



HEALTH & FITNESS

How can hand-held video games affect vision?

By Carolyn LoBocchiaro O.D.

Today's children spend a lot more time playing video games than their parents ever did. Video gaming is so accessible now. In the past, you needed to go to an arcade with some coins to play video games. Now, we can carry them around in our pockets. Playing hand-held video games for extended periods of time can be detrimental to a child's developing visual system.

Why are hand-held video games harmful to vision?

The closer objects are, the harder the eyes have to work to see them. It is as simple as that. When the eyes are asked to focus on close objects for extended periods of time, the following signs and symptoms might occur:

- eyestrain: the eyes might start to hurt
- headaches: usually on the forehead
- blurry vision: this can be near or far and may even be intermittent
- double vision: this can be near or far and may also be intermittent
- anatomical adaptations: the eyes may change their size and shape resulting in the need for glasses or an increase in the prescription

Why do these visual effects occur?

The focusing system in the eyes is responsible for changing the shape of the lens inside the eyes so the eyes can see clearly at the desired distance. When the eyes are asked to focus at close distances for extended periods of time, as what is necessary when playing hand-held video games, the focusing system can spasm. This would cause things in the distance to be temporarily blurry upon finishing a video game. This is called pseudomyopia and can lead to true myopia or nearsightedness. If one is already nearsighted, this can cause the nearsightedness to increase at a more rapid rate.

The vergence system is responsible for converging or pointing the eyes during hand-held video game playing. This is also put under a lot of stress when asked to converge for extended periods of time. When the eyes get tired, this can break down and be less accurate which can cause double vision.

Changes in the size and shape of the eye may occur when the eye is forced to focus on close objects for extended periods of time. Nearsighted eyes are usually longer than they should be.

Long term hand-held video gaming can cause sustained pulling of the muscles against the eyeball. This causes the eye to lengthen which leads to a worsening of the vision.

As human beings, we are programmed to adapt to different environments. If the message our brain is getting is that the eyes need to be focused up close for long periods of time, the brain will send out signals that encourage the eye to grow and become more nearsighted. If the eyes spend most of the time looking at close objects, why not change shape to make it easier to do this?

How can we minimize the child's visual changes associated with hand-held video game playing?

Encourage the child to take frequent rest breaks. Children should be encouraged to take a break at least every 10 minutes and look out a window or into the distance.

Encourage the child to not hold the held-held device too close to their eyes. Make sure the angle of the elbow bend is 90 degrees or greater. For children who use a computer to play video games, the screen should be placed just beyond their reach and just below eye level.

Video games played on the television are less detrimental to vision because of the increased distance as long as the child is not sitting or standing too close to the screen.

Be sure your child has regular eye examinations. Vision screenings are not enough. A comprehensive eye examination can uncover potential vision problems before signs and symptoms get more serious or even before they begin. The sooner they are addressed the easier they are to manage.

Don't neglect your eyes. It is recommended that infants have their first comprehensive eye exam at six months of age, followed by age 3 years and before kindergarten. After that, an eye exam is recommended every year. Comprehensive eye exams are necessary to monitor eye health, maintain good vision and eye teaming abilities and keep patients abreast of new advances in eye care.

Carolyn LoBocchiaro O.D. is from Freehold Eye & Vision Care, 1000 W. Main St., Freehold. For more information, call 732-677-2710 or visit www.lobocchiaroeyecare.com.