

Preventing Eye Strain During Computer Use

Workplace Safety & Health | Ergonomics

When viewing digital screens for extended periods, it's not uncommon to experience eye discomfort or vision problems. Sustained screen focus on small print can increase the likelihood of eye strain (sometimes referred to as digital eye strain), fatigue, blurred vision, headaches, itching and tired eyes. These problems can become more pronounced with age.

Many of the visual symptoms experienced by users are only temporary and improve after stopping digital device use. However, others may experience continued reduced visual abilities, such as blurred distance vision, even after stopping work at a computer. If the cause of the problem is not addressed, these symptoms can continue to recur and perhaps worsen with additional digital screen use.

Discomfort and Eye Strain

Potential sources of discomfort and eye strain can include one or more of the following:

- Improper monitor height and digital viewing distance
- Poor seated position
- Poor lighting
- Glare while viewing a digital screen
- General eye health, such as uncorrected vision problems or difficulty with prescription lenses at the computer workstation
- Sustained digital viewing, without adequate breaks

Preventing or reducing digital eye strain often involves adjusting equipment and layout, as well as modifying working habits and ensuring that even minor vision problems are corrected. Simple solutions to prevent or reduce the risk of digital eye strain can be grouped into two categories.

Workstation Adjustments

- **Position computer monitors at arm's length.** Start with the monitor at arm's length and adjust to your comfort zone, generally between 16 and 30 inches (40-76 cm). If you catch yourself squinting to read, either move the monitors closer, increase the font size, or both.
- **Keep screen height at or slightly below eye level.** The top of the monitor should be at or slightly below a forward gaze. If wearing bifocals, the top of the monitor should be about four inches below eye level. For most people, this results in placing the monitor screen directly on the tabletop. Tilt the top of the monitor slightly away to better align your gaze angle and avoid neck discomfort.
- **Screen adjustments.** Your eyes must work harder when the screen is significantly brighter than the surrounding environment or surrounding lighting is too bright. To create balance from lighting sources, and reduce reflection and glare, consider the following tips: As much as possible, keep ambient lighting low (including light from overhead sources, windows and doors). Use task lighting to provide a consistent lighting source for the workspace. Adjust screen brightness and monitor contrast. If using multiple monitors, brightness and contrast levels should match. Increase text size to avoid straining to read small print. Adjust window blinds to reduce sun glare on the screen. Avoid positioning monitors directly in front of or behind

windows with direct sun exposures. Consider the use of a glare screen on the monitor to further reduce glare.

- **Mobile device support.** Provide a stand to hold the phone or tablet at a comfortable reading distance. Mobile devices (smart phone, e-reader, and tablets) have shortened viewing distances and can increase visual discomfort, since they are typically read at a distance between 8-12 inches (20-30 cm), compared to reading printed text, which is read at 13 inches (33 cm) or more. This close focus requires increased use of eye muscles and can cause eye fatigue. Adjust the brightness and text size of the device to optimize comfort based on the reading environment.

Work Habits

- **Follow the 20-20-20 rule and take “bright breaks.”** Strategies for reducing eye strain include: Take a visual break every 20 minutes by looking at an object 20 feet (6 m) away for 20 seconds. Looking into the distance allows your eyes to relax and gives them a break from prolonged near focus. Change viewing conditions from light to dark can leave your eyes feeling refreshed. One way to take a break from bright light at your desk is to gently cup your hands over your eyes to simulate a darker environment. After about 30 seconds, slowly remove your cupped hands and open your refreshed eyes. Avoid staring at a computer screen. Staring slows down eye blink rates, which can lead to dry eyes. Air handling systems may contribute to eye dryness during periods of low humidity, and a desktop humidifier may be helpful. Try to blink frequently and consider medical advice about the use of eye drops to ease dryness if discomfort persists. Take a walk indoors or even outside to give your eyes a chance to refresh. Refocus near and far, and if possible, change the environment between light and dark.
- **Vision correction and eyewear.** Consult regularly with an eye doctor to help maintain eye health. Be sure to tell your doctor how much time is spent using screens and the distances involved. If corrective lenses are prescribed, inquire about the use of glasses designed specifically for computer work instead of standard bifocals or progressive lenses. Additionally, the use of lens tints and coatings may reduce eye strain.
- **Understanding “blue light.”** The human eye can process a variety of colors across the color spectrum, but there is increased receptivity and fondness for blue wavelengths (think blue sky, blue water). This color signals the body to be alert, awake and engaged. This is good during daylight hours, but staring at computer screens, tablets, and cell phones before bedtime can interrupt the sleep cycle. Switch your device to “night-mode” to help reduce blue light emission before bedtime.

Making improvements to computer workstation layouts and work habits, along with regular attention to eye health are steps that each person can take to reduce the potential for eye strain during computer use.

Related Resources

Office Ergonomics *TravSources*®

Adjusting Your Office Workstation Video Series

Online Training: Adjusting Your Office Workstation

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(161)