

# Action video game players experience diminished proactive attention

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Video game players are often accused of passively reacting to tasks that are spoon fed to them through graphics and stimuli on the screen. A group of researchers from Iowa State University shows that playing lots of video games has different effects on two types of cognitive activity, proactive and reactive attention.

Proactive attention can be thought of as a sort of "gearing up" mechanism. For instance, when players that are familiar with a particular game anticipate an action they need to take, such as getting a key or a pot of gold, in order to get to the next level. Reactive control is described as happening "just in time", for example, when a monster suddenly appears that is about to thwart the player's advantage or ability to get to the next level.

The study was published in the latest issue of *Psychophysiology* and used a simple visual task to test the two types of attention by measuring [brain waves](#) and behavioral responses. This task measured how proactive and reactive attention differed in frequent [video game](#) players vs. occasional players. In the task, individuals identified the color of a word when the color and word matched, such as "RED" presented in red, or did not match, such as "RED" presented in blue or green. It takes longer to indicate the color when the word does not match.

The researchers found that the just-in-time form of control was similar in the two groups of gamers. In contrast, brain wave and behavioral measures of proactive attention (the "gearing up" mechanism") were

significantly diminished in the frequent video game players. These data reveal a reduction in [brain activity](#) and disruption of behavior associated with sustained attention ability related to video game experience, which converges with other recent findings indicating that there is a relation between frequent video game playing and ADD. This negative relationship between action games and proactive attention can be contrasted with the beneficial effects of these games on other aspects of visual processing. The research team is also exploring whether non-gamers who play action games produce the same results as those found in frequent players.

More information: To view the abstract for this article, please visit: [www3.interscience.wiley.com/jo.../120747227/abstract](http://www3.interscience.wiley.com/jo.../120747227/abstract)

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