Eye Strain Prevention

Kelly Whittlesey, OTR/L, CEAS II
University of San Francisco
What we’ll cover today

- Symptoms of eye strain
- Causes
- Behavioral solutions
- Environmental solutions
- Exercises
- Popular Questions
What is ergonomics?
Symptoms
What to look out for (in the eyes)

- Sore
- Tired
- Itchy
- Burning
- Watering
- Dry
- Blurred vision
- Sensitivity to light
What to look out for (in the body)

- Headache
- Difficulty Concentrating
- Sore Neck, Shoulders, or Back
Causes & Conditions
Causes of Computer Vision Syndrome (CVS)

- Decreased rate of blinking
- Incomplete blinking
- Incorrectly positioned screen
- Prolonged viewing of screen/absence of breaks
- Poor posture
- Low refresh rate
- Time spent at a screen
- Existing visual problems
Prevalence of CVS

- Estimated to affect more than 50% of computer users
- More common in women than men (65% vs 60%, respectively)
- More common in those who use more than one screen simultaneously (75% for more than one device, 53% for those using only one device)
- More common in those who wear contact lenses vs those who don’t (65% vs 50% at 6 or more hours of screen use)
Effects of CVS

- Decreases comfort
- Decreases productivity
- Increases error rate
- Increases stress
- Disrupts circadian rhythm
Other causes of eye strain

- Excessive reading from paper documents
- Stress and fatigue
- Lighting conditions
- Sleep deprivation
- Underlying/unaddressed vision problems
- Exposure to dry, hot, moving air
- Driving
Behavioral solutions
Don’t rub your eyes
Use a humidifier or eye drops
Visit to the optometrist to upgrade your tools

- Bifocals/progressives
- Contacts
- Reading Glasses
- Distance Glasses
Maintain good posture

- Sit upright or with a slight reclined back
- Slightly tuck chin
- Allow eyes to relax downward at 15-20 degrees
Limit video calls when possible
Screen Use Before Bed

- Limit screen use before bed
- Use “night mode”
Vision break – Focus on Distance
Vision break – Palms Over Eyes
Take mini movement breaks
Recapping behavioral solutions

● Take 20-20-20 vision breaks
● Resist rubbing your eyes
● Use a humidifier or eye drops
● Visit the optometrist
● Maintain good posture
● Limit Zoom calls
● Limit screen time 2-3 hours before bed
● Use “night mode” for dimmer screens
Environmental solutions
Command +
Position most viewed screen in the middle
Use a screen with a 70–85 Hz minimum refresh rate
Reduce or eliminate glare on screens
Seated workstation

✅ Feet flat on floor
✅ Hips slightly higher than knees
✅ 1-2” clearance behind backs of knees
✅ Posture 90-120° with the floor
✅ Shoulders relaxed, elbows 90-100°
✅ Wrists straight, palms facing down
✅ Top ¼ of monitor level with eye line
Standing workstation

- Prop a foot up while standing
- Shoulders relaxed, elbows 90-100°
- Wrists straight, palms facing down
- Top ¼ of monitor level with eye line
Use a dual light source for paperwork
Recapping environmental solutions

- Enlarge type ("Command" "+")
- Position monitors correctly
- Invest in screen with higher refresh rate
- Reduce/Eliminate glare
- Ensure sufficient lighting for paperwork
Common questions
Do computer glasses work?

- No evidence to support it
Is it bad to use a computer in the dark?

- Nope
Do fluorescent lights cause eye strain or headaches?

- Some studies suggest that certain *older* types of fluorescent lights may increase incidence of eye strain and headaches.
End your workday and give your eyes a rest

● Put away screens
● Do a short meditation
● Work out
● Listen to a podcast
● Read a book
Resources

- https://www.mayoclinic.org/diseases-conditions/eyestrain/symptoms-causes/syc-20372397
- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4170366/
- https://uihc.org/health-topics/computer-vision-syndrome
- https://bmjophth.bmj.com/content/3/1/e000146
- https://www.aao.org/eye-health/tips-prevention/are-computer-glasses-worth-it
Resources