

8 Ways to Reduce Digital Eye Strain

Digital Eye Strain (DES), sometimes called Computer Vision Syndrome (CVS) is a term used to describe the eye strain experienced with extended digital screen use (smartphones, tablets, computer monitors, etc.). The symptoms of digital eye strain can include headaches, tired eyes, dry eyes, red eyes, neck and back pain, and overall fatigue and discomfort.

What can be done about digital eye strain? We can all agree that these digital devices we spend our day using aren't going away any time soon, so let's discuss some steps we can take to help our eyes work more easily and comfortably when browser surfing, checking Facebook and email, and oh yes, working also! Many of the preventive measures may sound obvious, but they are frequently overlooked or ignored.

1. **Take vision breaks.** Extended amounts of time spent focusing on a computer monitor or digital device stresses the eye's focusing (accommodative) system because we don't tend to shift our focus away from the screen. This extended focus can last for hours at a time. Just like any other muscle in the body, the focusing muscles can fatigue and tire and lead to eye strain, digital eye strain. Following the 20-20-20 rule can help. After every 20-minutes of screen time, shift your focus away from the screen and look at an object at least 20 feet away from you (preferably out a window), for 20 seconds. This will help "stretch" the focusing muscles and help curb the effects of digital eye strain.
2. **Think about blinking.** This may sound funny, because blinking is an involuntary act, after all. Nevertheless, hidden camera studies have shown that our blink rate drops almost in half when working at the computer. We blink on average about every 8 seconds when doing non-computer related things, but that blink rate drops to an average of once every 14 seconds when working at the computer. Every time we blink, our eyes get a fresh layer of tears on the corneal surface (the clear dome on the front of the eye). When we don't blink enough, we don't get enough fresh tears and through evaporation, our eyes begin to dry excessively. Prolonged periods of decreased blink rate can eventually lead to the atrophy of the eye lid oil glands (meibomian glands) that create a natural evaporation barrier to the tears on our eyes. Less oil equals more dryness! So, think about blinking!
3. **Computer glasses.** Glasses specifically designed to help our eyes focus at the computer can help with eye strain by making it easier to focus the eyes at your computer distance, either desktop, laptop, or both. These computer lenses aren't designed to take over for the way our eyes focus, but rather to assist the eyes and help them to focus easier and longer, allowing you to perform more efficiently, with less fatigue, strain and discomfort. Which is to say, with less digital eye strain!
4. **Blue Light Protection.** There's been a lot written about the potential effects of high energy blue-violet light on the health of our eyes. Laboratory studies have shown that blue violet light can potentially damage the macula (the vision center of our retina), but since we haven't been using digital devices for decades, we don't honestly know what the long-term health effects of digital light are going to be. What we do know is that blue light is very harsh and difficult to view, causes discomfort, and has been linked with poor sleeping patterns. Blue light exposure has been identified as a factor in disrupting sleep by blocking the body's release of melatonin as we prepare to fall asleep, so you may want to reduce the time spent using your devices as you try to fall asleep. We can decrease and

sometimes almost eliminate the amount of high energy blue-violet light we're exposed to using certain lens materials and specific no-glare treatments. This will assist the eyes being more comfortable when using digital devices, and potentially reduce the harmful effects of using digital devices.

5. **Computer Monitor Position.** The position of the computer monitor can also help reduce digital eye strain. Ideally you should position your computer monitor 20-30 inches away from your face and try to align your eye level with the very top of your monitor. This will help position the center of the computer screen at an ideal angle of 15-20 degrees below primary gaze. To put it more simply, position your monitor at about arm's length with the monitor slightly below eye level.
6. **Text size and color.** Adjusting your text size and color can also help with how well your eyes focus, reducing digital eye strain. Our eyes tend to prefer black text on a white or slightly yellow background. Other dark-on-light color combinations also work fine for most people. You want to try to avoid low contrast text and background combinations as they can make it more difficult to focus on for long periods of time.
7. **Computer Monitor Display Brightness Settings.** The brightness of your display should not be left at the default settings, rather they should be adjusted according to the room brightness. Use a sheet of white copy paper held up next to the monitor and adjust the brightness of the display so that the brightness level matches as closely as possible the brightness of the paper, this will put the screen brightness at about the correct level. Remember that the brightness of the room will change dramatically from morning, to afternoon, to evening, so try to keep adjusting the monitor brightness as the lighting level changes. As an alternative, consider a monitor with a function that automatically adjusts the brightness to the optimal setting according to the ambient room light.
8. **Proper Posture.** Proper posture can be a big factor in reducing fatigue when working at the computer. Adjust your chair height so that your feet are flat on the floor, and your knees are in line with your hips. Sit up straight and keep your hips as far back against the back of the chair as possible. The back of the chair should be slightly reclined to approximately a 100-110-degree angle. Position the keyboard as close to directly in front of you as possible. Relax your shoulders and be aware if they begin to rise toward your ears or begin to round forward as you work. Try to keep your neck in a relaxed and neutral position and try to avoid tipping your neck forward or back.

Computers and digital devices are used in almost every aspect of our daily lives, and steps need to be taken to help our eyes use them accurately and efficiently. For additional information on digital eye strain or to schedule a computer vision evaluation, visit our website at www.AnnandaleEyeCare.com, or call us at (703) 941-4111.

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