

SCIENCE & WELLNESS

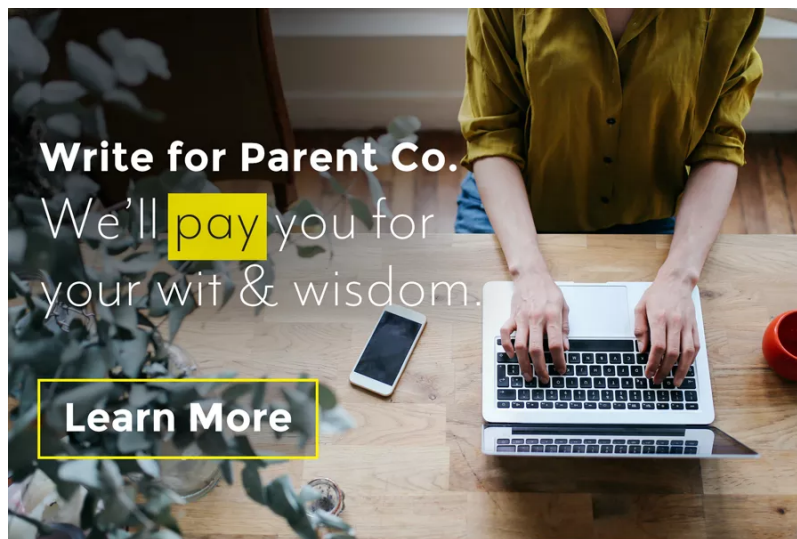
Studies Show Perhaps Video Games Aren't Destroying Kids' Brains After All

BY
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My son plays a lot of video games. His dream in life is to design video games as a career, so he is really into it. As his mother, I feel terribly guilty that I am allowing him to spend so much time staring at screens to play Minecraft and other games.

Yes, I am well aware how video games can impact sleep, distract our kids, prevent them from communicating and socializing adequately, keep them from being physically active and playing outside enough, and potentially expose them to violence as they play more aggressive and controversial games when they get older.

On other hand, the time he spends on video games does not affect his grades in school, he has plenty of energy throughout the day, and even the school uses electronic games to enhance lessons. As I just happened to be wondering what benefits video games offer our children, a [Science Alert](#) popped into my inbox answering that exact question.



Several recent studies have explored how video games can enhance important mental processes that play a role in intellect, such as perception, attention, memory, and decision-making. Most of the research involves the effects of action video games, or games that require players to move rapidly, keep track of many items at once, keep a large amount of information in their mind at once, and make split-second decisions. I am hoping that learning about these benefits will make me feel better when my son is enjoying his video games.

Improve memory

In a 2015 study published in The Journal of Neuroscience, researchers from the University of California, Irvine asked 69 participants to do one of the following: play Super Mario 3D World for two weeks, play Angry Birds, or to not play any games. The Super Mario game offers engaging experiences and enriching 3D virtual environments that provide meaningful stimulation to players.

Researchers found that video gamers who played the more complex 3D video games performed better on memory tasks than the other two groups. Why did this happen? Scientists understand that exposing animals to a more stimulating environment, known as environmental enrichment, can stimulate neuroplasticity and improve hippocampal function. These activities in the brain control our memory. The scientists believe that the stimulating environments in 3D video games can serve as a form of environmental enrichment, and therefore improve players' memory.

Increase brain matter

Playing video games can cause the amount of brain matter to increase, according to a 2014 study published in Molecular Psychiatry by the Max Planck Institute in Germany. The researchers reviewed the MRI brain scans of 24 gamers who played Super Mario 64 for 30 minutes a day for two months. They observed an increase in gray matter in the right hippocampus, right prefrontal cortex, and the cerebellum compared to a control group that did not play the game at all. These parts of the brain are responsible for spatial orientation, memory formation, strategic planning, and fine motor skills.

The researchers explain that these results prove how specific brain regions can be trained by using video games. They also predict that video games will be used to address risk factors for mental diseases like post-traumatic stress disorder, schizophrenia, and neurodegenerative disease.

Boost cognition

A study published in PLoS ONE in 2013 indicates that cognition might be enhanced from playing video games on Xbox or PlayStation. Researchers had five groups of people who do not typically play video games play one game on a mobile device for one hour a day five days a week for over four weeks – a total of 20 hours. The types of games included action, spatial memory,

match-three, hidden-object, and an agent-based life simulation.

Participants then performed four behavioral tasks before and after playing the video games to assess their cognition ability. Tasks included an attention blink task, a spatial memory and visual search task, a visual memory task to look for object tracking and cognitive control, and a complex verbal test. They found that all video games, both action and non-action games, improved cognitive function.

Improve problem solving skills

Several studies have also found that playing video games can train kids to make decisions and solve problems more effectively. A 2013 study found that 50 hours of playing an action video game significantly improved performance on a test called the Multi-Attribute Task Battery, which is modeled after skills required in piloting an aircraft. It involves using a joystick to keep a target centered on a screen, monitoring fuel levels, responding to lights on an instrument panel, and listening and responding to radio communication. High scores on this test correlate with actual piloting performance. The video game improved how individuals engage in multiple tasks at the same time.

As with anything in life – especially parenting – moderation is key. Clearly video games can cause some problems, but they can also provide some worthwhile skills that are increasingly important in today’s world. As long as my son is happy, healthy, and doing well in school, I see no need to inhibit his video game habits. However, I still need to make sure he is balancing his gaming time with social, exercise, and outdoor time. He also needs to understand that video games are a privilege not to be taken for granted. They are a treat for when homework is complete, and can be taken away at any moment.

How do you manage video game time in your house?

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