

# HOW TO UTILIZE THE RESEARCH ABOUT CHILDREN AND SCREEN TIME

by Benjamin Rosen, Ph.D.

Children and teenagers are consuming digital media at ever-increasing rates. For instance, as of 2016, about 75% of teenagers owned a smartphone, 76% were connected to at least one social media site, and 80% of households had devices used to play video games (AAP, 2016a). Further, approximately 90% of children engage in some form of video game play, including 97% of adolescents aged 12-17 (APA, 2015). In contrast, for many parents, the only option for screen time during their own childhood was the television, maybe an early-generation video game console and possibly a family desktop computer. Given these options, it was reasonable for their parents to limit screen time to an hour or two per day. It is thus understandable why parents today may be taken aback with the seemingly ubiquitous nature of smartphones, smartwatches, tablets, video game systems, etc. Total screen time can be difficult to measure for today's youth, but very often far exceeds what parents consumed at similar ages, with current average screen time across studies ranging between two hours to four-plus hours

per day (Gingold, et al., 2014; Lauricella et al., 2015; Przybylski & Weinstein, 2017).

This proliferation of digital media use has coincided with a rise in child and adolescent mental health concern over the past several years. For instance, between 2009 and 2015, there was a 33% rise in teenagers exhibiting high levels of depression symptoms, a 12% increase in reported suicidal thoughts or attempts and a 31% increase in the proportion of teenagers who committed suicide (Twenge, et al., 2018). Understandably, this has raised many parents' fears about the effects of seemingly constant connection to digital media and has spawned several popular media articles with headlines like "Smartphones, Teens, and Unhappiness" from the *Harvard Gazette* in June 2018.

However, concerns about the negative effects of screen time on youth are often over-generalized and sensationalized. This leads many well-meaning parents to overestimate the negative effects, underestimate the benefits of digital media use and conclude that there will

be dire consequences if they do not dramatically reign in their child's screen time. This is a recipe for repeated conflict between parents and children, all of whom are digital natives and do not know an existence without such technologies. From an historical perspective, there is a long-established pattern of one generation fearing the repercussions of new technologies on the next generation. In fact, many concerns voiced in past generations sound strikingly similar to concerns raised by parents today. For instance, *The New York Times* ran an editorial in 1887 warning about the effect of the telephone, and it read "we will soon be nothing but transparent heaps of jelly to each other." In another example, *Gramophone* magazine published concerns in 1936 that children had "developed the habit of dividing attention between the humdrum preparation of their school assignments and the compelling excitement of the loudspeaker." The point here is that while changing technologies will undoubtedly have some sort of an effect on us, these effects can often be overstated during the initial emergence of the new technology.

This is not to deny the real links between certain types of digital use and specific negative outcomes. However, it is important for parents to become educated about what the research says about possible adverse effects and benefits of screen time, and to consider important nuances and contextual factors. This process of separating the truth from fiction (or in many cases, embellishment) will hopefully lessen parents' fears and allow parents to use their knowledge to identify actionable steps to reduce conflict and promote well-being in the digital age.

## WHAT THE RESEARCH SAYS ABOUT COMMON PARENTAL CONCERNS

Typical parental concerns about the adverse effects of screen time involve fears of social skills deficits, worsening physical and mental health and increased aggression (particularly related to playing violent video games). The following section will review what the research literature says about each of these concerns, highlighting evidence for specific risks. However, contextual factors that mitigate risk will also be discussed, as will potential benefits of digital media use in these domains.

### Displacement theory

It is important to first explore an underlying issue that is common to most parental concerns. It involves what the research literature has termed "displacement theory," referring to the premise that time spent consuming digital media will *displace* time spent on healthier activities. However, despite some early research supporting this notion, more recent research is much more mixed (Przybylski & Weinstein, 2017a; UNICEF, 2017). For instance, studies have suggested that the children who spend large amounts of time on screens would not necessarily be spending that time engaged in physical activity if only their access to screens was taken away. Instead, physical activity and screen time may operate mostly independently of each other, and other variables may more likely contribute to rates of physical activity (or lack thereof). These other variables include access to safe playgrounds, as well as parental encouragement and resources. Due to these factors, some children may already be predisposed to physical activity, and some of those children may

in turn be spending more time on screens (UNICEF, 2017). Similarly, one study revealed that teenagers who have more face-to-face interaction with peers also clocked more time using social media (Twenge, et al., 2018). Based on these results, it would be difficult to claim that social media usage was directly displacing face-to-face social engagement.

### Concerns about impact on social skills

Still, many parents harbor concerns that communicating digitally may negatively impact their children's ability to develop. While the research suggests that for any particular adolescent, total screen time does not displace face-to-face social interaction, in-person social activity does appear to have decreased for teenagers as a whole over the past several years. And this is concurrent to an increase in time spent on screens (Twenge, et al., 2018). The question here is to what degree this harms adolescents' social skill development. As noted by UNICEF in their 2017 report "The State of the World's Children: Children in a digital world," some experts believe that although the medium for social interaction has shifted (from solely in-person to a mix of in-person and digital), the quality of these interactions has not diminished. To this point, several studies have suggested that digital forms of communication do not dictate the quality of interaction and relationships. Rather, the quality of the pre-established relationships often determines what effect using digital forms communication will have. For example, research suggests that for parents and children who were already close, using text messaging as one form of interacting increased the overall level of communication between these parents and children.

Conversely, for parents and children who were not close, using text messages to interact decreased their overall level of communication (Matsuda, 2005; UNICEF, 2017).

Similar findings are seen regarding peer connectivity. Using digital-based interaction, such as social media, can actually increase social connectedness and strengthen social support networks for adolescents (AAP, 2016a; Przybylski & Weinstein, 2017; UNICEF, 2017). However, this is not the case for those who have weak social networks to begin with and engage in more passive social media consumption (e.g., scrolling). These adolescents report more feelings of loneliness and less feelings of happiness (UNICEF, 2017).

Children and teenagers who regularly play video games have long carried the stereotype of being basement-dwelling shut-in. However, it is estimated that around 70% of these games have a strong social component to them (Granic, et al., 2014).

The take away message is that for children and teenagers who already have well-developed social skills, using digital media to interact does not harm their relationships or social development. In contrast, if a child or teenager does not have strong social skills or an in-person social network, that child or teenager should be encouraged to continue exploring ways to build these skills and to balance time towards that goal with their screen time.

### Impact on physical health

Several studies have shown links between sedentary screen time (e.g., TV watching, video games) and risks for poor physical health, such as obesity. However, these

studies are often correlational and not causal, meaning that it is not clear if sedentary screen time is actually causing poorer physical health outcomes. This also comes back to the issue of displacement theory. For example, it is possible that children and adolescents who are already predisposed to be inactive and at-risk for poor physical health, have chosen screen time for leisure; whereas in past generations they would have had a more analogue but similarly sedentary activity such as reading or stamp collecting.

Thus, while children and adults alike need consistent physical activity to promote good health outcomes, the research suggests that focusing on reducing screen time alone may not be very effective. Instead, it may be more useful to actively promote physical activities (e.g., joining a gym as a family, playing tag, enrolling in gymnastics or martial arts, etc.), and to target additional barriers to getting regular physical exercise (e.g., access to parks and playgrounds, parental encouragement and resources, etc.).

The impact of screen time on sleep is another issue that has received a lot of attention. Specifically, research shows that electronic media use close to bedtime can interfere with an individual's ability to fall asleep. As a result, the American Academy of Pediatrics (AAP) recommended in 2016 that children do not consume digital media for at least one hour before bedtime, and that they do not keep electronic devices in their bedrooms.

### **Concerns about emotional well-being**

As already stated, there has been a documented increase in adolescent depression, suicidal thoughts

and suicide attempts over the past five to ten years. There are some suggestions that this may be related to increased screen time, particularly social media use (e.g., Goldfield et al., 2016; O'Keeffe, et al., 2015; Twenge, et al., 2018). One study that has received a lot of attention in the popular press indicated that adolescents were 13% more likely to experience high levels of depression symptoms if they used social media at least once per day (Twenge, et al., 2018). This study also suggested that adolescents were 34% more likely to have at least one "suicide-related outcome" if they used an electronic device three or more hours per day, compared to two or fewer hours per day. And they are 66% more likely to have at least one suicide-related outcome if they use an electronic device five or more hours per day, compared to just one hour per day. Suicide-related outcomes include a) significant sadness or hopelessness; b) seriously considering suicide; c) having a suicide plan; and d) making a suicide attempt.

While these statistics are alarming and caused some troubling headlines, there is a lot more to the story. First, as with other studies, this one is correlational and does not allow for claims of causality. For instance, it is quite possible that adolescents who are already prone to suicide-related outcomes might isolate more and spend more time on their electronic devices. Secondly, the time spent on social media was only related to higher depression symptoms for adolescents who did not engage much in face-to-face socializing. This finding is similar to other studies which have found that it is the older adolescents who passively use social media that evidence lower life satisfaction, whereas life satisfaction does not decline if they are interacting with

others and posting their own content on social media (AAP, 2016a). Finally, another important qualifier to the results of this study is that the correlation between time spent on social media and depression symptoms was only evident for female participants, not males.

Common parental concerns about video games often relate to the impact on physical health or aggression, however, playing video games may also relate to mental health. While it is likely not surprising to parents that video games elicit positive emotions, it may surprise some to hear that there are studies suggesting that playing video games may be an intentional (and effective) strategy for emotion regulation. However, it is only a healthy coping strategy if it does not feed into an avoidance cycle that could then result in poorer outcomes (Granic, et al., 2014). For instance, one study showed that more time spent playing video games was associated with more severe depression symptoms in a sample of obese adolescents (Goldfield et al., 2016). However, as the authors note, this study was comprised specifically of overweight or obese adolescents, and so it is possible that time spent playing video games crossed the threshold from adaptive strategy for eliciting positive emotions to an avoidant behavior that interfered with engaging in other healthy behaviors, such as exercise.

The conclusion here is that context matters. It would be an overstatement to claim that the more time children and teenagers spend on video games and social media will automatically lead to more depression symptoms. Instead, the research has not supported a direct link between screen time and depression symptoms for most children and adolescents. This

is further supported by recent research published by the Adolescent Brain Cognitive Development (ABCD) Study, which is a multisite research program investigating the relations between various experiences such as screen time and brain development among adolescents. Preliminary results did not show a strong association between screen time and internalizing symptoms such as depression (Paulus, et al., 2019). However, based on prior research, more screen time may lead to an increased risk of depression symptoms specifically for a subset of youth. This includes those who use video games as an avoidant strategy as well as teenagers, particularly teenage girls, who passively consume social media without balancing it with face-to-face social interaction.

As the risks associated with screen time can be mitigated to some degree, and that there are also potential benefits, some researchers have explored what they've termed the "Goldilocks Hypothesis" with regard to screen time and psychological well-being. This approach has been touted by UNICEF in their 2017 report on "The State of the World's Children." A major study of 15-year-olds conducted in the United Kingdom, published in 2017, showed strong support for this hypothesis. In this study, the researchers identified "inflection points" of total screen time, below which screen time was beneficial or neutral, above which it was demonstrated to be detrimental for psychological well-being. These inflection points differed by type of digital media consumption and whether the consumption took place on a weekday or weekend (Przybylski & Weinstein, 2017a).

For example, the researchers found that there were no

negative effects on psychological well-being of playing video games for 1 hour and 40 minutes on the weekdays, or 3 hours and 35 minutes on the weekends. For smart phone use (social networking, texting), the inflection point was 1 hour and 57 minutes on the weekdays, and 4 hours and 10 minutes on the weekends. Clearly, these activities are more likely to interrupt healthy functioning during the school week, which is why the inflection points are so much higher for weekend days. However, it is also important to point out that even when screen time exceeds these inflection points, the detriments to psychological well-being were relatively minor and not as influential as the benefits that would be gained from eating breakfast regularly or getting regular sleep.

### **Impact on aggression**

The research on violent video games and aggression is equally as complicated as the research about how screen time relates to social skills and physical or mental health. First, as documented by the American Psychological Association (APA) in their 2015 resolution on violent video games, there are some clear links between exposure to violent video games and aggressive behavior (APA, 2015; Greitemeyer & Mugge, 2014). However, just as with other researched concerns, this statement comes with important caveats. First, the term “aggression,” at least in this context, is not meant to be used interchangeably with “violence.” Although the research supports links between violent video games and aggressive behavior, thoughts and emotions, this does not mean that it always leads to violence. For instance, the APA resolution specifically

notes that there is “insufficient” evidence that playing violent video games leads to “lethal violence,” such as is sometimes claimed after a mass school shooting.

Another major caveat is that violent video games are not all created equally. Many video games that include violence also include prosocial aspects, such as sharing, helping and working together. This could be in the form of working together on a team or squad, even if the objective involves violence (e.g., killing). It could also involve working independently and towards a violent objective, but for a prosocial reason (e.g., protecting a community). Additionally, some games involve competition among players, but the act of playing involves positive social interactions (e.g., communicating over headsets), which also fits the definition of prosocial. Importantly, research suggests that having prosocial aspects often mitigate the effects of violent video games on aggression (Greitemeyer & Mugge, 2014).

Adding to the complexity of this research, the new ABCD Study findings revealed an association between screen time in general and time spent on social media in particular with externalizing behaviors (Paulus, et al., 2019). This association was not found specifically for time spent playing video games. Since the finding regarding social media use and externalizing behaviors is relatively unique in the literature, more research is needed to replicate this finding, explore if this is a causal relationship and better understand the associated contextual factors.



## TIPS FOR PARENTS

The intention of this article is for parents to feel as though some of the pressure is lifted when thinking about the consequences of allowing a child to have screen time. Even though there are some specific things to be concerned about with screen time, the situation is not as dire as some fear. In fact, there are many possible benefits to integrating digital media use into a child or adolescent's life. Admittedly, though, it will require effective planning for parents to maximize these benefits while mitigating the potential risks. This final section will integrate the information from the research literature to produce specific recommendations for how to manage expectations around screen time.

### Shift the focus away from total screen time

The AAP and UNICEF both advocate shifting away from a strict focus on total screen time, and instead encourage parents to promote balancing screen time with other important activities for health and well-being. This shift away from simply limiting total screen time is echoed by the ABCD researchers. They stated that the accumulation of research to date does not support the notion that screen time is “simply ‘bad for the brain’ or ‘bad for brain related functioning’” (Paulus, et al., 2019, p. 151). Instead, the researchers emphasize that context, such as the type of digital media consumed, is important to consider.

### Encourage physical activity

For promoting a healthy lifestyle, it will be more effective to focus on encouraging healthy behaviors (e.g., physical activity), instead of simply restricting

screen time. You could enroll your child in an organized sport, dance, gymnastics, etc. or plan regular physical activities as a family such as camping, climbing or trips to the playground.

### Promote opportunities for face-to-face social interaction

The research reviewed in this article suggests that interacting with peers through digital media may not be as harmful as some parents fear, and in fact can have benefits to feelings of connectedness. But this is typically only true for those who also have strong face-to-face social networks and well-developed social skills. Thus, it is important that your child balance digital interactions with face-to-face socializing.

- If your child is not seeking face-to-face peer interactions on their own initiative, you can pursue or encourage extracurricular clubs/activities, schedule play-dates (for younger children), etc.
- If your child appears to be withdrawn socially and is resistant to engaging in peer interaction, psychotherapy may be beneficial to explore and address the source of their resistance.
- If your child is interested in socializing face-to-face but is hindered by under-developed social skills, he/she may benefit from participating in a social skills group.
- It's also important to promote face-to-face interactions with family members. This could be accomplished through planning non-digital family time, such as meals, game nights, nature walks, etc.

### **Approach social media use based on your adolescent's needs**

- For the adolescents who already have well-developed social skills, the research suggests that using digital media to interact does not harm their relationships or put them at higher risk for issues such as depression. So rather than focusing on their frequency of social media use, focus on teaching them about internet safety, how to interpret messages they come across and how to be a good digital citizen.
- However, a teenager who does not have well-developed social skills or a strong in-person social network may be at risk of depression symptoms. To mitigate this risk, consider the specific strategies listed in the previous section.

### **Promote healthy video game play**

There are possible cognitive and emotional benefits to playing video games. However, if video game playing is used as an avoidant strategy at the expense of healthy behaviors such as face-to-face interaction, maintaining school work, and exercise, it can also lead to more negative outcomes. Thus, it is important to make sure that a child does not forgo these important activities for the sake of excessive time playing video games.

- Parents of children who want to play violent video games should explore what prosocial aspects are included in the gameplay, as they often mitigate the risk of violent video games leading to aggression. Parents may want to restrict games that do not contain any prosocial elements.

- However, for any game with violence, even if there are prosocial elements, it is still important to engage with your child and talk about the differences between the violent gameplay and violence in real life.

### **Set parameters to promote healthy sleep patterns**

- The AAP recommends that parents should promote a healthy sleep-routine by encouraging their children to cease digital media consumption one hour before bedtime.
- Children should also not keep electronic devices in their bedrooms. This may be more flexible for older teenagers, who need to learn on their own how to inhibit use of digital media after bedtime, despite access to it. One strategy for this would be to allow the teenager to keep devices in their room on the weekends, and then slowly introduce it on weekdays as the teenager displays an ability to inhibit digital use after bedtime. Another approach would be to start with one device (e.g., a tablet or TV screen) in the room, and then allow more devices as the teenager builds success with self-managing their device use.

### **Pay attention to family processes that are related to screen time**

- Research suggests that the association between high levels of screen time and negative outcomes may be partially due to the fact that children who spend more time on screens are also more likely to have a lower level of connectedness with their caregivers. Thus, parents should focus on building



and maintaining a healthy connection with their children. Doing this will also give parents an avenue to discuss the media the child is consuming.

- Try initiating an interaction that the child then gets to direct. Allow the child to pick the activity or drive the conversation. In these situations, because the focus is on connection, it will not be helpful to use this type of interaction as a “teaching moment.” Just be interested.
- Research has long supported the notion that children often learn behaviors and habits through modeling, particularly from their caregivers. Thus, parents should take care to model the digital media consumption patterns that they want to see from their children. For instance, if you want mealtime to be a device-free zone, you need to adhere to this just as strictly as the children.
- Finally, while parents are encouraged to actively be a part of their children’s digital media consumption and to set specific rules and boundaries, it’s

important to keep in mind that parent’s influence on their children’s digital media use decreases as the child gets older. Thus, parents of older teenagers may not find it very effective to try to enforce strict rules around digital media use. Instead, focus on communicating your concerns to your teenager and continue to enforce essential boundaries (e.g., around online safety).

Parents are encouraged to develop and communicate clear expectations for their family’s media usage, which should be based on their family’s unique situation and needs. To this end, the AAP has developed a web-based tool for creating a “Family Media Plan” and a “Media Time Calculator” ([www.HealthyChildren.org/MediaUsePlan](http://www.HealthyChildren.org/MediaUsePlan)). The family media calculator takes a family’s factors into account (e.g., the child’s age), and provides suggestions for specific rules around media use that can be tailored to fit a family’s situation and needs. Examples of these rules include whether screen time is allowed during homework, and if there is regular dedicated time for non-digital family activities.

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