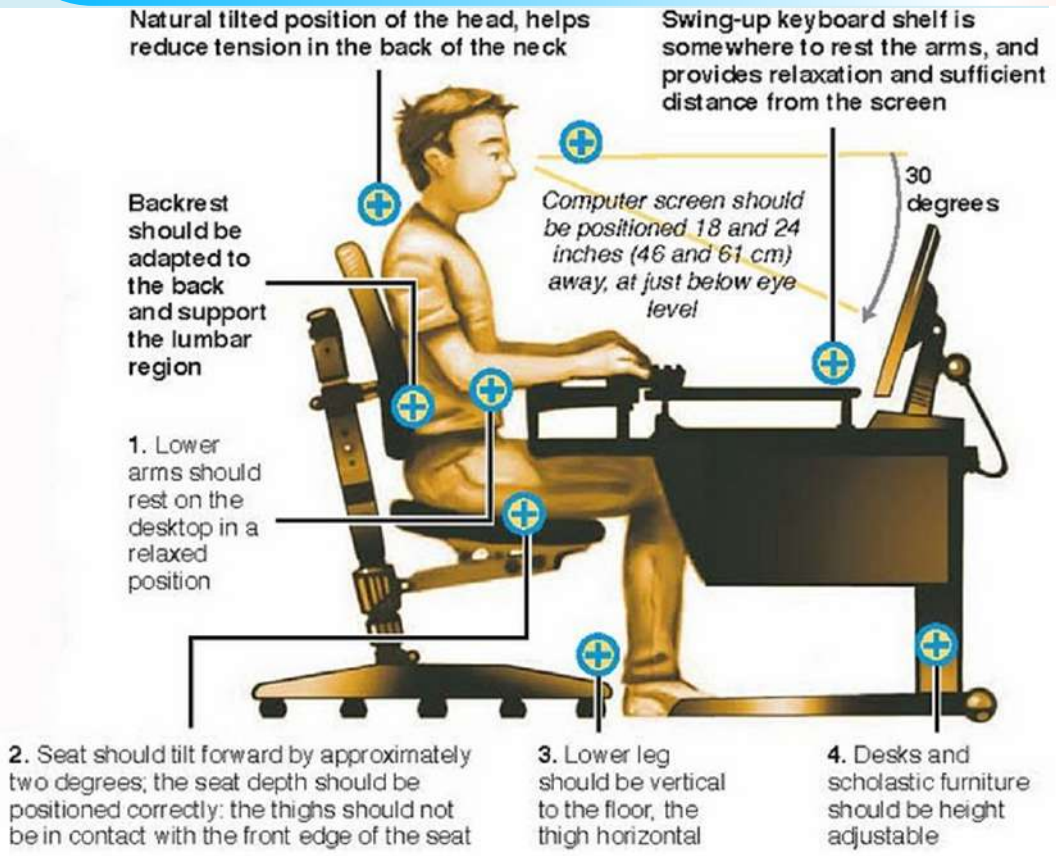
Shifting to glasses with focal length designed for computer work

Tear Substitutes

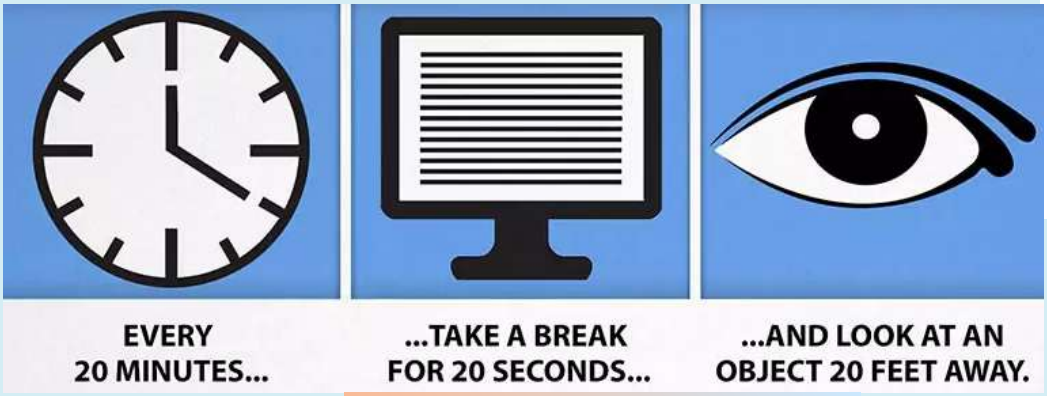
Blink Frequently

15 - 20 / minute

Protection and Prevention



Ergonomics of computer use



20-20-20 rule

Cellphone

screen adjustment for night use

avoid in dark room

avoid use in lying posture

LIMIT

SCREEN TIME

References

1. Mohan A, Sen P, Shah C, Jain E, Jain S. Prevalence and risk factor assessment of digital eye strain among children using online e-learning during the COVID-19 pandemic, Indian Journal of Ophthalmology: January 2021;69(1): 140-144
2. Wang L, Wei X, Deng Y. Computer Vision Syndrome During SARS-CoV-2 Outbreak in University Students: A Comparison Between Online Courses and Classroom Lectures. Front Public Health. 2021 Jul 8;9:696036.

Message from Executive Director

I heartily congratulate the Department of Ophthalmology for this e-newsletter published on a very relevant topic today.

My best wishes to the entire team.

- **Dr. (Col) C. D. S. Katoch**

Message from department of Ophthalmology

One of the most feared expressions in modern times is
'The Computer Is Down'..
Let us save our eyes ..they should not go down..

Dr Mamta Singh (Assistant Professor)
Dr. Aayushi Gaudani (Junior Resident)
Kushaiy Dhankot (Optometrist)