

Video games may bring cognitive benefits to kids: study

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School-age kids who spend hours a day playing video games may

outperform their peers on certain tests of mental agility, a new study suggests.

Researchers found that compared with children who never played [video games](#), those who regularly spent hours gaming had higher scores on two standard cognitive tests: one measuring short-term memory and another gauging impulse control.

Experts stressed that the findings do not prove that gaming sharpens kids' minds. It could be that children who excel in certain mental tasks are drawn to video games.

"We're not demonstrating causation in this study," said lead researcher Bader Chaarani, a professor of psychiatry at the University of Vermont.

But, he added, past research into the potential effects of kids' [video gaming](#) has often focused on the negative: [Is it associated with problems](#) like aggression, violence or depression?

Fewer studies have looked into the possibility that video gaming, which requires active mental engagement, could have some benefits—at least compared with "passive" [screen time](#) like watching TV or scrolling through social media.

"Our study suggests that video gaming is at least not worse than other screen time," Chaarani said. "And it may even have some advantages."

He and his colleagues report the findings in the Oct. 24 issue of [JAMA Network Open](#).

The question of how much "screen time" is too much for kids, and what the content should be, has long been studied and debated. But now that children not only watch old-fashioned TV, but carry their own personal

screens everywhere, the issue has only grown hotter.

Right now, the American Academy of Pediatrics recommends strict screen-time limits for children younger than 6.

With older kids, things are murkier—partly because research is mixed as to the possible harms or benefits of various forms of screen time. But the AAP does stress that screens should not interfere with exercise and sleep: Older children and teenagers should get at least an hour of physical activity each day, and adequate sleep (8-12 hours, depending on their age).

To get a better handle on how various exposures—including screen time—may affect older kids' brain development, the U.S. National Institutes of Health is conducting a study called [ABCD](#).

It is following nearly 12,000 U.S. schoolchildren, starting at age 9 to 10, and using functional MRI scans to examine their [brain activity](#) while performing various tasks.

For the current study, Charani's team used publicly available data from that research project. They focused on more than 2,000 children, separated into two groups: Video gamers who played at least three hours a day, and kids who never gamed.

On average, the researchers found, gamers scored higher on tasks measuring [impulse control](#) and [working memory](#). The latter refers to the ability to temporarily hold information, such as asking for directions and remembering them until the destination is reached.

And while three hours a day is a lot of gaming, the study also found no evidence that those kids were worse off in terms of mental health, rule breaking or attention problems.

However, the chicken-and-egg question remains, said Dr. Kirk Welker, an associate professor of radiology at the Mayo Clinic in Rochester, Minn.

It's possible that certain brain characteristics make kids gravitate toward video games, said Welker, who wrote an [editorial](#) published with the study.

He also pointed out that cognitive tests performed during fMRI scans share similarities to video games: They're done while a person lies in a scanner, viewing a display screen or using video goggles, and pushing buttons on a handheld device.

It's possible, Welker said, that regular gaming primes kids to perform well in that type of setting.

He and Chaarani noted another key question. What role does the "genre" of video [game](#) play? A military-style "shooting" game, an abstract visuospatial game, and a fantasy role-playing game are all different in the cognitive skills they engage and the emotional impact.

Those caveats made, Welker said a strength of the study was its large size. It's likely that the differences in task performances were real, and not a chance finding, he said.

At this point, both experts said, no recommendations can be made based on the findings. And the study does not prove that video gaming causes no harm, Welker pointed out.

Instead, he said, the picture is more complex.

"There may be certain benefits of video games that we don't fully understand yet," Welker said. "But there are still large knowledge gaps in

this area."

The ABCD study is following kids to young adulthood. Charani said that will allow researchers to see whether video gaming actually precedes any improvements in cognitive abilities.

More information: The American Academy of Pediatrics has advice on kids' [video gaming](#).

Bader Charani et al, Association of Video Gaming With Cognitive Performance Among Children, *JAMA Network Open* (2022). [DOI: 10.1001/jamanetworkopen.2022.35721](#)

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