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# Becoming a Squinter Nation

Glasses Can Correct Near and Far, but What About Those Screens in Between?

By *Melinda Beck*

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There isn't a name for it and few eye doctors test for it. But many people are having trouble seeing in the middle distance that demands so much of our focus.

Some 80% of us use computers, staring intently on screens set well between typical distance and reading range, often for many hours each day. Add in laptops, pagers, e-readers, smartphones, personal-digital assistants and hand-held video games, each with its own optimum distance and tiny flickering screen, and the demands on human eyes today would baffle even Benjamin Franklin, inventor of the bifocal in the late 18th century.



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Testing your sore eyes: Computer-vision syndrome affects about 90% of people who spend three hours or more a day in front of a screen. Measure how far your eyes are from your computer screen, laptop, smartphone and other hand-held devices. Then ask your eye doctor to test you at these distances. JOHN KUCZALA

"The information age has taken a toll on our eyesight," says Jeffrey Anshel, an optometrist in Carlsbad, Calif., and president of Corporate Vision Consulting, which advises employers on vision issues.

More people are showing up at eye appointments complaining of headaches, fatigue, blurred vision and neck pain—all symptoms of computer-vision syndrome (CVS), which affects some 90% of the people who spent three hours or more at day at a computer, according to the National Institute of Occupational Safety and Health.

But vision prescriptions mainly focus on myopia (nearsightedness) or presbyopia (the difficulty focusing on near objects that comes with age). Since there are no set standards for measuring mid-range vision,

ophthalmologists and optometrists typically just cut any reading prescription they give patients in half for computer distance. With people sitting anywhere from 18 to 40 inches from their screens, that can be wildly off.

For many people who already wear glasses, their current prescriptions aren't quite cutting it. People who wear bifocals, for example, often try to bring the computer screen into focus by tilting their head back, jutting out their chins and peering through the bottom of the lens.

Progressive lenses and trifocals have intermediate-range correction built in—but it's typically so narrow that you have to hold your head at precisely the right angle to hit the sweet spot, which can wreak havoc on neck muscles after just a few minutes.



A sliding arm allows an eye chart slide back and forth to test vision at different distances.  
NATIONAL EYE INSTITUTE, NATIONAL INSTITUTES OF HEALTH

Christine McCleary leaves glasses in different prescriptions and combinations in strategic spots around the house, including bifocal sunglasses for driving and two strengths of computer glasses for multitasking. "If I'm watching TV while I'm working on the computer, I wear the weaker pair. If I'm just working on the computer, I wear the stronger ones," says the 58-year old Lake Tahoe, Nev., resident, who says she has at least a dozen pairs.

Even office workers who don't need distance or reading glasses now may be taxing their eyes unknowingly. "People may not realize that their eyes are working really hard to give them that vision," says Rachel Bishop, chief of the Consult Services Section at the National Eye Institute. "Mid-range glasses for working at the computer can make an enormous difference."

It's best to measure your work environment, noting exactly how far your eyes are from your computer screen, keyboard and desk surface, as well as

from any laptop or hand-held devices you use. Some eye-care offices have a device called an accommodation rule that allows a technician to slide an eye chart back and forth to simulate different distances.

Patients should also keep track of how many hours they typically spend focusing at each distance during the day. More than 40% of Americans spend three or more hours a day staring at a computer or hand-held, according to the American Optometric Association. "Every individual is different, and too often, in the hustle and bustle of seeing patients in practice, we don't stop to ask, 'What is your working distance? What are your hobbies?' If you go fly-fishing, you need to focus up close for hooking your flies as well as seeing at computer distance," says Glen Steele, a professor at Southern College of Optometry in Memphis, Tenn.

There are many treatment options, though each has some drawbacks.

**Computer glasses.** The simplest solution is to get a single prescription that works best for that distance alone. Inexpensive versions are available over the counter, as are clip-ons and inserts with other glasses. The drawback is that they don't correct for astigmatism, or eyes that aren't symmetrical. "People tend to guess at the strength they need and they usually guess wrong," Dr. Anshel says.

**Occupational progressive lens.** If you do need different corrections for your computer and reading work, these lenses have a large upper portion for intermediate range and a lower area for close-up, with little or no distance viewing at the top. Objects far away may be blurry, but that may not be a bad tradeoff for excellent near and middle vision.

"You won't be able to see the boss coming across the room, but hopefully you recognize his voice or his gait," Dr. Bishop says.

**Multifocal contacts.** These are fairly new, and to date most are divided into portions for distance and close-range viewing, like bifocals, and don't work as well for computer and other intermediate-range tasks. But newer options may be coming.

**Monovision.** Some people who need help seeing at far and near ranges are opting to wear one contact lens set for each distance. The brain then automatically decides which image to focus on in different situations. Some people are able to use this for intermediate range as well, although most find it's not well suited for computer use and other middle-range work.

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**Corrective surgery.** Lasik and other forms of corrective surgery fix refractive problems such as near-sighted or far-sightedness, not the focusing problems that come with age. Once you become presbyopic, you'll

need reading glasses—and you may need intermediate correction as well.

**Cataract surgery.** By age 65 or so, many people develop cataracts, in which the crystalline lens becomes cloudy and opaque and needs to be removed. It's that same lens that becomes stiff and unable to focus with presbyopia. In the past, people who had cataract surgery automatically needed reading glasses to see close up. But a new generation of intra-ocular lenses can automatically refocus on near and intermediate distances. The technology is so promising that some patients are having the lens implanted even before they need cataract surgery, though most eye surgeons prefer to wait.

**Remove your distance glasses.** Some nearsighted people find that as they age, their reading vision is clear with no correction at all. That may work for computer distance as well, at least for awhile until their presbyopia advances. "We encourage people to do that as long as they can," says Nate Bonilla-Warford, an optometrist in Tampa, Fla.

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