

Brains of compulsive video gamers may be 'wired' differently

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(HealthDay)—The brains of compulsive video game players may be "wired" differently, new research suggests.

A study of nearly 200 South Korean boys conducted by University of Utah scientists linked chronic video game playing with differences in connections between certain regions of the brain. The researchers noted, however, that not all of these changes are negative.

Obsessive video game-playing is sometimes called Internet gaming disorder. Those affected play the games so much they often miss meals and lose sleep, according to background information with the study.

Brain scans were performed on 106 boys ages 10 to 19 who sought treatment for the disorder, which is a serious problem in South Korea, the researchers said. Their MRIs were compared to the scans of 80 other boys without the disorder.

The researchers wanted to see which regions of the brains were activated simultaneously during rest, a sign of connectivity.

Scans of boys with gaming disorder showed greater connectivity between several pairs of brain networks. Some of these may lead to lack of focus and poor impulse control, but others could help players react to new information, according to the study published online recently in the journal *Addiction Biology*.

"Most of the differences we see could be considered beneficial. However, the good changes could be inseparable from problems that come with them," the study's senior author, Dr. Jeffrey Anderson, said in a university news release. Anderson is an associate professor of neuroradiology.

Among the potential benefits is enhanced coordination between brain networks that process sight and sound and another that focuses attention on important events, preparing the person to take action, the researchers said. In a video game, they added, this enhanced coordination could help a player react faster to an oncoming fighter. And in life, it could help a person react to a ball rolling in front of a car or an unfamiliar voice.

"Hyperconnectivity between these [brain networks](#) could lead to a more robust ability to direct attention toward targets, and to recognize novel information in the environment," Anderson said. "The changes could essentially help someone to think more efficiently."

On the flip side, the researchers said chronic [video game playing](#) is

associated with differences in brain connectivity also observed in people with schizophrenia, Down syndrome and autism. Increased connectivity in these brain regions is also associated with [poor impulse control](#), they noted.

"Having these networks be too connected may increase distractibility," Anderson said.

While the study found an association between gaming disorder and [brain differences](#), it didn't establish a direct cause-and-effect relationship.

It remains unclear if chronic [video game](#) use causes these brain changes or whether people who have these differences are drawn to video games, Anderson and his colleagues said.

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