

## Shining Light on the Subject of Fatigue

One of the primary ways Controllers maintain situation awareness in the control room is with information perceived visually. The muscles and fibers in and around the eyes are very small, but very active. They accommodate changes in the environment as light grows brighter or dimmer, to allow just the right amount of light needed for scanning and gathering information. The muscles and supporting fibers can alter the shape of the eyes' lens so that the eyes can focus on objects that are near or far away. Once we see an object clearly, the optic nerve serves as a high-speed messenger that transfers information from the eyes to the brain, relaying information in an instant.

Daily activities can take a toll on the health of our eyes. Eyestrain is often experienced during intense, prolonged use of eye muscles while monitoring computer displays and other electronic devices. Eye problems caused by computer use are called computer vision syndrome (CVS). This includes a range of eyestrain and discomfort. Research shows that between 50% and 90% of people who work at a computer screen have at least some symptoms of CVS or basic eyestrain. Symptoms of eyestrain include dry, itchy, burning sensations in and around the eyes, difficulty concentrating, headache and tightening of the muscles in the shoulders and neck. More intense symptoms may include nausea and migraines. Any of these symptoms can certainly interfere with a person's ability to remain alert and complete tasks. Uncorrected vision can also exacerbate eyestrain, so it's important to have your eyes checked by an eye care professional annually.

You've heard it said that "you are what you eat" and that statement is true in many regards, and even applies to caring for the health of your eyes. There are nutrients that not only help maintain proper function of the eyes but also reduce the development of age-related degenerative diseases. Vitamin A is essential for healthy eyes. In fact, Vitamin A deficiency is one of the most common causes of blindness in the world. Vitamin C may help reduce the risk of developing cataracts. Omega-3 fatty acids are key for protecting the retina and avoiding dry eye disease. Keep in mind that water is the most important nutrient for achieving and maintaining good health, to include the good health of your eyes!

The quality and amount of lighting in the control room is critical to reducing eyestrain. The control room lighting, contrasted with the background luminance of the SCADA displays helps to determine eye adaption levels and eye comfort. When concentrated visual tasks are performed, appropriate lighting levels should be at least 500–800 lux and higher by using task lighting directed on desk surfaces. At Pipeline Performance Group we have made many visits to control rooms where the lighting levels were low, or sometimes even off during night shift.

Good eye health is important for quality of life. In the control room it is important to give your eyes frequent rest breaks. Are you familiar with the *20-20-20 Rule*? Eye doctors recommend taking a break from your screens or books every 20 minutes to look at something that is 20 feet away for a minimum of 20 seconds. It takes your eyes about 20 seconds to completely relax. You might even consider using an app such as [Eye Care 20 20 20](#) to assist you in caring for your eyes.

Make a point of taking the time to get adequate quality and quantity of sleep, plan for purposeful and efficient breaks, drink plenty of water to refresh your eyes, brain, and body, and keep the lights on in the control room!

