More Bad News For Brain-Training Games

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Commercial brain training programs are taking another hit.

As discussed here before, the FTC fined Lumosity a few million dollars last year for making unfounded claims that their "games can help users perform better at work and in school, and reduce or delay cognitive impairment associated with age and other serious health conditions." (Lumosity provides financial support for NPR.)

In fact, according to the FTC, Lumosity simply doesn't have the science to back up its ads. As Jessica Rich, who directs the FTC's Bureau of Consumer Protection, says: "Lumosity preyed on consumers' fears about age-related cognitive decline, suggesting their games could stave off memory loss, dementia, and even Alzheimer's disease."

A new study published at the *Journal of Neuroscience* has more bad news for Lumosity. The paper, bearing the title "No effect of commercial cognitive training on neural activity during decision-making," finds no behavioral or neural benefits to playing cognitive training games compared with playing run-of-the-mill video games. Neither control subjects, who played ordinary online video games, or those who used Lumosity games, showed any improvement (by behavioral or neural measures) beyond getting

better at the specific games they were playing. There is no evidence that this task-specific improvement transfers to other cognitive tasks.

The specific motivation for this study was to look at the possibility that games that purport to drive neural activity in areas of the brain associated with "executive function" (prefrontal cortex) might improve decision-making and, in particular, risk-assessment and the ability to put off immediate gratification. Deficits in these areas are found to play a role in addiction. If the games can help us manage our decision-making better, maybe they'd be able to help addicts. No such benefit was detected.

These results are very disappointing, for Lumosity and for anyone who craves a quick fix for the cognitive effects of a sedentary and repetitive lifestyle.

An email statement from Lumosity's Sara Colvin Friday stated: "It's a giant leap to suggest this study proves cognitive training is 'no better than video games at improving brain function': in fact, the study has a much narrower scope, focusing on risk sensitivity in young adults.

But the journal article abstract says: "Commercial adaptive cognitive training appears to have no benefits in healthy young adults above those of standard video games for measures of brain activity, choice behavior, or cognitive performance."

Of course, the jury is still out. This study did test young healthy subjects. The authors note that it's possible that subjects with cognitive decline, or addicts, may in fact stand to gain from gaming. And maybe there are some cognitive training games that will eventually be shown to produce a benefit.

But none of this has yet been shown.

But take heart, there's every reason to be optimistic that it is possible, through exercise and activity, to improve your health, including your cognitive health. Exercising the mind is good for the brain (and maybe also for the soul!) As neuroscientist Michael Merzenich has been arguing for years, the brain is highly plastic, and learning new skills will have beneficial cognitive effects on your brain. But Merzenich stresses, these benefits don't come cheap. You need to care. You need to work hard. You need to seek to improve.

You need to break old habits and form new skills to bring about lasting or meaningful change in your head. As I have argued here before, it really shouldn't be that surprising that there isn't an app for that.

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