Esports: Children, stimulants and video-gaming-induced inactivity

John T Holden,1 Anastasios Kaburakis2 and Ryan M Rodenberg1

1Department of Sport Management, College of Law, Florida State University, Tallahassee, Florida and 2John Cook School of Business, Saint Louis University, St. Louis, Missouri, United States

VIEWPOINT

Imagine a child who plays video games for 12–14 h a day and sleeps just 4 h a night. This is the life of some adolescents and aspiring professionals in the field of esports. Esports are competitive video game contests and they present an emerging public health risk on three axes: the age of participants, the use of stimulants and inactivity. The medical community has previously expressed concerns related to excessive video game consumption observing, for example ‘space invaders wrist’1 among other potential side effects associated with video games. But, esports are not local competitions held at shopping malls, as video game tournaments once were. They are now commercial pursuits with sponsorships for top performers, sold-out stadiums for live-viewing, venture capital-like investments and a tethered wagering market expected to reach US$23.5 billion by the year 2020.2 Indeed, the world-wide esports audience (participants and viewers) is anticipated to be upwards of 435 million people by 2019.2 A 2017 article from ESPN reported that amongst five popular esports titles the average age of professionals was between 21.2 and 25.5.3 Beyond roots in South Korea, esports teams are now emerging on a growing number of collegiate campuses, with some schools handing out scholarships to prized recruits in the same way that they have courted football or basketball phenoms in the past.2 Although often discussed in the singular, esports more accurately describe a variety of different competitive video game titles in a manner like the Olympics is a conglomeration of many different sports. Professionalisation of esports has in many ways legitimised excessive consumption of an activity that was long thought to be best consumed in moderation.1

The first medical concern that has emerged in the world of both professional and amateur video-gaming is physical and mental exhaustion. The burn-out associated with competitive video-gaming is associated not only with the playing of games but also with the streaming of games, as some Twitch streamers have been reported to occasionally stream for periods of 24 h or longer to satisfy the appetites of the site’s subscribers who follow and, in some instances, pay for content from streamers.4 The demands of having a successful streaming career, as well as the demands of being a successful esports professional, lead to esports being dominated by athletes that are typically younger3 than major professional sports stars and more akin to precocious gymnasts who have historically dominated at the Olympics, only to retire shortly after reaching the age of majority. It is not uncommon for esports professionals to retire from competition at an age as young as 19,2 occasionally choosing to pursue a career streaming or coaching.

Fueling the marathon gaming sessions of some pros and amateurs are both prescription and over-the-counter stimulants. The use of stimulants such as dextroamphetamine in esports has emerged as a concern, with one professional stating, ‘we are all on Adderall’.2 To combat this reality or perception, some leagues have begun to implement drug testing protocols for competitors in advance of competitions. In addition to the use of prescription stimulants, the use of non-prescription stimulants has created a grey market cottage industry of supplements marketed to professional and want-to-be professional gamers. The variety of drugs accessible without prescriptions that are being marketed to gamers largely promise to enhance focus; some are comprised of caffeine and B-12, whereas others are composites of herbal ingredients.

In some ways, esports are like many traditional sports – there are teams, someone wins, and there is uncertainty of outcome. But in other ways, esports differ markedly from traditional sports in that the athletes manipulate avatars on computer screens against opponents instead of physically confronting opponents on a field, court or rink. Both the similarities and differences raise potential health concerns. Concerns regarding the use of stimulant medications in professional esports is a major concern from a contest integrity perspective, but the recreational use by esports enthusiasts, players and streamers, of both prescription and over-the-counter stimulants to sustain marathon gaming and streaming sessions or improve focus are actions that parents and medical professionals should investigate and pre-empt. In addition, in an era of concussions, heightened awareness and concern over safety regarding many traditional sports,5 including football, hockey and cheerleading,6 there is a danger in going too far in the other direction and encouraging children to avoid physical activities that may result in an injury.

Out of an abundance of caution, parents may be content with children engaging in video-gaming as a pastime; however, they may unknowingly be opening the door to gaming abuse and overdose-related risk factors, several of which have been associated with major conditions. Brain imaging research findings show that stimulating the brain via screens and gaming is as dopaminergic (dopamine activating) as sex, gambling and addictive substances, by flooding the brain’s pleasure centre with multiple stimuli.7 A growing number of clinical research studies correlate screens and gaming abuse and overdose with disorders like attention deficit hyperactivity disorder, addiction, anxiety, depression, increased aggression and psychosis (also referred to as game transfer phenomena or ‘Tetris effect’).3 Further, recent magnetic

Correspondence: Dr John T Holden, Department of Sport Management, Florida State University, 1014 Tully, 139 Chieftan Way, Tallahassee, FL 32306, USA. Fax: +1 850 644 0975; email: jtholden@fsu.edu

Conflict of interest: None declared.

Accepted for publication 20 February 2018.
resonance imagings and functional magnetic resonance imagings show that excessive screen and gaming exposure can neurologically damage a young person’s developing brain similarly to cocaine addiction.7

The emergence of top-level esports is a reality, but there is limited awareness and seemingly little willingness to prepare for the health-related challenges. Specific to Australia, a joint survey conducted by Bond University and the Interactive Games and Entertainment Association estimated that: (i) 98% of homes with children have video games; (ii) 68% of the population plays video games; and (iii) 88 min is the average time spent playing video games daily.8 Many students or a classmate9 already have a prescription for methylphenidate or dextroamphetamine. Failing access from personal medicine cabinets, specialised gamer elixirs are available for purchase over the internet. Considering the potentially destructive cocktail of esports combined with stimulants and inactivity, it is imperative to encourage more exercise and physical activity programs for esports enthusiasts.10 Absent proactive measures, esports will face their own concussion-like health crisis.

References