



Children and Computer Vision Syndrome

The average American child now spends one to three hours per day on the computer doing homework, talking online with friends, and playing games. Parents encourage children as young as two or three years old to use the computer. In fact: 90 percent of school-age children have computer access at home or in school. 54 million children in the United States alone use a computer at home or in school. Many pediatric computer vision eye doctors believe that heavy computer use among children puts them at risk for early myopia. They point to several recent studies as evidence that computers can have a negative impact on a child's vision: 25 percent to 30 percent of computer-using children need corrective eyewear to work comfortably and safely at the computer at home or in school, says a study at the University of California at Berkeley School of Optometry. The percentage of first-graders with myopia has increased from 12.1 percent to 20.4 percent since 1995, according to a study by the Department of Health in Taiwan. A similar study in Singapore found that in three years the percentage of seven- to nine-year-olds with myopia had doubled, to 34 percent. Sitting for hours in front of a computer screen stresses a child's eyes because the computer forces the child's vision system to focus and strain a lot more than any other task. Twenty years ago, most children played outside, and their distant vision was more important. Today, most children work at a computer either at home or school each day. Sitting in front of a computer and staring at a computer screen is causing vision problems that were not known years ago. Should you worry about how much time your child spends in front of the computer every day? Today it is a "near-point world," and parents need to be aware of the vision problems associated with computer work. Computer use demands fine motor skills from young eyes that are not well developed. Only when the visual system matures is a child better able to handle the stress of a computer on that system. According to the American Optometric Association, the impact of computer use on children's vision involves these factors: Children have a limited degree of self-awareness. They may perform a task on the computer for hours with few breaks. This prolonged activity can cause eye focusing and eye strain problems. Children are very

adaptable. They assume that what they see and how they see is normal — even if their vision is problematic. That's why it is important for parents to monitor the time a child spends working at a computer. Children are smaller than adults. Since computer workstations are often arranged for adult use, this can change the viewing angle for children. Computer users should view the screen slightly downward, at a 15-degree angle. Furthermore, as a result of difficulty reaching the keyboard or placing their feet on the floor, a child may experience neck, shoulder and/or back pain.

Five Tips for Preventing Computer Vision Syndrome in Children

Many pediatric eye doctors believe that environmental stress of the "near-point world" rather than heredity is creating the myopia (nearsightedness) epidemic. In fact, children using computers before their visual systems are fully developed are at the very heart of the public health problem called computer vision syndrome (CVS). To prevent your child from suffering from CVS, follow these five tips:

- Before starting school, every child should have a comprehensive eye exam, including near-point (computer and reading) and distance testing.
- Workstations should be arranged to suit a child not an adult.
- The recommended distance between the monitor and the eye for children is 18-28 inches. By viewing the computer screen closer than 18 inches, children risk straining their eyes.
- Parents and teachers should be aware of any behavior that indicates potential problems, such as eye redness, frequent rubbing of the eyes, head turns and other unusual postures, or complaints of blurriness or eye fatigue. Avoidance of the computer may also be an indication of discomfort.
- Most importantly, have your child's eyes examined by your Vision Source doctor. Ask about how computer eyeglasses may work to reduce vision problems and eye fatigue.





Vision Skills Needed For School Success

There are many visual skills beyond seeing clearly that team together to support academic success.

Vision is more than just the ability to see clearly, or having 20/20 eyesight. It is also the ability to understand and respond to what is seen. Basic visual skills include the ability to focus the eyes, use both eyes together as a team, and move them effectively. Other visual perceptual skills include:

- **Recognition:** (the ability to tell the difference between letters like "b" and "d")
- **Comprehension:** (to "picture" in our mind what is happening in a story we are reading)
- **Retention:** (to be able to remember and recall details of what we read)

Every child needs to have the following vision skills for effective reading and learning:

- **Visual Acuity:** the ability to see clearly in the distance for viewing the chalkboard, at an intermediate distance for the computer, and up close for reading a book.
- **Eye Focusing:** the ability to quickly and accurately maintain clear vision as the distance from objects change, such as when looking from the chalkboard to a paper on the desk and back. Eye focusing allows the child to easily maintain clear vision over time like when reading a book or writing a report.

- **Eye Tracking:** the ability to keep the eyes on target when looking from one object to another, moving the eyes along a printed page, or following a moving object like a thrown ball.
- **Eye Teaming:** the ability to coordinate and use both eyes together when moving the eyes along a printed page, and to be able to judge distances and see depth for class work and sports.
- **Eye-hand Coordination:** the ability to use visual information to monitor and direct the hands



when drawing a picture or trying to hit a ball.

- **Visual Perception:** the ability to organize images on a printed page into letters, words and ideas and to understand and remember what is read.

If any of these visual skills are

lacking or not functioning properly, a child will have to work harder. This can lead to headaches, fatigue and other eyestrain problems. Parents and teachers need to be alert for symptoms that may indicate a child has a vision problem.

