

Protecting Your Eyes from Eyestrain

Capt William "Cole" Ettingoff, Assistant Plans and Programs Officer - MAR-VA-001 and National Safety Analysis and Reporting Team Member

“Cleared for the visual approach.” Great words to hear when you fly. It’s also a great reminder that our eyes are a critical piece of equipment not only for flying, but for many of our operations. In an era where we spend more and more time staring at computer screens, there is growing concern about the negative impacts on eyestrain.

Recognizing the Hazard: What is Eyestrain?

Your eyes use a number of muscles to focus. With excessive or repetitive use, these muscles can become strained. We’ve known for many years that eyes can feel “tired” after long periods of focusing on one thing like reading a book or exposure to excessive light like flying on top of a layer of clouds or snow. The dramatic increase in screen time over the last few years coupled with the increasing complexity of images screens can display has fuel significant concerns about the strain long term computer use can place not only on those eye muscles but also the nerves within your eyes.

It’s important to be able to recognize when your eyes are feeling strained. Your eyes themselves may feel sore, tired, or even a sensation of itching or burning, as well as vision discrepancies such as blurry or double vision and sensitivity to light. The symptoms may extend beyond your eyes to include headache, soreness in your neck/shoulders, or difficulty concentrating.

Mitigating the Risk: How Can I Protect My Eyes?

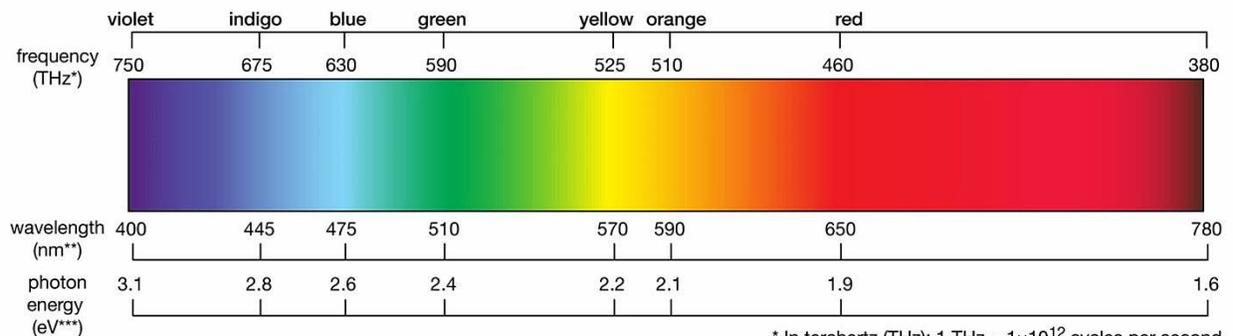
Your eyes are impressively complex organs with numerous muscles, nerves, blood vessels, and other elements. Despite their complexity, there is a pretty narrow range of things the eyes can do without feeling some strain. Here are a few things to think about when you’re working, studying, or operating CAP equipment:

- Don’t make your eyes work harder than they have to. Avoid excessive glare, small text, fuzzy images, and dirty screens. This may mean wiping off your computer screen, adjusting your settings, or repositioning to avoid glare from the sun when on your laptop. Touchscreens like iPads, G1000 displays, and of course our phones are particularly susceptible to smudging and glaring. If you wear glasses, talk to your optometrist about if you might benefit from glasses specifically designed for prolonged computer use.

- Consider turning down the brightness, particularly at night or in the dark. Night operations benefit from red light not only because it helps preserve your night vision, but also lessens avoids the sharp contrast on your eyes making it easier for them to stay active longer.

Note: there is a lot of conversation about “blue light” from computer screens. You can encounter blue light in a lot of places including sunlight and most TV screens. While research has shown that blue light, which is at the high energy end of the visible light spectrum, can have negative impacts with prolonged exposure, there is limited research to validate the claims of commercial blue light glasses or blue light blockers. While more research is coming, be cautious of any product that promises to protect your eyes and continue to think about other ways to protect your vision.

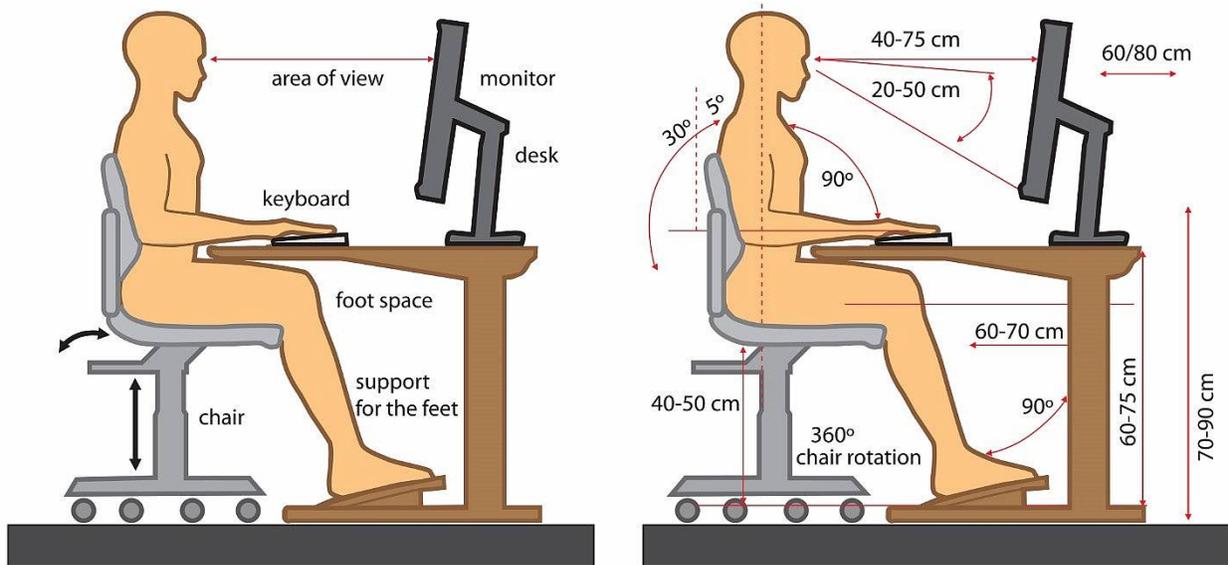
Light, the visible spectrum



* In terahertz (THz); 1 THz = 1×10^{12} cycles per second.
 ** In nanometres (nm); 1 nm = 1×10^{-9} metre.
 *** In electron volts (eV).

© Encyclopædia Britannica, Inc.

- Take breaks. Your eye muscles get tired and need breaks just like your other muscles. In an era where many of us are spending hours on end looking at computer screens, recognize that even short visual breaks can help protect your eyes. One rule of thumb is the “20-20-20 rule” where every twenty minutes you look at something at least 20 feet away for at least 20 seconds. That change in focus gives our eyes a chance to relieve the strain of maintaining focus. If you feel your eyes getting tired, try to take a break earlier. If your hosting an online meeting, consider setting aside time for a short break or even just a friendly reminder to look away from the screen every now and then.
- Position yourself for success. Being deliberate about your body position and your relationship to your computer and other equipment can not only help limit eye strain but lessen your risk for carpel tunnel and neck/back pain. There is a lot that can be said about positioning but the basic idea is a comfortable chair with your feet flat on the ground or supported, wrists and arms supported, with a screen centered slightly below eye level at a distance of about two feet.



- Take care of the rest of your body. Eyestrain is often thought of as an acute, isolated issue, but many chronic health conditions have manifestations in the eyes. Any issue that compromises blood flow or the nervous system such as high blood pressure or diabetes, can increase the strain on your eyes.

When to Ask for Help

If you are experiencing prolonged eyestrain or symptoms that do not easily resolve with breaks, see a doctor. Seeing a doctor before you notice deficiencies may allow you to avoid or delay eye deterioration. If you maintain a flight medical certificate, remember that the basic vision test included in most of those physicals is designed only to recognize when your vision has deteriorated not to get out in front of deterioration. For that, you should see an optometrist (for most eye exams and routine care) or an ophthalmologist (for more specialized care).

Bottom Line

Many of our eyes have been working overtime since the pandemic began and while there is growing concern about the long term impacts of eyestrain, you can prevent strain by taking short breaks often, adjusting your environment and screens, and taking care of your health.