The Use of Electronic Devices for the Treatment of Amblyopia

One of the most common questions I am asked by parents and other caretakers of children is how much time their children should be allowed to play video games on a daily basis. I usually hedge the question and tell the parents/caretakers to make sure that the children complete their homework and other reading assignments and then advise approximately 1 hour of video game play. My answer is not based on any particular science. I do often wonder whether some of the most skilled video game players might perform well as robotic surgeons in the future.

There is increasing interest in the use of home electronic devices for convergence training and video game therapy for amblyopia. In this issue, Singh et al. presented their results after randomly allocating children with anisometric amblyopia into two groups. Thirty-four children received 1 hour per day of video game play for the first month plus 6 hours per day of occlusion therapy, whereas 34 additional children received 6 hours per day of occlusion therapy alone. Patients were then evaluated at baseline and 1 and 3 months after treatment for best corrected visual acuity, stereoacuity, and contrast sensitivity. The study evaluated the role of monocular video game play with occlusion therapy in the management of amblyopia in patients with ages ranging from 6 to 14 years. A clinically better distance visual acuity was seen in both groups at both time intervals, but the final mean best corrected visual acuity was better in those who received video game play with occlusion therapy than in those who received occlusion therapy alone.

Video game play is believed to influence the neuro-modulatory pathways, but its role as a newer generation treatment modality has been evaluated in few studies. The authors hypothesized that video game play helps to improve sensorimotor interactions. This, in turn, enhances the ability of the brain to learn and strengthens the plasticity of the various neural pathways in amblyopia. The possibility of altered compliance cannot be ruled out when a novel treatment such as video game play is introduced because it may create an incentive for the child, resulting in improved tolerance of occlusion therapy. As we all know, anything that improves compliance for patching of the non-amblyopic eye is useful in treating children with amblyopia.

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Editor