

Keeping Minds of Seniors Sharp: Some Answers Emerge

By David Sheon | May 27, 2014

As a member of the Atari Generation, I remember my parents telling me to limit my time playing video games. Well guess what? Now I can tell them that if they want to improve their ability to fight cognitive decline, they should increase their time playing video games – at least when it comes to the games from www.Lumosity.com. A [well-designed study](#) published in PLoS One found cognitive benefits for seniors. No, this is not a paid advertisement. None of the funding for the study came from Lumosity. The study was funded by the government of Spain.

Let's back up a bit. America is aging. As the massive number of baby boomers reach their twilight years, we're well served to think through the implications of a couple of statistics mentioned on the recent *60 Minutes* story, [Living to 90 and Beyond](#). The fascinating story finds compelling evidence that as we age, drinking a glass of any alcohol a day, consuming coffee, and gaining weight (but not to the point of obesity) all increase the chances of living past 90.

The story also mentions that by about 2050, the number of Americans over age 90 is projected to quadruple. It also reports that the risk of developing dementia doubles every 5 years starting at the age of 65.



David Sheon

Although more research needs to be done before we can say that games for your brain delay dementia, we can say that Lumosity improves the ability of seniors to stay attentive and alert thanks to the Spanish-funded study by Julia Mayas et al.

Recently, research on aging has begun to examine cognitive “plasticity” in seniors and its capacity to counteract cognitive decline. The aim of the Spanish-funded study was to investigate whether older adults could benefit from brain training with video games, with additional distractions, like randomly generated noises created by the researchers, to assess distraction and alertness.

For example, participants were presented with a sequence of numbers on the screen that they labelled as “odd” or “even” while ignoring irrelevant sounds such as drilling, rain, or hammering, just before being shown the number. In most trials the sound was

consistent, while in a small proportion of the trials, interspersed at random, the standard sound was replaced by a random sound not presented earlier in the task. Other studies have shown that random sounds seemed to startle and take study volunteers off task, if only for a second or two.

The researchers hypothesized that if video game training improves auditory attentional functions as it does visual attention or executive functions, then older adults in the study who used Lumosity for training would show reduced distraction and maintain their level of alertness or prevent its decline.

Forty healthy adult volunteers aged 57 to 77 years were randomly assigned to either the experimental or the control group. The study was completed by 15 of the 20 participants of the experimental group and 12 of the 20 members of the control group. All participants had normal hearing and normal or corrected-to-normal vision. In addition to the random noise task, all participants completed a battery of cognitive tests to be sure that participants in both groups had similar capabilities.

Each participant assigned to use the computer video games had 20 sessions of game training. They practiced 10 video games selected from Lumosity's commercially available package. The games practiced were specifically designed to train a variety of mental abilities, including speed of processing and mental rotation, working memory, concentration, and mental calculation.

Points were awarded to participants based on their performance and on the time taken to complete the games. To make sure the data wasn't biased, participants were not allowed to play any other video game during the study. None of the participants reported any previous experience with video games. The control group did not receive video games training but participated in three group meetings during this time in which they socialized with each other but didn't try the games.

All participants were measured for the ability to cope with distractions and stay alert before and after the study. On both accounts, those who used the video games improved compared to those who did not do the video games.

The ability to ignore irrelevant sounds improved after video game training by about 12 milliseconds, while those in the control group saw no improvement.

Similar pre- and post-training comparisons showed a 26 millisecond increase of alertness in the experimental group with no significant difference in the control.

One thing that makes this study stand out is its ability to transfer findings from the computer games to real-world improvements.

According to the study authors, "practicing video games of this type may offer some protective factor against the effects of aging and may potentially be recommended to older individuals, alongside other interventions found to improve mental functions. These include, for example, a long-term physically active lifestyle (improving executive

control and speed of processing), aerobic exercise (improving cognition by increasing the volume of grey and white matter in frontal and temporal sites), or social networking and innovative solutions to connect people in a multimodal way with family members, friends and caretakers.”

So I guess that like when my parents told me to put down the joystick and play outside, I get to remind them to do the same. Just don't be quick to dismiss video games as part of the equation to a healthier mind in our senior years.

Do you use Lumosity or any other brain training program? Have you noticed it helping you? We'd love to hear about it.

To read this post on RWHC Blog, [click here](#).