

## Have your parents ever complained that they think you are “addicted” to video games? Have you ever worried about it yourself?

**Douglas Gentile<sup>1</sup>, Shawn Green<sup>2</sup>**

<sup>1</sup> Media Research Lab, Iowa State University, Ames, IA, USA

<sup>2</sup> Department of Psychology, University of Wisconsin-Madison, Madison, WI, USA

### Reviewed by:



**Alif Daniel**  
11 years old

When talking about addiction, it is important to realize two things. First, although when you think about the word *addiction*, you might first think about addiction to chemicals (like alcohol or nicotine), it is also possible to become addicted to behaviors (like gambling). Second, addiction does not mean doing something a lot. Instead, it means that you do something in a way that damages other important areas of your life, like your grades or your family relationships.

The American Psychiatric Association examined the scientific studies and concluded that there is sufficient evidence to worry about video games becoming addictive for some people. They were not entirely sure from the studies whether it matters if the game is online or not, or whether people might also become addicted to other Internet activities (like Facebook), so they decided to call the problem “Internet Gaming Disorder” [1].

### HOW DO YOU MEASURE WHETHER SOMEONE IS ADDICTED TO VIDEO GAMES?

Because this is so new, there is not a single way that everyone agrees on to test if someone has this disorder. But there is a common set of symptoms that nearly all tests look for.

The symptoms are as follows:

1. Preoccupation with gaming – Do you spend a lot of time thinking about games when you should be paying attention to other things, such as schoolwork or the people you are actually with?
2. Withdrawal symptoms – In drug addiction (like smoking), when you try to stop, you actually feel worse. With regard to video games, do you start to feel anxious, restless, or irritable if you do not play as much?
3. Tolerance – In drug addiction, this means that your body gets used to the drug and you need to take more and more in order to get the same effect. With games, it might mean that you feel you need to spend more time playing, or to keep

getting new games, in order to feel the same level of excitement.

4. Unsuccessful attempts to stop – The word “addiction” means “to be a slave” and comes from ancient Roman law, where a person could be bound or enslaved to a master by pronouncement of the court (from *ad*, meaning to or toward, plus the past participle of *dicere*, meaning to say or pronounce). So once you are addicted to something, you are no longer your own master – you might want to cut back how much you play, but you do not seem to be able to.
5. Loss of interest in other hobbies or activities that you used to enjoy – If you find that you stop doing all the other things you used to like doing and would rather just play games, then you are limiting yourself.
6. Excessive gaming despite problems – Have you ever gotten a worst grade in school because of spending time in gaming? Are you getting into arguments with friends or family about your gaming? Are you getting too little sleep? These types of issues show that your gaming is harming your school, social, family, or physical functioning.
7. Deception – Have you ever lied about your gaming, or tried to hide when you are doing it? This damages your relationships.
8. Escape from negative mood – This is the symptom about which there is the most disagreement, because people often use media (music, movies, games, etc.) to help them cope when they are stressed or upset about something else. Still, this is often how drug addictions begin too – people have one drink to help unwind, which leads to addiction later on.
9. Jeopardized or lost relationship or important opportunity – Have you seriously hurt any of your relationships with family or friends because of game-related problems or arguments? Have you missed opportunities in school or clubs, or failed a class because of

gaming? These types of difficulties can start serious long-term problems for you.

The American Psychiatric Association says that if you answer “yes” to five of these nine symptoms, then you would be classified as addicted and should probably get some help before the problem becomes even more serious.

### SO HOW MANY KIDS WOULD BE CLASSIFIED AS ADDICTED TO VIDEO GAMES?

A national study of over 1000 subjects of 8- to 18-year olds across the US found that almost all kids play video games, but most of them (91.5%) do not have a serious problem with it (see Figure 1) [2]. This is a good thing – serious problems should not be extremely common. Nonetheless, this is not a small number of children. There are about 40 million children between 6 and 18 years in the US. If about 9 out of 10 play video games, and about 8.5% of those gamers would be classified as addicted, which means that over 3 million children today are playing in such a way that it is causing serious damage to their lives. These individuals should probably get some help, because we know

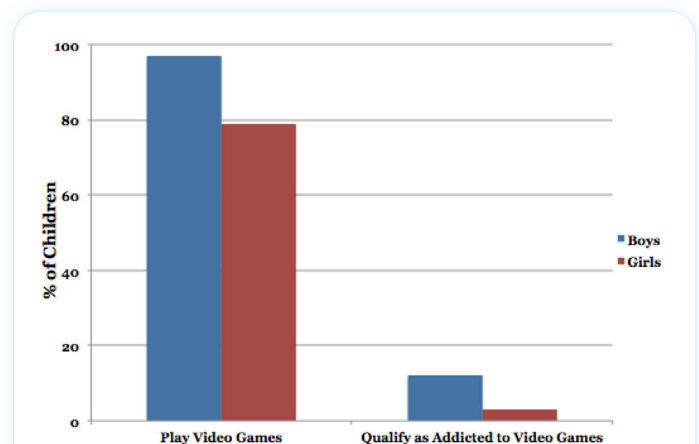
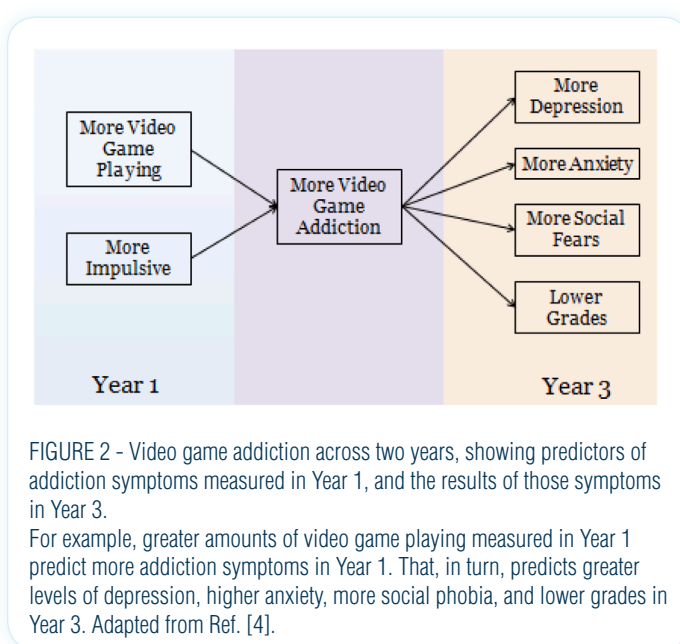


FIGURE 1 - Nearly all boys and girls play some type of video game (although this is slightly more true of boys than of girls – left bars). As a result of this playing, around 8.5% of all children will suffer enough negative life impacts to qualify as being behaviorally addicted to video games (with, again, this number being slightly higher in boys and slightly lower in girls – right bars). Adapted from Ref. [3].

that addiction can sometimes lead to quite severe issues. In a large study of over 3000 Singaporean children who were followed over 2 years, those children who became addicted also became more depressed, more anxious, more social phobic, and got worse grades than children who also played but did not get addicted. When children stopped being addicted, their depression and anxiety got better (see Figure 2) [3]. Similar results are found in several Asian and European countries.

We do not yet know whether some kids are more at risk for developing Internet Gaming Disorder than other kids. Certainly, boys are more likely to have a problem, as well as people who are more impulsive. This makes sense, as this disorder is probably a type of impulse-control disorder. You know you should do your homework, but you just cannot get yourself to stop playing. You know you should go to bed, but you just gotta get one more level first! Individuals with better impulse control might want to play that one more level, but they can still stop themselves, while individuals with worse impulse control have a much harder time stopping.



## WHAT TYPES OF GAMES ARE POTENTIALLY ADDICTIVE?

It is not yet clear whether some types of games are more associated with problem than others. Remember, there are lots of different kinds of video games – from simple mini-games that you can play on a Smartphone, all the way up to incredibly realistic games that require special systems to play. We know that the exact type of game matters a great deal in determining many of the effects the games have. For example, some types of games lead to enhancements in vision, while other types do not [5]. Similarly, some types of games lead to increases in pro-social behaviors, whereas others do not [3]. If researchers do find a link between playing specific game genres and an increased rate of problem gaming, they would then need to determine whether this is simply because certain types of people tend to play certain types of games (e.g., maybe people with poor impulse-control like to play one type of game, whereas people who have normal impulse-control usually play other types of games) or if there is something about some game genres that make them riskier.

What type of game characteristics might predict greater amounts of problem playing? One factor that we know is related to the motivation to play video games is the reward that the game provides. All video games are rewarding in some way (why else would you play?), but some provide different types of rewards than others. Some games are very social, and so part of the reward is in forming relationships with others; other games are single player, and thus the rewards are more in terms of individual achievements. Some games are competitive, and thus part of the reward is in beating an opponent; other games are cooperative, and part of the reward is in the whole team achieving the goal. All in all, the more rewarding an individual finds a particular game (keeping in mind that different people find different things rewarding), the more motivated they will be to continue playing.

Beyond *what* rewards are given, another potentially important factor is *how* the rewards are given.

Most animals, including human beings, persist more strongly in behaviors when rewards are given at somewhat random intervals. In other words, people will show the strongest motivation to keep on tasks when there is no way to determine whether the next action will be the one that leads to a reward. Some types of video games motivate players to continue playing in exactly this manner. For instance, in certain games, you never know whether the next monster will drop a valuable sword that you can pick up, or whether the next block that you dig up will expose a valuable diamond. Ultimately, the more players have the feeling that they are “close to” the next reward, the less they will be willing to stop.

As you can see, this is a very complex issue and there are still many things scientists have yet to determine. The most valuable advice for the moment – and this is true for both kids and adults – is simply to always stay aware of the effects that games are having on your life. Do not pretend that games have no effects, because if that were true, then you would think that they were boring. Also, you should not assume that games can only have positive effects. This is why choosing your games carefully and paying attention to how they make you feel and think matters.

## REFERENCES

1. American Psychiatric Association. 2013. *Diagnostic and Statistical Manual of Mental Disorders*, 5th Edn. Arlington, VA: American Psychiatric Publishing.
2. Gentile, D. A. 2009. Pathological video game use among youth 8 to 18: a national study. *Psychol. Sci.* 20:594–602. doi: 10.1111/j.1467-9280.2009.02340.x
3. Gentile, D. A., Anderson, C. A., Yukawa, S., Ihori, N., Saleem, M., Ming, L. K., et al. 2009. The effects of prosocial video games on prosocial behaviors: international evidence from correlational, longitudinal, and experimental studies. *Pers. Soc. Psychol. Bull.* 35:752–63. doi: 10.1177/0146167209333045
4. Gentile, D. A., Choo, H., Liau, A., Sim, T., Li, D., Fung, D., et al. 2011. Pathological video game use among youths: a two-year longitudinal study. *Pediatrics* 127:e319–29. doi: 10.1542/peds.2010-1353
5. Green, C. S., and Bavelier, D. 2012. Learning, attentional control and action video games. *Curr. Biol.* 22:R197–206. doi: 10.1016/j.cub.2012.02.012

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## REVIEWED BY:



Alif Daniel, 11 years old

I am a Standard 6 student in Kubang Kerian 3 National School in Kota Bharu, Kelantan, based in the North East coast of Malaysia. I have four brothers and two sisters. I love collecting antique coins and stamps from the “old world.” During my free time between my piano and violin lessons, I read Detective Conan Manga comic books as well as general science books. I am the Vice President of the first Neuroscience Club in Malaysia in this very school established 3 years ago. I play Badminton and volleyball. I am a School Perfect and a Boys Scout which is fantastic!

## AUTHORS



Douglas Gentile

Dr. Douglas Gentile is a developmental psychologist who studies how the media can affect children. He is best known for his work on the positive and negative effects of video games, but also does research on television, music, movies, and the Internet. See? Being a scientist is a pretty awesome job!



Shawn Green

I am generally interested in how people learn to perform new tasks and how they acquire new abilities from experience. I use a lot of video games in my research because playing certain types of video games seems to produce really large changes in both the brain and behavior. When I am not in the laboratory, I like to do almost anything competitive – from playing video games to playing sports.