Computer Vision Syndrome and Dry Eye in Our Day to Day Practice

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Computer vision syndrome is also called as digital eye strain due to long time use of computer or digital screen. It is a discomfort of the eye or dry eye after two or more hours in front of a digital screen. Computer Have become an indispensable part of everyday life both at work and or personal use. Yet, for many people this also means experiencing eye strain or dryness, sign that eyes are fatigued from overuse of digital devices. In Arab population majority of people are facing dry eye due to overuse of digital devices and hot weather as we are seeing in day-to-day practice.

Most of the people is facing eye discomfort or vision problem when using digital screen for a long time. The severity of discomfort appears to increase with the amount of digital screen use specially dryness in the eyes.

According to survey results nearly 30% population are high users who is spending more than 9 to 10 hours per day Infront of digital devices. 25 percent children use digital devices more than 3 hours. The average worker spends seven to eight hours in a day on the computer or digital screen either in the office or working from home. Due to covid pandemic now digital devices user increased and dry eye problem also increased in our day-to-day practice.

Dry eye per se is not a disease entity, but a symptom complex occurring as a sequelae to deficiency or abnormalities of the tear film. It is a chronic condition arising due to the lack of moisture and insufficient lubrication in the eye.

Symptoms of the dry eye

Symptoms suggestive of dry eye include irritation, foreign body sensation, feeling of dryness, itching, non-specific ocular discomfort and chronically sore eyes not responding to a variety of drops uses earlier.

Etiology of the dry eye

- Aqueous tear deficiency
- Mucin deficiency dry eye
- Lipid deficiency and abnormalities
- Impaired eyelid function
- Epitheliopathies.

How to check tear film test

This test includes tear film breakup time (BUT), Schirmer test, Vital staining with Rose Bengal, Ter levels of lysozyme and lactoferrin, tear osmolarity and conjunctival impression cytology, Out of theses BUT, Schirmer -I test and Rose Bengal staining are most important and when any two of these are positive, diagnosis of dry eye syndrome is confirmed.

Treatment

The main treatment of the dry eye are artificial tears contains Cellulose derivatives, Methyl cellulose, Hypromellose or Polyvinyl alcohol. Topical cyclosporine 0.05% to 0.1% is also very effective drug for dry eye in recent studies. 5% acetylcysteine also used for helping the mucus threads and decreasing tear viscosity. Sometimes punctum occlusion also useful to decrease drainage of tears in patients with severe dry eye.

These are following symptoms of computer vision syndrome:

- Tired or itching eyes.
- Red watery or dry eyes.

- Blurry vision.

- Dry eyes.

- Ocular pain or headache.

- Eye discomfort when shifting focus between the monitor and paper document.

- Color fringes or afterimages when you look away from the monitor.

- Increased sensitivity to light.

These symptoms may be caused by:

- Not proper lighting.

- Glare on a digital screen.

- Not viewing distances object while using computer constantly.

- Incorrect seating position.

- Uncorrected refractive error.

- A combination of all these factors.

Diagnosis

Computer Vision Syndrome can be diagnosed by Detail Eye checkup. It is mandatory to check vision requirement at the exact working distance of computer or digital device:

- Visual acuity assessment to which vision is affected either far or near.

- A refraction test should be done to find out the appropriate glass power needed to correct for any refractive errors (Myopia, Hypermetropia, Astigmatism and Presbyopia).

- Proper Slit lamp examination to check anterior surface of the cornea, tear film and anterior segment.

- Shirmer's test and Matrix-Metalloproteinase 9 (MMP 9 LEVELS) test to assess severity of dryness.

Treatment

The treatment of the Computer vision syndrome are varies, its depend upon the person to person how many hours using the digital devices. However, with regular eye checkup and eye care is helpful for computer vision syndrome.

In Some people who do not require the use of power glasses for other daily activities may benefit from anti reflection glasses or computer protected glasses like blue coating glasses are useful for computer use. If person already wearing glasses can make glasses along with computer protected coated to obtain good vision.

Normal Eyeglasses or contact lenses may not be adequate for computer work. Prescribed lenses needed Special lens designs, lens powers or lens tints or special coatings is helpful for visual abilities and comfort.

How to view the computer

There is Proper body posture for computer use. Few important things can reduce the symptoms of Computer vision syndrome. This includes room light conditions, chair comfortability, the exact position of the computer and most important is frequent rest break while working on computer:

- **Computer screen positioning:** Many people have habit or more comfortable to see a computer when looking downward. Actually, the computer screen should be 15 to 20 degrees below eye level (about 4 or 5 inches) from the center of the computer screen and 25 to 35 inches from the eyes.

- **Reference materials:** Reference materials should be always near or above the keyboard or in a document holder below the monitor. This will help to maintain proper head position while viewing the computer screen.

- **Lighting:** Proper lighting is also necessary to avoid screen glare, mainly from overhead lighting or windows light. Always cover the windows with blinds or put light bulbs of low watt.

- **Anti-glare or anti reflection screens:** If cannot reduce glare from light sources, it can be using a screen glare filter. These filters reduced the amount of light reflected from the screen.

- **Seating position:** Sitting chair always be comfortable and conform to the body. Hight should be adjusted so the feet rest flat on the floor. Arms should be adjusted to for support while typing and wrists shouldn't rest on the keyboard when typing.

- **Breaks in between:** To prevent Dry eye or eyestrain try to follow the 20-20 rule using the computer for long periods. 20 -20 rule is every 20 minutes of computer viewing, look into the distance for 20 seconds to allow the eyes a chance to refocus.

- **Frequent blinking:** Blinking is very important while using a computer to reduce the dry eye, try to blink frequently.

Blinking keeps the front surface of the eye moist and it helps to prevent the dryness.

- **Lubricating eye drops:** Are helpful for dry eye in computer vision syndrome.

Tips to relieve from computer vision syndrome

- Get a details eye exam: Any eye problem will increase the Computer Vision syndrome. Its need to Correct refractive error: myopia, hypermetropia, or astigmatism. For presbyopia you may need eye glasses which is suitable for your computer working distance.

- Appropriate lighting: While using a computer, Room lighting should be about half as bright. Reduced Exterior Light by: closing drapes, shades or blinds. Reduce Interior Light by using lower intensity light bulbs or tubes. Computer monitor position should not in front of the window or door.

- Reduced glare by wearing glasses, You should always choose lens with anti-reflective (AR), and blue coating Glare. Use anti-glare screen on your computer monitor to reduce the glare.

- Use LED and LCD screens with an anti-reflective surface. Old screens can cause a noticeable "flicker" of images, which can cause of computer vision syndrome.

- Adjust your device display settings: Adjust the contrast and brightness level of your computer screen so that its comfortable for you. A glare-reducing screen on the monitor can also help. Always adjust the text or font size as per your requirement especially when reading or composing long documents.

- Frequent blinking: Try blinking more frequently to lubricate the eyes. People tend to blink less frequently when working at a computer. Which is most common cause of dry eyes.

- Exercise of your eyes while using computer: 20/20/20 RULE: Every 20 minutes, look away from your computer and look at Distant Object (at least 20 feet away) for at least 20 seconds.

- Frequent breaks: Take frequent breaks to give your eyes a rest. It is also important for neck, back and shoulder pain, Take Frequent Breaks while working on computer in a day. During the break, stand up, stretch your arms, legs, back, neck and shoulders to reduce tension and muscle fatigue.

- Modify your workstation: Always modify your workstation as per your requirement like your sitting position, room lighting etc. Position your monitor so that the top of the screen at the same levels your eyes or slightly below and at a distance of approximately 25 to 35 inches. Many people find that putting the screen at arm's length is a good rule of thumb.

- Don't over use your digital devices: Don't over use of digital devices it can increase your dryness and irritation of the eye. Try reading from Books instead of the unnecessary digital screen when possible.

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