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## Is Screen Time Bad for Children's Mental Health?

When does screen time become harmful for adolescents? Three experts break down the research



Research shows a link between screen time and unhappiness in children. PHOTO: ISTOCKPHOTO/GETTY IMAGES

By Elizabeth Seay and Jeanne Whalen

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Many parents are concerned about how much time their children spend on cellphones, Xboxes and other digital media. Some experts say they should be: There is a growing body of research showing an association between unhappiness and the time adolescents spend on digital media.

What is less clear is whether screen time is causing mental-health problems or if children with worse mental health spend more time with digital media.

To assess the research, we went to Jean Twenge, author of the book “iGen: Why Today’s Super-Connected Kids Are Growing Up Less Rebellious, More Tolerant, Less Happy—and Completely Unprepared for Adulthood—and What That Means for the Rest of Us”; Michael Rich, founder and director of the Center on Media and Child Health in Boston and an associate professor at Harvard Medical School; and Cara Booker, research fellow and acting graduate director at the University of Essex in the U.K., who has studied the effects of social-media use on children and adolescents.

Edited excerpts follow:

**WSJ:** *What does the evidence tell us about the links between screen time and children's mental health?*

**DR. RICH:** Perhaps the question should be whether screen *use* can be problematic for mental health. In an era when educational technology has deeply penetrated our schools—even preschoolers are handed tablets now—there are screens in all public places, and virtually everyone has interactive screen media at home and in their pockets, the concept of screen time as something that could be controlled is obsolete.

With one exception, screen time is less important to mental health than screen content and the context in which it is consumed and created. It is what children and adolescents are exposed to and encouraged to do with screens that helps or harms.

Where screen time becomes an issue is when it is displacing more productive or meaningful activities. For some young people, screen time can become compulsive, taking up more of their waking hours until they are functionally impaired. My colleagues and I describe this as Problematic Interactive Media Use, or PIMU, and over the past five years, we have seen a dramatic increase in young people whose gaming, social media, pornography or information-bingeing has resulted in sleep deprivation, school failure, relationship problems, anxiety and depression. As a result, we have founded a clinic at Boston Children's Hospital for children and adolescents with PIMU and other media-related disorders.

**DR. BOOKER:** Most of the research that I focus on looks at social-media use and mental health, and unfortunately the findings are mixed. There are some studies that find either positive or no effects of social media. Others find negative effects. Much of this

debate surrounds the question of time versus content. Some studies look at time and find negative effects, while others examine content and find lesser effects.

**DR. TWENGE:** Several large studies show that use of digital media beyond two hours a day of free time, and especially beyond four hours a day, is correlated with more depression and unhappiness in teens. Several longitudinal studies show this, as well, with children, teens, and young adults who spend more time on digital media later showing more mental-health issues. Sheer amount of time with screens, not just content, does matter, probably because those higher levels of use are enough to displace time spent on more beneficial experiences such as face-to-face interaction. It also is well-documented that digital media can displace or disrupt sleep; that alone could explain the link with compromised well-being.

Many of the mixed findings in the field are explained by two factors. First, some find links between positive experiences online and positive well-being, which isn’t surprising and isn’t the same thing as time spent online. Second, most studies don’t control for level of face-to-face social interaction. The same teens who spend more time with their friends in person are often those who are active on social media, so if that isn’t controlled for it can wash out the effect on well-being. We found, for example, that the most unhappy teens were those who spent more time than average with digital media and less time than average on face-to-face social interaction.

**WSJ:** *What are the main weaknesses of the research so far?*

**DR. BOOKER:** We haven’t fully explored the mechanisms through which screen use

and children’s mental health are related. As has been mentioned, sleep is a large part of it. But there are other factors such as self-esteem, cyberbullying, body image, etc. that haven’t been fully addressed. I also don’t think that we have explored gender, cohort or ethnic differences enough and whether those exist. For example, in my research we found a relationship between

social-media use and mental health among girls but not boys. [Ten-year old girls who used more social media were at higher risk of poorer well-being by age 15, according to Dr. Booker’s analysis of the Understanding Youth survey of 9,859 10- to 15-year-olds, 49% of whom were female.]

Is screen time just displacing any activity or specific ones that may lead to worse well-being? Also, if we are going on the broader topic of screen time, how do these interact with each other to affect mental health? Many young people multitask

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Jean Twenge PHOTO: SANDY HUFFAKER, JR.

and use more than one screen to do different things. Is this substantially worse than those only using one screen at a time?

One of the hardest questions to answer is does screen time affect children’s mental health, or do children with varying levels of mental health interact with screens differently?

**DR. RICH:** Mental illnesses are diverse, affect different individuals in different ways, and in most cases result from the influences of many factors from genetics to environment to events in the individual’s life. If we don’t measure many factors affecting the individual, we are missing many pieces of the puzzle. This is exactly why



Michael Rich PHOTO: BOSTON CHILDRENS HOSPITAL

the data are mixed.

Jean is right, there are correlations between screen time and adverse mental-health outcomes. What we

don't know is whether screen time or screen use contributes to those outcomes, whether they are the result of abnormal psychology, or are an indicator of dysfunction.

**DR. TWENGE:** We definitely need more studies that measure face-to-face social interaction—that is a crucial moderator for well-being effects.

Although existing studies have been able to control for gender, ethnicity, and socioeconomic status, it would be really useful to know if both digital media use and low well-being were linked to a certain type of parenting style, or not.

Most important, we need more experimental random-assignment studies to determine causality (does screen time cause low well-being, or does low well-being cause screen time?).

Overall, though, doing experiments will be difficult. I got interested in tech and well-being in the first place because iGen (those born after 1995) are the first generation to grow up with smartphones and are also much more likely than teens five to 10 years ago to be unhappy and depressed. It isn't possible to show a connection between these two things experimentally because you can't randomly assign people to grow up at different times. Experiments can be done, but they don't capture the whole of the generation's experience.

If, for example, you did an experiment where you asked iGen teens and young adults to lower their digital media use [vs. not], they might feel withdrawal that could actually lower well-being. This type of experiment also won't capture the experience of teens who limit their own digital media use but are surrounded by teens who don't—so even if they wanted to interact face-to-face they have no one to do that with.

*WSJ: In terms of mental health, how does social-media use compare to playing computer games or, say, Instagram to Snapchat?*

**DR. TWENGE:** At least in the large data sets I'm familiar with, large amounts of time spent on any digital-media platform are linked to more unhappiness and depression. There's some variation in the size of the correlations for social media vs. gaming vs. texting, but not much.

**DR. BOOKER:** I think that with the advancement of computer games, an element of social media is included as many players can play together at the same time and communicate, and gamers are some of the most popular vloggers on YouTube.

Another weakness of current research is that we haven't been able to look at differences between sites, partly due to rapid changes in what is popular among young people and partly because young people often have profiles on many sites and use them in conjunction with each other. Perhaps one question of interest is do they have different friends/contacts on the different sites and if so, are some mainly face-to-face friends and the others not?

**DR. RICH:** It is the type of site and the type of kid that matters. We are seeing that gaming PIMU is more prevalent in boys, social-media PIMU more prevalent in girls, and that both problematic pornography use and information-bingeing [watching endless videos, etc.] are pretty evenly split gender-wise.

One study found that use of ephemeral social media like Snapchat was correlated with greater happiness, while more lasting social-media use has been linked to higher rates of anxiety and depression.

*WSJ: Do screens and social media affect girls differently? And what differences have we seen among age groups?*

**DR. BOOKER:** My research showed that girls who interacted more with social media at a young age (10 years old) had worse well-being by the age of 15 than young girls who interacted less.

**DR. RICH:** There are distinct differences between boys and girls, particularly in regard to gaming and social media. This is in part biology and in part socialization. Boys compete by seeking to prevail, girls by seeking acceptance. Boys can get immersed in gaming because no matter how well they do the games are designed so that they can always do better—and there is always someone, somewhere in the world, who can best them. Girls seek acceptance in a competitive way on social media, which can contribute



Cara Booker PHOTO: SIMON ROGERS

to anxiety because there is always someone who takes better vacations, has nicer outfits or a better-looking boyfriend.

Age differences are significant because of the dramatic changes in neurodevelopment that occur throughout childhood into

adolescence into adulthood. Cognitive psychology shows that children under the age of about 7 cannot recognize persuasive intent or reliably distinguish fantasy from reality. What does that mean for screen use?

Executive functions such as impulse control, future thinking, and what we used to call the superego or conscience don't fully develop until the mid- to late 20s. This is why kids get into trouble with sexting, cyberbullying or documenting their own misdeeds.

**WSJ:** *Are there positive aspects to social media?*

**DR. RICH:** Absolutely! I believe that social media used in a healthy balance with face-to-face human interaction and other real-life activities and used as a tool with which to be authentic, human and vulnerable, rather than as a self-marketing tool, can be an instrument of peace. When a young person who has been connecting with a young person in another country is asked to take up arms against him or her, I believe that he or she is less likely to do so.

**DR. TWENGE:** I think social media can be positive, but it often isn't. Social media is the most positive when people use it to set up face-to-face social interaction and to organize social movements.

**WSJ:** *Is there enough firm evidence of risk from too much screen time that parents, schools and health-care professionals should act?*

**DR. RICH:** Again, I think it is screen use rather than screen time that is the issue, until the screen time displaces sleep, homework, or healthy relationships with family and friends. That said, we should teach our children that these devices and apps are tools to be used in mindful, healthy and balanced ways. We should observe our children, patients, students and ourselves and, if we detect impairment or dysfunction, act to correct it.

**DR. BOOKER:** Current evidence suggests there is a relationship between increased screen time and poorer mental health. However, this doesn't mean we can just say use less. As both Rich and Jean say, poorer mental health in young people isn't only caused by screens, and a reduction in screen time may not have any impact on mental health. Screen behaviors are also important. This is a multifaceted issue that will need to be addressed through multiple avenues.

Some of the things we can do in the immediate future are increase digital literacy among young people and have parents model good practice with screen use.

**DR. TWENGE:** I do think that limiting digital media time can be beneficial, especially if it's cutting down excessive use. The research points to a limit of 2 hours a day or less of leisure time spent on digital media. It's also very clear that phones and sleep aren't a good combination, so phones should be shut down at least 30 minutes before bedtime.

*Ms. Seay is a Wall Street Journal news editor in New York. Email her at elizabeth.seay@dowjones.com. Ms. Whalen is a former Wall Street Journal deputy bureau chief. Email: reports@wsj.com.*

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