Internet Addiction in Children and Adolescents

Risk Factors, Assessment, and Treatment

Kimberly S. Young
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INTERNET ADDICTION IN CHILDREN AND ADOLESCENTS
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Editors
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How young is too young for children to go online? How much time is too much for children to spend online? What are the social implications for children who spend hours in isolation in front of screens? Will they become obese due to the lack of exercise because they spend hours playing video games with little real physical play? How will parents manage all these digital devices in their children’s lives? What role do teachers play when they are encouraged to use technology in the classroom despite studies that have found these tools to be addictive among students? *Internet Addiction in Children and Adolescents: Risk Factors, Assessment, and Treatment* is the first book to address the new concerns people have about children who have early and easy access to the Internet and digital technologies.

Since the publication in 2010 of our previous book, *Internet Addiction: A Handbook and Guide to Evaluation and Treatment*, the inclusion of digital technology in everyday life has become even more prevalent. Now digital technologies highly interfere not only with the lives of young adults and adults but also—and mainly—with the lives of children and adolescents. We travel across the globe speaking about Internet and screen addictions only to find more questions about the impact of technology on children and adolescents. We hear from adolescent psychiatrists, pediatricians, child psychologists, school counselors, educators, and parents who are concerned about children’s problem use of technology and devices.

Why does screen time matter? Although the use of technology as a learning tool holds much promise for our children, the misuse of technology can have the opposite effect. Research clearly shows that too much screen time is linked to a lack of school success: poor grades, lower reading scores, inattention, dulled thinking, and social problems. It is not hard to see how television, video games, and Internet activities might interfere with children’s
healthy eating and sleeping habits and getting their homework done. Less well known is how screen time can rob children of opportunities to develop essential learning skills. New research from the world of neuroscience shows that too much screen time—versus not enough face time—is wiring children’s brains in ways that can make learning in the classroom, and getting along with teachers and other students, more difficult.

The impacts of this exposure are now more tangible because of the results of investigations carried out in different parts of the world, which show the potential consequences of uncontrolled online use and the observed effects of games and technology in our lives. These efforts resulted in the inclusion of Internet Gaming Disorder for further study in the American Psychiatric Association’s Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). Independent of the platform on which studies are focusing, from excessive video gaming to social networking, texting, or any other applications, the results show that children’s lives have become unmanageable and the implications of virtual experiences for the new generations can cause psychological, social, cognitive, and physical harm.

This book gathers exemplary professionals and researchers from around the world who, by working on the issue in an all-new way, have produced a wide-ranging and original reference, documenting a trove of research material. The chapters address a variety of components of virtual experiences from sexting to distracted driving to the impact of autism on Internet addiction in children, resulting in what are possibly the most comprehensive reference and guidance materials available today. Clinicians, pediatricians, investigators, professors, students, and even the lay public will find in it a rich, well-backed source of information to identify and treat screen addictions among children and adolescents.

This book identifies signs of problem Internet behavior among children, even at the earliest ages. For instance, does the child throw tantrums or become aggressive or agitated when asked to stop using screens? Does the child lie about screen use or sneak use of devices? Does the child show no interest in other things unless they are related to devices? Does the child prefer to spend time alone with screens rather than time with friends?

As children age, there is greater concern about screen time. Researchers estimate that 4% of adolescents in the United States meet the criteria for Internet addiction. The number is much higher in Hong Kong, where 17% to 26.8% of adolescents meet the criteria for addiction. The American adolescent nowadays has easy access to one or more mobile links to the Internet; 92% of teens go online every day, and 24% say they are online almost constantly.

Often, children and adolescents with Internet addiction are brought into therapy for other behavioral or psychiatric problems. Given the problems that co-occur with screen addictions, such as anxiety and depression, it is important for therapists who treat children and adolescents to develop a media use screening tool to measure and profile their media use (e.g., reach,
time spent) across all relevant forms of media, including television, radio, and online portals. To help practitioners, this book presents standard tools, such as the Problematic and Risky Media Use in Children Checklist and the Parent–Child Internet Addiction Test, that effectively measure media use among children and adolescents and its impact. These tools address all media types and enable therapists, school counselors, pediatricians, and teachers to gain a great amount of information about media use from the responses, which provide a good idea of a child’s level of risk for media-related problems.

For practitioners, this book also examines how to diagnose Internet addiction and differentiate it from other forms of adolescent psychiatric conditions. It explores evidence-based treatment approaches and how to define the problem accurately enough to distinguish pathology from normal development—an issue made more difficult by the rapid and enthusiastic adoption of these technologies in our schools, workplaces, and homes for communication, education, and entertainment. This book also serves as a clinical reference handbook for hospitals and clinics looking to create inpatient treatment programs and family therapy options to address Internet and screen addictions among children and adolescents.

 Screens allow all of us to connect through texts, e-mails, and social media. They also allow children and adolescents who suffer from social phobias and anxieties, Asperger’s syndrome, and autism to find a safe place to retreat. Studies show that psychiatric issues and dysfunctional family dynamics are closely associated with the development of screen addiction in young people. This book addresses the psychological, social, and family conditions for those most at risk and how to combat the use of technology that replaces important face-to-face social relationships.

The constant point-and-click scanning behavior associated with screen and tablet use has been shown to cause significant attentional problems in children. Among the issues cited are that our brains do not multitask as we would like to think and that technology use makes us easily bored with things that do not pop, beep, or scroll. Researchers studying the neuroscience of Internet addiction have found problems in the prefrontal cortex, the area of the brain most associated with judgment, decision making, and impulse control. This brain area undergoes major reorganization during adolescence and has been shown, in functional magnetic resonance imaging studies, to be weakened in Internet addicts. Thus, this book evaluates the effects of heavy screen use on the development of the adolescent’s brain and the cognitive repercussions of excessive use of games and Internet platforms for mobile phones and tablets. More specifically, it explores the effects on executive function, impulse control (including emotion), and self-regulation.

Beyond the psychological, social, and cognitive concerns, this book addresses the physical risks that result from too much screen time and provides strategies to improve children’s activities. Think of a child who slumps
over a tablet and other devices all day. Early studies have found that users who spent more time on computers more likely suffered from back pain, eyestrain, carpal tunnel syndrome, repetitive injury disorders, and obesity.

Because school systems increasingly rely on technology, this book addresses school-based initiatives for administrators and teachers to develop Screen Smart Schools that employ policies and procedures designed to increase awareness among students (and their families) of how much time students spend in front of screens, and employ proper teacher training that helps instruct educators on early detection of students who misuse media or technology, as well as proper strategies of intervention and communication with parents.

Collectively, the book focuses on prevention before use of technology becomes a problem and emphasizes balancing screen time with activities for a healthy mind and body.

We hope you find this book a valuable guide and reference text.

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Internet Addiction in Children and Adolescents began as a pet project in a young researcher’s one-bedroom apartment in Rochester, New York. I (KSY) was that young researcher. It was 1995, and I had a friend whose husband was seemingly addicted to AOL chat rooms, spending 40, 50, 60 hours online at a time when it was still $2.95 per hour to dial into the Internet. Not only did they suffer financial burdens but their marriage ended in divorce when he met women in online chat rooms (Young, 1996).

The first study on Internet addiction shortly followed as I collected more than 600 similar case studies of people who suffered from relationship problems, academic problems, financial problems, and job loss because they were unable to control their Internet use (Young, 1998). The research grew very quickly into a rapidly evolving new field. Psychologists such as Drs. David Greenfield and Marissa Hecht Orzack were early pioneers in the field (e.g., Greenfield, 1999; Orzack, 1999). Their prolific writings in the late 1990s opened up new areas of research. Studies were carried out in China, Korea, and Taiwan in the early 2000s. Historically, this was a pivotal moment as the research led to the development of inpatient treatment facilities.

In 2006, the first inpatient center to treat Internet addiction opened in Beijing, China (Jiang, 2009). Asian countries seemingly had significant problems dealing with Internet use compared with the rest of the world, although that same year a national study in the United States found that one in eight Americans suffered from at least one criterion of problem Internet use (Aboujaoude, Koran, Gamel, Large, & Serpe, 2006). During this period, online applications such as Facebook and Twitter evolved, making technology an integral part of everyday life and blurring the distinction between addictive and functional Internet use.
By 2010, studies of this problem predominantly came from Asian cultures, which led to comprehensive prevention programs in some countries. For instance, Korea developed a master plan to prevent and treat Internet addiction, including national screening days to identify children at risk, early prevention programs offered in schools, and hundreds of inpatient units to treat Internet addiction (Koh, 2013). Comparatively, the United States had seemingly fallen behind, with no government-based or national intervention plans—such as screenings, prevention programs, or inpatient care—to deal with Internet addiction (Young, 2013).

Studies began to identify what were considered digitally potent online applications such as online role-playing games, online gambling, or online pornography that were more addictive than e-mail, PowerPoints, or texting. In 2013, Internet Gaming Disorder was singled out as the most potent problem categorized in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)* as a condition for further study (American Psychiatric Association, 2013). Later that year, the first inpatient hospital program for Internet addiction recovery opened in Pennsylvania (DeMarche, 2013), treating all forms of Internet addiction by applying concepts of digital diet and digital nutrition to find healthy ways of using technology, similar to approaches used in treating food addiction.

New statistical models also emerged that identified moderating factors such as coping styles and Internet expectancies that determined functional and dysfunctional Internet use among adult populations (Brand, Laier, & Young, 2014). Research on Internet addiction changed from clinical observation to more statistically and empirically grounded studies. Furthermore, a growing body of neurological and neuroimaging studies showed that the prefrontal cortex played a significant role in the development of Internet addiction (Brand, Young, & Laier, 2014), suggesting a biological causation for the disorder similar to other addictive syndromes.

In fact, neuropsychological and neuroimaging research on excessive and addictive use of the Internet is a rapidly growing scientific field, which has revealed a sum of very interesting results. The results show that an addictive use of the Internet is linked to functional brain changes involving parts of the prefrontal cortex, accompanied by changes in other cortical (e.g., temporal) and subcortical (e.g., ventral striatum) regions. Additionally, there are some hints for structural brain changes, which also may hurt one’s executive functions in planning and reasoning and increase risk for impulsivity leading to a person’s loss of control over Internet use.

Today, the question has shifted from how much time online is too much to how young is too young for children to go online. According to the Pew Internet Project (2013), more than 30% of children younger than 2 years have used a tablet or smartphone and 75% of those aged 8 years and younger live with one or more mobile devices in the home. Because technology is used so frequently in child play, the creativity and imagination of our youth are
left idle, and studies suggest their opportunities to achieve optimal motor and sensory development are diminished (e.g., Dalbudak & Evren, 2014; Gentile, 2011; Rosenwald, 2013). Compounding the problem, children react with defiance, disobedience, and, in some cases, violence when parents try to limit or stop screen time.

These risks raise new concerns about technology addiction among children and adolescents, especially as technology use is encouraged at young ages. Already, the American Academy of Pediatrics (2014) warns against children younger than 2 years having any access to technology or any media and only limited amounts thereafter.

The United States could learn from countries like Korea that provide national screening days to identify children at young ages with problems related to Internet use, provide school-based prevention programs, and provide more Internet addiction inpatient programs, giving parents and families options for treatment. With greater awareness and prevention as children go online, we can intervene early, initiating ways to balance technology use without being consumed by it.

Realizing the emotional toll of technology addiction on children, adolescents, and families, the chapters in this book provide clinical, sociological, and developmental theories used in the evaluation and treatment of Internet addiction among children and adolescents. Looking ahead, this book builds on our earlier work (Young & Abreu, 2010) by focusing on the latest trends in treating children and adolescents. Our previous book minimally addressed adolescents, but now we see that digital addictions have spread dramatically into the lives of children and adolescents.

News stories constantly describe problems that children and teens have with social media, online gaming, Internet gambling, and sexting. The chapters that follow, written by content experts in their fields, incorporate theoretical models from the fields of psychiatry, psychology, communication, child development, education, and sociology to examine risk factors for addiction in children and adolescents, the most problematic online applications, ways of measuring problems, and strategies for prevention and recovery.

In outlining the content for this book, we sought to present information and expert perspectives that would be useful not only to individuals, families, teachers, and counselors but also to academics and mental health counselors from a variety of fields. Those specializing in social work, school counseling, psychology, psychiatry, child and family therapy, adolescent addiction services, and nursing will find evidence-based counseling approaches for treatment. Parents and teachers will find information on how to appropriately engage children and adolescents using technology, which is practically any child today. Educators concerned about the potential misuse of technology among children and adolescents, including teachers and school administrators, should use this book to identify potential risk factors in children in training and to develop prevention programs so that young people can
better use this technology in a responsible and productive way. Finally, the chapters included here serve as a reference handbook for child and adolescent hospitals, adolescent recovery centers, community health agencies, and child and adolescent psychiatry units.

REFERENCES


Share

Internet Addiction in Children and Adolescents: Risk Factors, Assessment, and Treatment
The world of technology has provided numerous advantages to upcoming generations; however, it has also added a venue of concern when it comes to the sexual and psychological development of youth. One such concern is sexting behavior. Sexting among adolescents has proved to be a complex and concerning issue for those who are responsible for the welfare of children, including family members, schools, churches, the legal system, and mental health professionals. This chapter explores sexting behavior among youth, including various typologies and strategies for assessment and prevention.

One of the challenges is the lack of a consistent definition in the literature for sexting-related behaviors. Although sexting may occur at any age, including adulthood, for the purposes of this chapter, sexting is defined as youth-produced (under 18 years of age) sexually explicit images/videos, which are transmitted to others who are also younger than 18 years. The images/videos may include nude or partially nude youth (younger than 18 years), and may or may not meet the legal definition of child pornography. These images/videos can be exchanged using a variety of technologies, including social media, text messaging, cell phone apps (e.g., Snapchat, Instagram), webcams, digital cameras, and so forth.

Klettke, Hallford, and Mellor (2014) stated, “It is difficult to accurately estimate the prevalence of sexting behaviors at this time. This is due to the variance in definitions and sampling techniques which results in large differences in estimates across studies . . . ” (p. 51). Keeping this caveat in mind, Klettke et al. (2014) conducted a systematic review of 31 studies and estimated that
12% of the youth admitted to sending sexual images/videos to other youth, and 16% reported receiving such images. A number of other studies estimate the prevalence of sexting among youth to be approximately 15% for sending sexting images, and 35% for receiving such images (Fleschler et al., 2013; Kopecký, 2012; Strassberg, McKinnon, Sustaita, & Rullo, 2013; Temple et al., 2012).

Klettke et al. (2014) also found that: (a) sexting is more prevalent among adults than adolescents; (b) older adolescents are more likely to engage in sexting behavior than younger children; (c) it is more common to receive rather than send sexts; (d) sexting behavior is associated with many behavioral, psychological, and social factors; (e) females are more likely to send images whereas males are more likely to be the receivers of sexts; (f) although not causal, sexting is associated with an increase in sexually risky behaviors such as unprotected sex, drinking, or using alcohol before sexual behavior, adult pornography use, and web-based chatting; and (g) sexting is most likely to occur in the context of a committed relationship.

Rice et al. (2014) examined sexting as it is related to middle school–aged students. Results from the research indicated that youth aged 11 to 13 years who text at least 100 times per day had an increased likelihood to report both receiving and sending text messages with sexual content, and are more likely to report real-life sexual activity with others. Similar results were reported in a study by Houck et al. (2014) who reported that a group of at-risk middle school students (aged 12–13 years) who engaged in any form of sexting behavior were more likely to be engaged in a variety of sexual activities with others in real life. Those students who sent sexualized photos/videos (as opposed to sexualized text messages) were at an even higher risk to engage in sexual behaviors with others in real life.

Goggin and Crawford (2011) suggested that individuals often have different explanations for sexting behavior and his or her motivations for such behavior. The research indicates that some of these motivations include: (a) sexual curiosity, (b) sexual flirtation, (c) foreplay, (d) satisfying a partner’s fantasies, and (e) staying romantically connected to a long-distance partner. Research also suggests that there may be other motivations that are not developmentally appropriate and may include revenge against past sexual partners or the sexual exploitation of others (Wolak & Finkelhor, 2011). Albury, Crawford, Byron, and Mathews (2013) reported that other individuals are motivated to engage in sexting behavior because they believe it is humorous or a great way to prank their peers.

The research shows that motivation for engaging in sexting behavior differs for males and females (Englander, 2012). More often than males, females reported feeling an increased pressure to send sexts as the primary motivator for the behavior (Englander, 2012; Henderson, 2011). Although males may feel the pressure to engage in sexting, it appears to be more related to showing off to their male peers rather than to please their romantic partners.
Albury et al. (2013) indicated that youth do not always comprehend the full range of the potential consequences associated with sexting behaviors, especially serious legal consequences. Furthermore, Strohmaier, Murphy, and DeMatteo (2014) reported that most youth believed that sexting was a common practice among their peers and had few concerns about the legal and psychological implications.

Media attention has been focused on the self-production/receipt of self-produced sexual images and the consequent risk of prosecution of these cases under the child pornography laws. Between 2008 and 2009, U.S. law enforcement agencies handled approximately 3,477 cases of youth-produced sexual images (Wolak, Finkelhor, & Mitchell, 2012). Based on their findings, the percentage of youth who appear in and/or create sexually explicit photos or videos that meet the legal definition of child pornography is about 1%. Although this number may seem small, 1% of the youth population who use digital media translates into a large number of youth who are engaging in illegal behavior. It is important to remember that a broader definition of sexting would include more youth who were sending or receiving nude/sem nude images that would not necessarily meet the legal definition of child pornography.

The majority of youth who produce and/or distribute sexting images are not arrested for their behavior; however, there are a number of exceptions. W. A. Walsh, Wolak, and Finkelhor (2013) interviewed 236 prosecutors who were asked about the percentage of sexting cases among minors that resulted in legal charges; 59% said that “all or nearly all” of their sexting cases did not result in criminal charges; however, 21% said that “most or all” of their sexting cases resulted in criminal charges. When criminal charges were filed, the prosecutors indicated that it was likely because of the circumstances related to malicious intent, harassment, distribution of illegal images, significant age differences, and violent/explicit images. Zhang (2010) argues that our attempts to protect youth through prosecution have failed miserably and relegated them to far worse, including lifetime consequences for what may be a developmentally normal exploration of sexuality. It is important that the clinicians working with sexting behaviors should be familiar with their state’s definition and mandated reporting requirements. In cases where sexting behavior is involved, the mandated reporting laws may require a report to be filed with the relevant agency.

The studies that examined the psychological impact of sexting-related behaviors had mixed results. For example, two studies found that there was no difference in the measures of self-esteem between groups of youth who sexted versus those who did not (Gordon-Messer, Bauermeister, Grodzinski, & Zimmerman, 2013; Hudson, 2011, as cited in Klettke et al., 2014). Furthermore, Englander (2012) found that youth who sexted were less prone to depression than their non sexting counterparts; however, he also reported that when the youth felt pressured to engage in sexting behaviors
by a peer or partner, they had higher levels of anxiety, and reported higher incidences of dating violence than those who did not engage in sexting. Dake, Price, Maziarz, and Ward (2012) found that youth who had engaged in sexting behaviors were more likely to experience hopelessness and/or suicidal ideation or attempts than those who did not engage in sexting behavior. Finally, Mitchell, Finkelhor, Jones, and Wolak (2012) found that 21% of the youth who sent sexting messages and 25% of those who received sexting messages reported feeling “extremely emotionally upset, embarrassed, or afraid” among other negative emotions.

Given the mixed results of the research, it is understandable that there is a divide among professionals as to how sexting behavior should be addressed. There are individuals who believe that sexting among youth is a trend that causes significant and long-term developmental, psychological, and sexual issues, while others take a “kids will be kids” attitude and believe that sexting is an extension of many juvenile games such as Spin the Bottle or Truth or Dare. Although individuals in this group may admit that sexting is not necessarily a good decision on the part of youth, they believe it is just another way for youth to explore relationships and sexuality. This group is often dismissive of the legal consequences and support laws that would allow sexting behaviors among age-appropriate peers, while the first group is often influenced by media accounts and becomes paranoid about the possibility of dire consequences. Neither extreme is a useful way of conceptualizing sexting, as a balanced and thoughtful approach is needed.

The truth is both groups are right. Examining the motive for a youth’s sexting behavior is a critical step in determining the appropriateness of the behavior as well as the consequences of such behavior. The literature on sexting provides a typology that is helpful in differentiating youth who are sexually exploitive versus those who are developmentally curious.

**SEXTING TYPOLOGIES**

All youth who engage in sexting behaviors are not the same. Wolak and Finkelhor (2011) developed a typology for understanding the differences among youth who engage in sexting behavior. Their review of more than 550 legal cases involving “youth-produced sexual images” obtained from a national survey of law enforcement agencies resulted in two main categories, “aggravated” versus “experimental.”

Aggravated cases involved criminal or abusive components including:

1. Adult involvement through solicitation/receipt of sexted images from minors
2. Criminal or abusive behavior among minors such as sexual abuse, extortion, deception, or threats
When criminal or abusive sexting behaviors occur among youth, there are two possible explanations for such behavior. First, the individual sharing the images intends to cause significant harm to another individual. This intent to harm may range from a tumultuous breakup of an interpersonal relationship (revenge), blackmailing, threatening, or deceiving others, and/or intentional sexual abuse/exploitation by juvenile offenders. The second explanation may be related to reckless misuse of sexting images, which involves photographs/videos being taken or sent without the knowledge or willingness (consent) of the youth. Reckless misuse cases differ from malicious intent and frequently involve poor judgment and impulsive behaviors without real intent to harm. An example of reckless misuse is when a youth has a pool party and someone films the people at the party swimming in the nude, and then shares it with others who were not at the party. Albury and Crawford (2012) found that consent was the defining feature that made the difference between the youth’s positive or negative experiences of sexting. The negative experiences were primarily characterized by an unauthorized or unintended distribution of images.

Intuitively, people worry that sexting behavior, especially aggravated sexting, sets the stage for a future sexual offense; however, few methodologically strong studies regarding adolescent sexual offending are available. The research that is available is limited and is somewhat dated. In fact, no one has directly looked at the impact of technology on sexual offending behaviors in youth. One study linked texting about antisocial behaviors to a predicted increase in aggressive behavior and rule breaking (Ehrenreich, Underwood, & Ackerman, 2014) and suggested that peers may reinforce or instruct such behaviors.

According to Wolak and Finkelhor (2011), experimental sexting may have several motivations. Romantic purposes were by far the most common context for sexting among youth. Most youth indicated that they were either in a committed relationship with the person they sexted with or trusted that individual with their photos/videos. In addition to sexting when already in a romantic relationship, youth also use sexting behaviors to flirt or express general sexual interest in potential romantic partners. Youth may take a sexualized photo/video of themselves and text it to someone they are interested in sexually to see whether the feelings are mutual. This is slightly riskier because the person receiving the sext may not have desired it, or may be more likely to share the image with unintended recipients. Finally, youth may engage in sexting behaviors in an attempt to show off to other youth, or while engaging in games, pranks, or jokes with other youth. Youth may also take images of themselves without the initial intent to share those images, or younger children may exchange their images as a way to appear “older and cool” among their peers. Experimental sexting appears to be part of a youth’s typical development, including his or her sexual curiosity, creating sexual interest, finding romantic partners, and/or getting attention from other youth.
PSYCHOLOGY OF THE INTERNET

Wallace (1999) introduced the concept “psychology of the Internet,” and suggested that the Internet creates a unique environment, which alters the way people think, feel, and behave. Suler (2004) researched the unique psychological characteristics of the Internet among typically developing individuals and found that the online environment was a frequent catalyst for online risk taking and boundary crossing behaviors. Suler (2004) called this phenomenon the “online disinhibition effect.” Online disinhibition provides a context for understanding why some youth push boundaries and take risks with their sexting behavior, even when they know that such behavior may not be appropriate. The main tenets of Suler’s (2004) online disinhibition theory include:

■ You Don’t Know Me and You Can’t See Me are concepts that combine together to give individuals the sense that they are anonymous and in a digital environment where there are no boundaries or rules associated with their online behavior. This phenomenon has existed in social psychology since Zimbardo (1969) discussed the concept of deindividuation. It is not surprising that the concepts of anonymity and deindividuation play a role in youth sexting behavior.

■ See You Later—The Internet allows users to easily escape situations online, thereby, making it more likely to engage in risk-taking behaviors. When an online user engages in questionable or risky behavior such as sexting, in the moment after the behavior there does not appear to be any consequences related to it. Although consequences may eventually result, they are most effective at deterring future behavior when they come immediately after the negative behavior. Sexting behavior often has a delayed consequence—it may take days, weeks, or months, but this ability to avoid consequences is one aspect of the digital world that allows the sexting to continue.

■ It’s All in My Head and It’s Just a Game give the illusion that the online world only operates in fantasy, and that no one is harmed by our online ventures. The line between fantasy and reality can be easily blurred as there are many online activities that are fantasy based. This idea that the digital world is a fantasy-based game also leads many to the conclusion that the rules of the real world do not apply to the online world. The belief that there are no rules or consequences is a dangerous combination for potentially problematic online behaviors, including sexting behaviors.

■ We’re Equals and We’re All Friends create the illusion that everyone online is equal and friends with one another; therefore, the rules that dictate appropriate interactions between different groups (e.g., adults
and children) in the real world can be ignored online. Hierarchies that are built into society to establish roles and boundaries can be easily dismissed. As a result, sexting behavior between adults and adolescents may not feel as inappropriate as real-life sexual interactions.

The online disinhibition effect combines with the previously mentioned motivations, and creates an environment that facilitates youth sexting behavior. Both the experimental and the aggravated groups of youth who engage in sexting behavior can be significantly influenced by the online disinhibition effect.

**ASSESSMENT**

In order to determine the typologies and influence of the psychology of the Internet, a comprehensive assessment should be conducted. The main goals of assessing youth who engage in sexting behavior are to determine whether they best fit into the “aggravated” or “experimental” group, and to identify any underlying mental health issues that should be addressed. In order to conduct a valid and reliable clinical opinion, all youth who are referred for sexting behavior should be thoroughly interviewed and given objective measures of their mental health and personality. Although it may seem excessive to do this for each sexting case, it is far too easy to develop impressions and judgments based on our biases and assumptions about a youth and/or their history without having solid data to support such impressions and judgments. The next two sections discuss the two aspects of a comprehensive assessment: (a) the psychosocial–sexual assessment and (b) psychological testing and standardized questionnaires.

**Psychosocial–Sexual Assessment**

Conducting a complete psychosocial–sexual assessment is the first step in the process. The common components of a psychosocial–sexual assessment include both historical and current information about an individual’s:

- Home and family life
- Academic/work performance and behavior
- Sexual knowledge and behaviors
- Addictive/compulsive behaviors (e.g., substances, gaming, pornography)
- Social skills and friendships
- Mental health concerns
- Abusive or traumatic events
Suicidal thoughts, plans, or attempts
- Digital world interactions (e.g., gaming, social media, sexuality)
- Extracurricular activities (e.g., sports, band, church)

Klein, Goldenring, and Adelman (2014) developed a standardized questionnaire to assist in conducting a psychosocial–sexual interview with adolescents, named HEEADSSS 3.0. This questionnaire can be extremely useful for gathering standardized information across clients, including the bullet points listed earlier. It is equally important to gather collateral information from those individuals who have knowledge about the youth’s current and past thoughts, feelings, and behaviors. Interviews may include parents/guardians, close family members, past counselors, teachers/school counselors, and so forth. This information can be useful in validating the self-report data from the youth.

Psychological Testing and Standardized Questionnaires

Psychological testing and standardized questionnaires are important sources of objective data, which help to increase the validity and reliability of clinical impressions formed during the psychosocial–sexual interview. Some of the common tests and questionnaires that may be helpful in sexting cases are discussed in the following sections. Clinicians should be reminded that many psychological tests require specialized training and competency in interpretation.

**Internet Sex Screening Test–Adolescent**

The Internet Sex Screening Test–Adolescent (ISST-A) was developed by two of this chapter’s authors (Delmonico and Griffin), and can be used to conduct a quick-screen of the digital media use of adolescents. While the ISST-A has no psychometric data associated with it, the items can be used as a follow-up to the clinical interview. Inherent in the ISST-A are questions that would help determine if an adolescent may have addictive or compulsive behaviors related to their online behavior, including sexting behavior (e.g., Have you made efforts to stop your digital behavior? Do you feel your digital behavior is out of control? Have you suffered consequences as a result of your behavior?). A copy of the ISST-A is provided in Figure 4.1.

**Minnesota Multiphasic Personality Inventory–Adolescent**

Minnesota Multiphasic Personality Inventory–Adolescent (MMPI-A; Williams, Butcher, Ben-Porath, & Graham, 1992) was published in 1992 and was the first of the MMPI family to assess adolescents between the ages of 14 and 18 years. The MMPI-A is a self-report instrument used to assess for a wide range of clinical conditions, including mood disorders, personality
FIGURE 4.1 Internet Sex Screening Test–Adolescent

Directions: Read each statement carefully. If the statement is mostly TRUE, place a check mark on the blank next to the item number. If the statement is mostly FALSE, skip the item and place nothing next to the item number.

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I have some sexual sites in my Favorites/Bookmarks.</td>
</tr>
<tr>
<td>2</td>
<td>I spend more than 5 hr/wk using my digital devices/computer for sexual purposes.</td>
</tr>
<tr>
<td>3</td>
<td>I have searched online for pornography or other sexual material (e.g., apps, games).</td>
</tr>
<tr>
<td>4</td>
<td>Online sex has sometimes interfered with certain aspects of my life.</td>
</tr>
<tr>
<td>5</td>
<td>I have participated in sexually related texts, chats, videochats, and so forth.</td>
</tr>
<tr>
<td>6</td>
<td>I have a sexualized username or nickname that I use online.</td>
</tr>
<tr>
<td>7</td>
<td>I have masturbated while using my digital devices/computer.</td>
</tr>
<tr>
<td>8</td>
<td>I have accessed online sexual material in places other than my own house.</td>
</tr>
<tr>
<td>9</td>
<td>No one knows I use my digital devices/computer for sexual purposes.</td>
</tr>
<tr>
<td>10</td>
<td>I have tried to hide my online sexual behavior so that others cannot see it.</td>
</tr>
<tr>
<td>11</td>
<td>I have accessed online sexual material on my digital device/computer after midnight.</td>
</tr>
<tr>
<td>12</td>
<td>I experiment with different aspects of sexuality (e.g., bondage, homosexuality, cross-dressing) while online.</td>
</tr>
<tr>
<td>13</td>
<td>I have made promises to myself to stop using my digital devices/computer for sexual purposes.</td>
</tr>
<tr>
<td>14</td>
<td>I sometimes use online sex as a reward for accomplishing something (e.g., finishing a project, stressful day).</td>
</tr>
<tr>
<td>15</td>
<td>When I am unable to access sexual material online, I feel anxious, angry, or disappointed.</td>
</tr>
<tr>
<td>16</td>
<td>I have increased the risks I take online (give out name and phone number, meet people offline).</td>
</tr>
<tr>
<td>17</td>
<td>I have punished myself when I use technology for sexual purposes (e.g., time-out from cell phone, stop using Xbox).</td>
</tr>
<tr>
<td>18</td>
<td>I have met someone face to face whom I met online for romantic/sexual purposes.</td>
</tr>
<tr>
<td>19</td>
<td>I have engaged in sexting behavior.</td>
</tr>
<tr>
<td>20</td>
<td>I have seen sexual pictures of other kids or teenagers online.</td>
</tr>
<tr>
<td>21</td>
<td>I believe I am an online sex addict.</td>
</tr>
<tr>
<td>22</td>
<td>I have posted/viewed sexual photos or information on social media.</td>
</tr>
<tr>
<td>23</td>
<td>I have used online sexual hookup apps to find someone who may want to have sex with me.</td>
</tr>
<tr>
<td>24</td>
<td>I have stored sexualized photos on my hard drive or on the cloud somewhere.</td>
</tr>
<tr>
<td>25</td>
<td>I have posted/viewed sexualized videos online.</td>
</tr>
</tbody>
</table>

traits/disorders, psychopathic deviance (antisocial), drug/alcohol, immaturity, and other mental disorders. This instrument has been standardized on typical developing youth, as well as those with mental health concerns. The MMPI-A is a general instrument that should be administered to all youth.
referred for their sexting behavior to help determine whether the motivation was more “aggravated” or “experimental.”

**Desistence for Adolescents Who Sexually Harm**

The Desistence for Adolescents who Sexually Harm (DASH-13) is a checklist of 13 factors that may be related to the desistence (decrease) of adolescent sexual offending (Worling, 2013). Seven factors are related to future sexual health, while six factors are related to the general prosocial functioning. Although many sexting cases should not be considered sexual offense behavior, the DASH-13 provides valuable information for those who have crossed sexual boundaries with others and can help identify protective factors that could help the prevention of such boundary crossings in the future. For that reason, the DASH-13 is a checklist that would be appropriate for both the aggravated and experimental sexting scenarios.

**Jesness Inventory—Revised**

The Jesness Inventory—Revised (JI-R) is a comprehensive, self-report measure of personality and psychopathology that is applicable to children and adolescents with more severe behavioral problems (Jesness, 2003). The JI-R is particularly useful in discriminating between social maladjustment of a typical youth, and more severe emotional disturbances. Given that the JI-R is for better understanding the more severe behavioral problems, it may not be appropriate to give to all youth who have engaged in sexting behavior. It can be useful in cases where clinicians are still unsure whether the sexting was experimental or aggravated, or to determine if there are more serious concerns behind the sexting behavior. While trying to determine whether or not to administer the JI-R, it is important to review the results of other psychological testing administered to the youth during the assessment process.

**Other Considerations**

There is a lack of research related to the underlying psychological issues that may be related to sexting behavior. A review of the adult literature related to problematic online sexual behavior indicates that several common comorbid mental health issues are often present, including: (a) mood disorders, (b) addictive disorders, (c) attentional disorders, (d) autism spectrum disorder (ASD), and (e) sexual abuse victimization. Other issues may include intellectual and developmental disabilities. Not all youth who engage in sexting behavior have an underlying mental health issue; however, screening for the possibility that an underlying issue exists is an important part of the assessment process. There is not enough space in this chapter to address screening for each of these issues, but clinicians should practice...
within their competence or employ someone to screen for such issues in sexting-related cases.

At the start of the assessment section, it was stated that the goals of assessment in sexting cases are to determine whether the individual engages in aggravated or experimental sexting behavior, and/or whether there are any underlying mental health issues related to the sexting. This is best accomplished by reviewing the assessment data for patterns of behavior that may be indicative of deeper issues (e.g., truancy, anti-authority attitudes, drug/alcohol issues, impulsivity, Internet or sexual addictions). Much of the assessment process is to rule out the more significant mental health or behavioral issues that may be related to sexting behavior. A comprehensive assessment should assist clinicians in developing strategies for primary, secondary, and tertiary prevention.

**PREVENTION**

There are three basic levels to all forms of prevention: (a) primary, (b) secondary, and (c) tertiary. Primary prevention provides basic and general education about a topic to everyone who may be affected. Secondary prevention is for individuals who have not yet engaged in the target behavior (e.g., sexting), but have certain underlying issues that place them at high risk for engaging in the behavior. Secondary prevention builds on the information provided during primary prevention, but works to address those underlying issues placing the individual at risk of the target behavior. Tertiary prevention focuses on individuals who are currently engaging in or have consequences as a result of the target behavior. Tertiary prevention works to both stop the behavior and prevent future occurrences of it. Tertiary prevention is essentially a psychological treatment as it typically involves a myriad of affective and behavioral issues.

**Primary Prevention**

Primary prevention provides a baseline of educational information and should be the foundation for secondary and tertiary prevention strategies. Prevention strategies that include youth in the dialogue and respect their current development level work best. Primary prevention should provide youth with information about sexting behavior and its consequences that assist them in making appropriate decisions. Sexting, and other uncomfortable topics, are often avoided in the settings that most often deliver the primary prevention programs (e.g., schools, churches); however, in order to assist youth with these issues it is critical that organizations develop a more tolerant and open attitude in discussing such topics. One way to discuss sexting behavior is to incorporate the topic into other related issues. Primary prevention programs that could incorporate sexting include digital health/citizenship, Internet safety, antibullying, and other sex education–related topics.
The following paragraphs describe the topic areas that should be addressed as part of a primary prevention program on sexting behavior.

Motivation for Sexting

Often youth engage in negative online behaviors without considering their motivation for such behaviors. It is important to help them understand that the motivation behind a negative behavior is a first step in preventing it from occurring. For example, asking youth about why an individual might engage in sexting behavior can not only uncover possible motivations (e.g., sexual interest, seeking affirmation, pressure from others, revenge against an ex-boyfriend/girlfriend, or a joke/prank), but also assist them in developing alternative behaviors that may also satisfy the motivation. Engaging youth in dialogue regarding their decision-making process and teaching them to develop alternatives to negative behaviors are more successful than simply telling them what to do.

Psychology of the Internet

Another aspect of primary prevention is educating youth about how the psychology of the Internet influences their online and offline behaviors. Educating youth about the online disinhibition effect can assist them in understanding how they may be predisposed to engaging in online behaviors that they may have never imagined agreeing to in the offline world (e.g., sexting behavior). Once youth can identify how the psychology of the Internet influences them, they can then begin to develop strategies for preventing it from leading them into high-risk/high-consequence behavior.

Psychological and Long-Term Consequences

Youth have the most difficulty in recognizing the psychological and long-term consequences of their sexting behavior (Albury et al., 2013). Even when they are consensually participating in sexting behavior, their naiveté often prevents them from anticipating the possible psychological long-term consequences. Research has demonstrated that the brain is not fully developed until around 25 years of age, and as a result, youth often have difficulty in anticipating the potential psychological impact and consequences of their behavior (D. Walsh, 2014). Primary prevention strategies should focus on filling in the gaps for youth about the psychological and long-term consequences, which they may not be able to fully anticipate.

These long-term consequences may include an unintended audience viewing the images (e.g., strangers, parents, employers, colleges), the inability to anticipate feelings years into the future (e.g., when married, when they have children), the permanence of the images, and the possible regret that they
cannot retrieve the sexting images. Some of the most significant long-term consequences include potential legal ramifications of sexting behavior. Primary prevention strategies should educate youth about possible legal consequences in order for them to make informed choices about their sexting behavior.

Although there is no research that supports that sexting behavior is associated with long-term psychological consequences, youth may feel anxious, embarrassed, or depressed about their sexting behavior, especially if they feel pressured to send sexting images/videos. Other situations may also lead to short-term psychological reactions, including sext images/videos taken without the consent of one of the partners (e.g., locker-room shower, unknown recording of sexual behavior), or when these images are shared among peers without the person’s explicit permission. Helping youth take the perspective of others and realize the impact that sexting may have on others (empathy) is an important part of a primary prevention program.

Sexuality and Relationship Education

Sexting behavior, especially among the experimental group, may be an artifact of a youth’s naive attempt in negotiating an intimate and romantic relationship with others. One of the main developmental goals of an adolescent is learning how to negotiate romantic and sexual relationships. Broader conversations about sexuality and relationships are an important aspect of primary prevention, because the youth may not comprehend why sexting behavior may be viewed as inappropriate by society. As youth develop a better understanding of healthy courtship in physical/sexual relationships, they also learn how and why sexting images may not be the best foundation on which to build relationships with others.

Using existing resources, such as the ones found at www.tes.com, a quick search for “sexting” provides a lesson plan with multiple activities for age-appropriate youth. Lessons include topics such as respect in relationships, boundaries, privacy, exploitation in partnerships, and so forth. The lesson plan also specifies the learning style matched to the activities.

Activities

When working with youth, it is important to remember that engaging them in the prevention and treatment process requires creative strategies. Creative strategies often incorporate activities, movement, movies, multimedia, books, and so forth. In using these creative strategies, not only are youth more likely to retain the information, the activities can also be useful to address various learning styles. The following paragraphs provide some examples of activities that could be used to assist youth in thinking about primary prevention.
**Psychology of the Internet Activity**
Ask for a single volunteer from a large group. Divide the large group into four smaller groups. Each small group represents one aspect of the online disinhibition effect: (a) anonymity, (b) escape consequences, (c) it is just a fantasy world, and (d) we are equals/we are friends. Instruct the single volunteer to act as though he or she is thinking about engaging in sexting behavior and that each small group tries to convince him or her to do it. His or her job is to resist the temptation by telling the small groups why their arguments are not convincing. For example, the anonymity group may say, “No one will know if you just take a picture of your penis and not your face.” The single volunteer might respond, “People may still figure it out through my screen name or IP address.” The purpose of this activity is to help youth understand how difficult it is to resist the influence of the psychology of the Internet. *Individual therapy adaptation:* The therapist could play the role of the various aspects of the online disinhibition effect and have the youth respond.

**Consequences Activity**
Print an image on an 8.5 × 11 inch piece of paper. The image can be of anything that would be easily recognized by youth (e.g., hot air balloon, tree, dog). Ask for a youth volunteer to come forward and show him or her the image. Fold the paper in half and hand it to the youth. Instruct him or her to give the paper to one person in the room without letting anyone else see the image. The volunteer then picks another youth from across the room. The person holding the paper must pass it from one side of the room to the other while remaining seated. Instruct everyone who passes it to keep the paper folded and NOT to look at the image. Repeat the passing of the paper once or twice. At the end of the activity, ask the large group to raise their hand if they know what is printed on the paper. Most, if not all, in the room likely know what is printed on the paper. Now process with the group the difficulty in keeping messages private when using technology, and the way they might feel if this was a sexted image.

**Secondary Prevention (At-Risk Youth)**
Secondary prevention should include and build on all of the educational elements of primary prevention. There is no research that has identified specific characteristics of youth that may make them more susceptible to engaging in sexting behavior. Based on the adult literature and clinical intuition, it could be hypothesized that the underlying comorbid psychological issues would increase the vulnerability of youth for engaging in sexting behavior. For this reason, a comprehensive assessment of youth who are referred for other issues is critical, especially youth who have features of mood disorders, addictive disorders (substance and
behavioral), attentional disorders, ASD, and past sexual abuse victimization. Additionally, research even reports an association between youth who engage in offline sexual behavior and sexting behavior. This relationship is not causal and therefore it is not possible to know which began first—offline sexual behavior or sexting.

Given the potential consequences of sexting behavior, including the legal ramifications, it is recommended that the topic of sexting behavior should be addressed with all youth referred for psychological counseling. Even if the youth do not present a high-risk for engaging in sexting behavior, the topics mentioned in the primary prevention section are applicable and appropriate. Research indicates that primary prevention alone appears to decrease the frequency of sexting behaviors among minors who are at the greatest risk (Dir, Cyders, & Coskunpinar, 2013).

**Tertiary Prevention (Treatment)**

To date, there are no empirically supported tertiary intervention/treatment strategies. It is important to remember that many sexting cases involve the experimental group and may not be indicative of more problematic behaviors. Using the primary prevention strategies mentioned earlier it is likely enough to assist the experimental group with addressing their sexting behavior.

For the limited number of cases in the aggravated group, it may be appropriate to review the models of treatment for juvenile sex offenders, as the issues of boundaries, empathy toward others, and the need for accountability (including technology use) are concerns for this group. It is also important to remember that the aggravated group may have the most significant underlying mental health issues, and these issues need to be addressed as part of the comprehensive tertiary prevention/intervention process. The primary prevention strategies mentioned earlier would also be useful in building a solid foundation of knowledge and skills related to technology use and sexting behavior. Although legal consequences should be a last resort, it is important that youth who engage in aggravated sexting behavior should receive consequences commensurate with their behavior. This may include developmentally appropriate legal consequences if the behavior involved the victimization of others.

**CONCLUSION**

Sexting behavior among youth includes various typologies that require individualized strategies for assessment and prevention. Through a review of the current literature on sexting behavior, and anecdotal clinical experiences, the following conclusions and implications can be made.

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The definition of sexting behavior varies widely in the literature and by the individual. Clinicians should be aware of these definitions when reading the literature and/or discussing sexting behavior with a client. The professional literature indicates that there are many motivations as to why youth engage in sexting behavior, many of which are developmentally appropriate. Assessing the motivation of a youth who sexts is an important clinical task to develop appropriate primary, secondary, and/or tertiary prevention strategies. Legal consequences for sexting behavior vary by jurisdiction; therefore, it is important for clinicians to understand the mandated reporting laws related to sexting behavior, and the potential legal consequences for youth who engage in sexting behavior.

Although the percentage of youth who engage in sexting behaviors is somewhat small, it remains an important and relevant area for research and prevention. An estimated 1% of the youth who engage in sexting behavior send or receive images/videos that would qualify as illegal child pornography. Clinicians should not assume that sexting images are illegal; however, the risk and impact of illegal images should be discussed among all youth. There is no research that indicates that sexting behavior leads to long-term psychological consequences. Given the lack of research, the best approach in working with youth involved in sexting cases is to follow their lead and pay close attention to signs and symptoms that may be indicators of potential psychological concerns.

Youth who engage in sexting behavior can be divided into two main groups: experimental or aggravated. Clinicians should use the assessment tools mentioned herein to assist in determining the typology of the youth involved in sexting behavior. This determination is critical because prevention/intervention for these two groups vary greatly. A comprehensive assessment is critical to determine the typology of sexting behavior, as well as to determine whether there are underlying psychological issues that need to be addressed.

Primary prevention strategies establish an important foundation for all youth, including those who have not yet engaged in sexting behavior, those who are at risk of sexting, and those who have already engaged in it. The four main areas of primary prevention suggested in this chapter include: (a) motivation for sexting, (b) psychology of the Internet, (c) psychological and long-term consequences, and (d) sexuality and relationship education.

The issue of sexting behavior among youth is complicated and only promises to become more complicated as technology advances. While some sexting behavior may be experimental and developmentally appropriate, other forms can be exploitive and cross significant boundaries. Clinicians should work with all youth to provide accurate and critical information about it. In addition, when indicated, creative and engaging assessment and intervention strategies should be employed. Clinicians should neither overreact nor
underreact to youth sexting cases. Creating a trusting environment where youth can honestly discuss their thoughts, feelings, and behaviors related to sexting is the essential foundation for prevention at all levels.

REFERENCES


This chapter describes the growing impact of Internet addiction on children and adolescents as new users of this technology. It views Internet addiction in terms of technology overuse and compulsive tendencies related to a child’s use of digital devices. It focuses on assessment methods that practitioners working with this population can use to measure and assess the behavior. It also focuses on how practitioners can develop their own screening tools of media use for children and adolescents. Finally, looking at parents who are the primary caregivers of technology at home, this chapter outlines comprehensive parenting guidelines based on the developmental age of the child to best integrate technology at home.

SCREEN ADDICTION IS UP

A survey of 350 parents in Philadelphia published by the American Academy of Pediatrics (AAP; Kabali et al., 2015) found that three quarters of their children had been given tablets, smartphones, or portable media players of their own by the age of 4 years and had used the devices without supervision. The study also noted that one third of the parents of 3- and 4-year-olds said that their children liked to use more than one device at the same time. Seventy percent of the parents reported allowing their children, aged 6 months to 4 years, to play with mobile devices while the parents did housework, and 65% said that they had done so to pacify a child in public. One quarter of the parents said that they left children with devices at bedtime and it was not clear how often the parents had bequeathed old devices as digital hand-me-downs or had bought new ones.
The survey was not nationally representative and relied on self-reported data from parents, but the surprising result adds to growing evidence that the use of electronic devices has become deeply woven into the experience of childhood. According to the results of a large-scale nationwide survey by Common Sense Media, 72% of children aged 8 years or younger used a mobile device in 2013, for example, compared with 38% in 2011. Within 2 years, they found that children’s media environments and behaviors had changed and children were more likely to use mobile interactive media such as smartphones and tablets at younger ages.

Common Sense Media is a nonprofit organization that tracks children and their use of technology. In their latest study in 2015, they surveyed more than 2,600 teenagers (aged 13–18 years) and tweens (aged 8–12 years). Their findings showed that tweens spent almost 6 hours a day on entertainment media, which included things like listening to music or watching online videos. For teenagers, that number spiked to almost 9 hours. The study suggested that kids spent more time with media and technology than they did with their parents, at school, or for any other activity. They also found that 60% of teens said that they texted while doing homework and nearly two thirds of them said that it did not affect the quality of their work. However, in practice, the behavior actually results in a greater number of mistakes and less retention of what is done.

Earlier studies on Internet gaming disorder had found that nearly one in 10 youth gamers (aged 8–18 years) were classified as pathological gamers or addicted to video gaming (Gentile, 2009). Compared to nonpathological gamers, pathological gamers were significantly more likely to play for more years, play more frequently and for more time, be more familiar with video-game rating symbols, have worse grades in school, have difficulties with attention and attention deficit hyperactivity disorder (ADHD), have more health problems, and have friends who were addicted to games.

The data show that children at young ages are using media and mobile devices and little has been done in terms of prevention or treatment of what may be considered a serious problem. For instance, the AAP (2015) recommends that children between the ages of 6 and 18 years should only be allowed to use technology devices up to 2 hours per day. Before age 2 years, children should not be exposed to any electronic media, the pediatrics academy maintains, because a child’s brain develops rapidly during these first years, and young children learn best by interacting with people, not screens, but lately it has softened its stance. It now advises setting time limits, prioritizing what it calls unplugged play, and not using devices as pacifiers to calm toddlers. However, as the data show, a lack of parental supervision may be more worrisome than the use of mobile devices by the very young.

This may be the age at which children engage in sensory–motor activities that encourage free use of their imaginations at play. Although children who are heavy users of electronics may become adept at multitasking,
there is also a concern that they can lose the ability to focus on what is most important, a trait critical to deep thought and problem solving needed for many jobs and other endeavors later in life. Some data show that heavy use of electronic media, or what has been called screen addiction, can also have significant negative effects on children’s attention, health, and social behavior.

**Screen Addiction and Attention**

Due to the constant point- and click-scanning behavior associated with screen and tablet use, several studies have found that children have developed significant attentional problems due to screen use (e.g., C.-F. Yen, Chou, Liu, Yang, & Hu, 2014; Yoo et al., 2004). The issues cited are that our brains do not multitask as we would like to think and that technology use makes us easily bored with things that do not pop, beep, or scroll (Sharma, 2014). The neuroscience of Internet addiction has found problems in the prefrontal cortex, or the area of the brain most associated with judgment, decision making, and impulse control; it undergoes major reorganization during adolescence, and has been shown to be weakened in functional MRI (fMRI) studies among Internet addicts (Brand, Young, & Laier, 2014). Studies also show that playing video games floods the pleasure center of the brain with dopamine (e.g., Han et al., 2007; Liu & Luo, 2015).

Imaging studies have found less efficient information processing and reduced impulse inhibition (Dong, Devito, Du, & Cui, 2012), increased sensitivity to rewards and insensitivity to loss (Dong, Hu, & Lin, 2013), and abnormal spontaneous brain activity associated with poor task performance (Yuan et al., 2013). With repeated use of screens, studies support that children are more likely to have an aversion to delayed reward whereas rapid response, immediate reward, and multiple windows with different activities characterized Internet behavior, reducing feelings of boredom or delayed aversion. This creates problems with skills that require concentration on single tasks such as reading books, which are linear and more line by line and page by page.

**Screen Addiction and Health**

Health can be considered on two levels, psychological health and physical health. When considering psychological health, issues of screen time impact a child’s moods and feelings. Earlier studies have shown that the use of technology has been found to alleviate depression through social support,
achievement, pleasure of control, and a virtual world to escape into from emotional difficulties (e.g., Young & Rodgers, 1998). However, too much Internet use can worsen the symptoms of depression and make depressed children particularly vulnerable to developing an Internet addiction (Chou, Liu, Yang, Yen, & Hu, 2015). High levels of depression and suicidal ideation (Park, Hong, Park, Ha, & Yoo, 2013) along with ADHD symptoms, depression, social phobia, and hostility were high among adolescents with Internet addiction in Taiwan (Ha et al., 2006; J.-Y. Yen, Ko, Yen, Wu, & Yang, 2007).

As with depression, children and adolescents who suffer from anxiety, especially social anxiety, are more likely to develop an addiction to technology (Weinstein et al., 2015). Adults who suffer from anxiety are more likely to use technology as a way of coping with stress, situational problems, and difficult life events such as the death of a loved one (Young, 1998). Young people with low self-esteem are likely to take more selfies and overuse social media for validation and likability, often easing their fears by spending more time retreating to an inner virtual world (Barry, Doucette, Loflin, Rivera-Hudson, & Herrington, 2017). Technology also enables youth who suffer from social anxiety and low self-esteem to hide behind their computer screens given the anonymous nature of electronic communication so that they can find comfort, acceptance, belonging, and companionship without the same face-to-face complications of relationship rejection, disapproval, and failure. Children were not able to overcome their social insecurities and fears when they can comfortably engage in online activities behind their screens that keep them from physically seeing other people.

Beyond the psychological concerns, there are physical risks that result from too much screen time. Think of a child who slumps over a tablet and devices all day. Early studies found that users who spent more time on computers were more likely to have suffered from back pain, eyestrain, carpel tunnel syndrome, and a number of repetitive injury disorders (e.g., Young, 1998). As technology is more portable and mobile, access is ubiquitous and young people are more sedentary in front of their screens instead of getting outside and playing. The more sedentary the lifestyle, the more children were likely to engage in irregular eating and poor sleeping patterns, and the lack of physical activity resulted in a higher occurrence of obesity (Li, Deng, Ren, Guo, & He, 2014).

Overuse of technology limits a child’s physical development due to lack of movement during use (Rosen et al., 2014). Movement enhances learning ability as well as the ability to focus and pay attention; therefore, the lack of movement would have a negative impact on literacy and academic development (Barrense-Dias, Berchtold, Akre, & Surís, 2015). Not only did the lack of physical activity due to screen time result in a higher incidence of obesity, but studies also found that the use of technology in children younger than 12 years was harmful to their future development. The lack of movement can cause children to become obese, contributing to major health problems and
putting them at a higher risk of early stroke, heart disease, and other serious health issues.

**Screen Addiction and Social Behavior**

Screens allow all of us to connect through texts, e-mails, and social media. This allows those who suffer from social phobias and anxieties, Asperger’s syndrome, and autism to find a safe place to retreat (Weinstein et al., 2015). Young people with social problems and fears are most at risk of developing technology addictions because the Internet can provide social support in a non–face-to-face setting. Adults as well as adolescents with social problems feel more relaxed and engaged online, and in serious cases, the use of technology replaces all social relationships.

Suffering from screen addiction can result in problems while socializing with other children. As children retreat into technology, electronic communication isolates them from others and there is a lack of face-to-face social interaction. In young children, the lack of social interaction may impair their ability to develop effective social skills, which hinders the ability to develop and maintain healthy relationships in adolescence and beyond. We may see children who do not know how to make friends, talk to the opposite sex, or just hang out and enjoy people’s company. The social awkwardness created by the isolationism of screens feeds the addiction, as the child is likely to retreat back to the online world where relationships are easier and already waiting for the child. Too much screen time can result in other social problems, such as conduct disorder and worse overall psychosocial adjustments. Children who fight to protect their screen time are likely to argue with their parents over screen use, disobey time limits, and react with aggression and even violence.

**MEDIA USE SCREENING**

When conducting a formal evaluation of a child, most often screen and Internet addiction is the not the primary presenting problem. Children and adolescents may be brought into therapy for other behavioral or psychiatric problems. Given the areas that co-occur with screen addictions such as anxiety and depression, it is important for therapists who treat children and adolescents to develop a media use screening tool to measure and profile their media use (e.g., reach, time spent) across all relevant forms of media including television, radio, and online. Screening helps to identify those who are at risk for development addiction problems, and identifying the addiction helps with treatment planning of the associated co-occurring conditions. Screening media use among children and adolescents can also help to measure behavior and attitudes of parents and caregivers in relation to their children’s media consumption.
Unfortunately, there is not one standard tool identified that effectively screens media use among children and adolescents and its impact. As a general guideline, therapists should consider asking questions related to all media types and ask how much time is spent on each of the following:

- Internet and computers
- TV and movies
- Video games
- Mobile media
- Music
- Reading and print media
- Social media

Therapists, school counselors, and teachers can gain an incredible amount of information about media use by going through this list and the responses give a good idea of the child’s level of risk for media-related problems. It is also helpful to engage parents and caregivers about media use at home and gauge their attitudes to the suitability of content on key media. For instance, do parents restrict TV programs that are unsuitable or restrict TV use in general? Do they react to challenging or inappropriate content that a child sees online? Do they know who their children talk with online or what kinds of mobile apps they use or what sites they visit? Do they have safeguards in place such as time limits or restricted places where a child uses devices?

**Signs of Addiction**

For many families, use of technology and digital devices happens early in a child’s life. It could be school-based use in preschool or a toddler who plays with a parent’s tablet. The therapist should evaluate media use in general and, among those children who seem to be heavy users of devices, screens, and technology, should evaluate signs of problem use of screens and digital devices. According to the Center for Internet Addiction, the following are the most common signs of screen and technology addiction where the term “technology” means any Internet activity completed on a computer, laptop, tablet, gaming console, or any other digital device:

- The child spends vast amounts of time engaged with technology.
- The child is constantly preoccupied by technology.
- The child withdraws from social situations, preferring to use digital devices.
- The child is tired and irritable because of inadequate sleep, and because of the overuse of technology.
The child announces that he or she is bored when he or she is not using digital devices.

The child withdraws from activities that he or she previously enjoyed, to pursue activities only on digital devices.

The child’s school performance is compromised because he or she is focused on technology.

The child has lied or hidden the extent of technology use.

The child has become angry or disobedient when you set time limits on technology use.

These signs in combination with screening for media use should give the therapist a clear sense of how technology and devices are used at home and in school. Broadly, these signs focus on behavioral symptoms where a child’s online usage interferes with his or her normal everyday activities such as getting ready for school, joining the family for meals, or attending sports practice. Other behavioral signs include: A child sacrifices needed hours of sleep to spend time online, a child disobeys time limits that have been set for Internet usage, a child has lost any interest in activities that were enjoyable before he or she had online access, and a child prefers to spend time using online applications rather than being with friends or family. When using this framework as an additional screening tool, three or more signs indicate addiction and further testing.

Media Use and the Parent–Child Internet Addiction Test

The younger a child is developmentally, the more his or her parents become a rich source of information. Just as parents are the first ones to suspect that their child is abusing alcohol or using drugs, they are the first to suspect that their child may have a problem related to their screen use. Parents usually notice some changes in their children and are in the best position to monitor their daily consumption of devices and technology. The Parent–Child Internet Addiction Test (PCIAT) assists in clinical evaluation of children suspected to suffer from Internet addiction (Young, 2016).

Based on the Internet Addiction Test (Young, 2016), a widely used screening measure used in clinical assessment, the PCIAT was developed to assess a child’s online use from a parent’s perspective (Figure 8.1). The PCIAT uses behavioral indicators of addiction to the Internet and technology along a five-point Likert scale (0 = not applicable, 1 = rarely, 2 = occasionally, 3 = frequently, 4 = often, 5 = always) where the parent selects the response that best represents the frequency of the behavior described in the following 20-item questionnaire.

After all the questions have been answered, the numbers for each response are added to obtain a final score. The higher the score, the greater the level of
addiction and potential for problems resulting from such Internet usage. The severity impairment index is as follows:

NONE: 0 to 30 points
MILD: 31 to 49 points: The child is an average online and screen user. He or she may surf the Internet a bit too long at times, but seems to have control of screen usage.

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**FIGURE 8.1 Parent–Child Internet Addiction Test (PCIAT)**

<table>
<thead>
<tr>
<th>Question</th>
<th>Score</th>
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<tbody>
<tr>
<td>1. How often does your child disobey time limits you set for online use?</td>
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<tr>
<td>2. How often does your child neglect household chores to spend more time online?</td>
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<tr>
<td>3. How often does your child prefer to spend time online rather than with the rest of your family?</td>
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<tr>
<td>4. How often does your child form new relationships with fellow online users?</td>
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<td>5. How often do you complain about the amount of time your child spends online?</td>
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<tr>
<td>6. How often do your child’s grades suffer because of the amount of time he or she spends online?</td>
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<tr>
<td>7. How often does your child check his or her e-mail before doing something else?</td>
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<tr>
<td>8. How often does your child seem withdrawn from others since discovering the Internet?</td>
<td></td>
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<tr>
<td>9. How often does your child become defensive or secretive when asked what he or she does online?</td>
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<tr>
<td>10. How often have you caught your child sneaking online against your wishes?</td>
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<tr>
<td>11. How often does your child spend time alone in his or her room playing on the computer?</td>
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<tr>
<td>12. How often does your child receive strange phone calls from new “online” friends?</td>
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<tr>
<td>13. How often does your child snap, yell, or act annoyed if bothered while online?</td>
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<tr>
<td>14. How often does your child seem more tired and fatigued than he or she did before the Internet came along?</td>
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<td>15. How often does your child seem preoccupied with being back online when offline?</td>
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<tr>
<td>16. How often does your child throw tantrums with your interference about how long he or she spends online?</td>
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<tr>
<td>17. How often does your child choose to spend time online rather than doing once enjoyed hobbies and/or outside interests?</td>
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<tr>
<td>18. How often does your child become angry or belligerent when you place time limits on how much time he or she is allowed to spend online?</td>
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<tr>
<td>19. How often does your child choose to spend more time online than going out with friends?</td>
<td></td>
</tr>
<tr>
<td>20. How often does your child feel depressed, moody, or nervous when offline, which seems to go away once back online?</td>
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</table>

*Note:* 0 = not applicable, 1 = rarely, 2 = occasionally, 3 = frequently, 4 = often, 5 = always.

*Source:* Young (2016).
MODERATE: 50 to 79 points: The child seems to be experiencing occasional to frequent problems because of the Internet and screen use. Therapists should further evaluate the full impact of technology on the child’s life and the impact on the family.

SEVERE: 80 to 100 points: Internet usage and screen time are causing significant problems in the child’s life, and most likely with the family and at school. Therapists should address the underlying problems and explore family dynamics, parental monitoring of screen use, and school issues.

INTERVIEWING ISSUES

The assessment of a child or adolescent today should include at the very least some media use screening tools or questions about media use. It is important to understand how children are using technology and devices in general. With a thorough media screening assessment and testing, a therapist has a clear sense of behavioral and functional analysis of technology use at home, school, and work for a child. For toddlers and very young children, therapists should also learn about their current media diets and watch for risky technology behaviors using the Problematic and Risky Media Use in Children Checklist (Figure 8.2).

Answers to the Problematic and Risky Media Use in Children Checklist should assess all screen use such as tablets, computers, laptops, TVs, smart

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**FIGURE 8.2 Problematic and Risky Media Use in Children Checklist**

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</table>
|   | 1. Does the child throw tantrums or become aggressive when he or she is asked to stop using screens?  
   |   | 2. Does the child become agitated when asked to stop using screens or feel better and calmer when using screens?  
   |   | 3. Does the child lie about screen use or hide himself or herself somewhere to sneak using devices?  
   |   | 4. Does the child show no interest in other things unless they are related to devices (e.g., playing nontech, going to school, playing with friends)?  
   |   | 5. Does the child prefer to spend time with screens than time with friends and is not interested in anything other than using screens and devices?  
   |   | 6. Does the child refuse to go to bed at night due to using screens and devices or has trouble sleeping without his or her devices?  
   |   | 7. Does the child seem preoccupied with using screens, and uses devices for increasing amounts of time?  
   |   | 8. Does the child find life to be boring without screens, and screen use is the only thing that seems to motivate the child?  

*Note: Answer yes or no to each question.*

*Source: Young (2015).*
phones, and any portable digital devices. Answering yes to at least three of these behaviors in children aged 3 years to 11 years indicates that they are exhibiting risky or problematic behaviors associated with excessive screen and device use.

**Rapport Building Among Internet-Addicted Children**

As Internet-addicted children often suffer from social anxiety, depression, and shyness, the ability to establish rapport with them in a clinical interview is very important. The place of the interview should be a neutral place, quiet and secure, and there should not be too many toys in the room, and definitely no computers, tablets, or devices, as this distracts the child. It is useful to keep the paper and crayons handy. Sit in such a way as to allow eye-level contact with the child. If a small child is sitting on the floor, sit on the floor as well. Do not talk sitting behind a desk or a table; it is better to sit at the table with the child, sitting close but not too close. Do not enter “the child’s territory,” as it might be too endangering for him or her. It is also important to consider general techniques for interviewing this type of child, such as:

- Use phrases containing only one question or one thought, simple words, simple tenses and short sentences, and do not use double negatives.
- Avoid the use of “if/then” statements and “yes/no” questions with young children.
- Be specific in your questions—young children are very literal.
- Always ask the child to explain the words or expressions that you do not understand, especially any media or technology terms with which you are unfamiliar.
- Adjust the pace of the interview according to the child’s abilities to open up.
- Control your emotions, the tone of your voice, and your mimics; do not show curiosity or shock, regardless of what the child says about his or her media and screen use.
- Move from general questions to more specific ones regarding a child’s media and screen use to encourage more honest communication and less defensiveness.
- Have a list of questions prepared (either in your head or on paper) to encourage more informal conversation with the child.

**Family Factors to Consider**

Studies have shown that family factors also influence a child’s media and screen use. For instance, being from a divorced family was a strong predictor for adolescent Internet addiction (J.-Y. Yen, Yen, Chen, Chen, & Ko, 2007).
a divorced family, either the mother or the father needs to support the whole family alone. The parent may work longer hours to support the family and the children are alone at home with their devices. Adolescents from divorced families may access the Internet to connect with friends as a means to relieve the insecurity developed in a single-parent family environment. In one case, Susie, a 13-year-old who lived with her mother after her father left them for another woman, said, “I was so sad after my dad left. My mom was never home that I relied solely on my friends and social media to get through my life.”

In other circumstances, overuse of the Internet for social interaction may stem from family conflict and poor family relationships (Kabasakal, 2015). In families with high conflict or dysfunction such as poor relationships or poor parent mental health perhaps due to depression or addiction (Lam, 2015), the family system breaks down resulting in inadequate parental monitoring over technology use. This increases the likelihood of problem behavior because of the lack of family interactions and communication, leaving children unsupervised and alone.

It is important to assess the presence of family conflict and poor family bonding, and specifically investigate the level of supervision or monitoring by a child’s parents. Severe family dysfunction implies inadequate familial resources, fewer shared decision-making and nurturing responsibilities, leaving it possible for parents to ignore their children and to ignore their device and screen use throughout the day. Children, in turn, feel a lack of support and guidance, and to compensate for possible psychological deficiencies, they connect more through the virtual world to build up relationships and gain a temporary sense of affection, inclusion, and belonging.

In addition to assessing the family dynamics associated with children and adolescents who spend too much time using screens and devices, it is important to understand how parents use their own screens and devices. Are parents modeling this type of compulsive use of screens? Do they frequently check their e-mail, Facebook, or Twitter accounts while watching their children? Do they use their screens constantly in front of their children? Or are parents very strict and have rules about Internet use? Where should therapists draw the line is fuzzy at best.

Some studies have found that there needs to be a balance between setting rules about Internet and screen use. For instance, van den Eijnden, Spijkerman, Vermulst, van Rooij, and Engels (2009) found that excessive parental control over the time of Internet use promotes the development of adolescent Internet addiction. When adolescents start growing up, they want more autonomy and independence, especially with technology, devices, and screens, and the parents who do the best job are those who serve as mentors to their children about technology, teaching them to avoid using screens as a way of coping with daily stressful life events and to balance screen use with their nonscreen lives.
Survey What Is Happening at School

Today, nearly all children use computers at school on a regular basis, but the amount varies considerably. Variables may include grade level, how high-tech the school is or wants to be, and how much the curriculum depends on classroom technology and mobile applications. Furthermore, with the growing population of school-aged children owning a mobile phone, the debate surrounding the role a phone plays within a classroom continues to cause controversy.

In 2007, New York City Mayor Michael Bloomberg implemented a statewide cell phone ban in classrooms, which affected more than one million school children; the ban was not popular (Monahan & Chapman, 2011). Bloomberg heard complaints from numerous disgruntled parents and students, while others took him to court over the policy. Despite the outrage, the Department of Education defended the ban (until recently), insisting that cell phones led students to cheat in class, participate in drug deals, and share inappropriate pictures.

Although many teachers say cell phones provide too much of an enticing distraction for students, others argue that cell phones can be useful in the classroom—for taking notes or doing research—but use needs to be monitored. Despite the controversy, schools continue to rely on technology in the classroom. It is therefore important to assess school-related screen time. Questions to ask include:

- How much interactive screen time does the child receive at school on a daily basis?
- How unregulated is the child’s screen time at school?
- How much do teachers use technology and mobile applications for the students?
- How much technology-related homework does the child get?
- How possible (or how complicated) would it be to remove or eliminate technology use and still achieve good grades in school?

For grade-school children, it might be worth observing the classroom to see how much screen time occurs in a typical day. It would also be important to assess whether the teacher uses video games and computer time as a reward for students. Often, classrooms rely on technology for teaching methods but with a little investigation, this evaluation may uncover that the student does not need technology to learn the class material, do homework, and pass the class. When developing a treatment plan, it would be helpful to talk with the teachers about strategies to reduce or remove screen time for doing homework and learning for the child or the teen. This is part of putting together screen-time goals to reduce use and, once the teachers understand, they work with the therapist to develop a time-management plan that still allows the child to participate in class.
“3–6–9–12” PREVENTION FOR SCREEN ADDICTION

What can parents do to help? Young children have far more access to media technology now than they did even just a few years ago. Technology is changing the nature of childhood. Parents need to be proactive in stopping and controlling how much screen time kids have on devices today. Children now rely on technology for the majority of their play, grossly limiting challenges to their creativity and imagination, as well as limiting necessary challenges to their bodies to achieve optimal sensory and motor development. Worse yet, when parents try to stop or control screen time, children react with defiance, disobedience, and even violence. It is important that children have different rules at different developmental ages. The 3–6–9–12 prevention for screen addiction outlines steps parents can take at each developmental age (Young, 2016).

Birth to 3 Years Rules: Never/Nowhere

No technology; this includes smartphones, computers, and TVs. The American Psychiatric Association (APA) states no screen use at this age bracket. It is vital that parents stay committed to this. Any screen time impairs social communication, development, and a child’s attachment to the parent or other family members. If children are completely disconnected from technology, they have time to develop relationships with others, and can develop other needed sensory–motor skills by playing with physical toys, reading, and building relationships with other children.

3 to 6 Years Rules: 1 Hour a Day

At this age, children should be introduced to technology under careful parental supervision. Parents too often give a child a tablet or smartphone as a “babysitter” or a reward for good behavior. This is a crucial time in childhood development for learning prosocial behavior and social behavior. Keep children involved in activities away from the computer and avoid multiplatform portable devices (e.g., phones, tablets, laptops). If children are exposed to too much screen time at this age, aggressive behavior and impulsivity result. Allow use only in public areas of the home and block video games and pornography.

6 to 9 Years Rules: Supervised Use

Children need to balance technology with social and physical behaviors. We have a major obesity crisis in America partly because of kids sitting and using their technology devices and not getting exercise. Now that children
have passed the physical milestones of mastery of running and kicking, and bending over without falling, screen use may include games that the entire family can play on gaming consoles. It is important that this screen time is a family bonding experience. Some of the best all-ages games are Just Dance Kids and Epic Mickey. If parents are not sure about a game’s content, the Entertainment Software Rating Board app (it is free) will help parents judge the game’s appropriateness. Parents still need to control use and avoid multiplatform portable devices as these are hard to monitor; if used, children can be allotted 2 hours of screen time per day under close parental supervision with blocked access to video games and pornography. At this age, children need to be mentally and physically stimulated through reading, taking nature walks, riding bikes, getting involved in school and sport activities, making friends at school, and spending time with family. Parents need to create sacred family time with no technology.

9 to 12 Years Rules: Integration

At age 9 to 12 years, as children cognitively develop, it is important that they understand that not all media are educational. Their lessons can be either accurate and healthful, or misleading and harmful. This is a time for parents to help their children be mindful about the videos they watch, the sites they visit, and the games they play, by talking about the messages portrayed and what it means to them and why. At this age, teach tweens to hone their media literacy skills by thinking critically about the TV shows, movies, and advertisements they see.

12 to 18 Years Rules: Independence

As children enter the teenage years, they want independence. Rules of the house usually change as children can now stay out later, or meet friends at parties, or by the age of 16 years start to drive. These are all signs of independence and screen use is no different. At this age, teenagers desire their own social media accounts and demand privacy and unsupervised online time.

*Digital diet* and *digital nutrition* are important at this age. If parents grant unrestricted use, have the child maintain a digital log. This is so important and can provide parents with updates on their child’s time online. A digital log helps teenagers keep track of their own media use as well. Too much time online, like too much food, can result in harmful habits. A digital log helps track a child’s balanced digital diet without hovering over their daily online use.

Regarding digital nutrition, this is a time to help children make better choices about their activities online. Do they play video games all day
or are they doing homework? Are they using social media or are they researching a paper for school? Like food addiction, online use is about making healthy choices. Instead of the candy bar or bag of chips, it’s better to snack on vegetables. Good digital nutrition can be the difference between a young person gaming for hours or learning through educational apps and websites. It means that as an independent teenager the technology is used responsibly.

CONCLUSION

The latest study by Common Sense Media, a nonprofit organization that tracks children and their use of technology, surveyed more than 2,600 teenagers (aged 13–18 years) and tweens (aged 8–12 years). Their findings showed that tweens spend almost 6 hours a day on entertainment media and teenagers spend almost 9 hours per day. The study suggested that kids spend more time with media and technology than with their parents, at school, or on anything else. Further studies on screen addiction show that children and adolescents who sit in front of screens are more at risk to develop problems in attention, psychological and physical health, and social behavior.

At young ages, children are more likely to suffer from problems with attention deficit disorders due to the point-and-click mentality of screens. They also show problems with depression and social anxiety because of overuse of screens and hide behind screens as a way of coping with their feelings, or use online friends to find friendship, comfort, and support. Children who overuse screens suffer from physical inactivity caused by the sedentary lifestyle associated with screen use and the lack of motor play because of sitting in front of screens. This may ultimately lead to obesity in children. Children who overuse screens are more likely to be isolated from socialization with other children and friends; they also suffer from obedience problems, conduct disorder, Asperger’s syndrome, and other social issues in peer group relationships.

Remedies to deal with these issues include limiting TV exposure (especially background TV) before the age of 2 years, which is well advised. When we think about parenting issues, contextual factors such as maternal depression, trauma, work/life stress, and social economic status should be assessed as part of the family dynamics. It is also important to assess children characteristics such as attention deficit risk, family history, genetic background, temperament, self-regulation, motor coordination, and opportunities to engage in the community and with friends should be assessed. Issues within the family such as family attachment, sibling attachment, parental stress index, and parenting style should be assessed. As part of the prevention, identifying children at greatest risk for addiction is also important. Children with preexisting psychosocial morbidities may be at greatest risk, and their
Internet and technology usage should be more explicitly monitored and regulated by guardians and protectors.

Finally, at the earliest possible age, parents should be mindful of the impact of their own media use, including smartphones and tablets, on their interactions with their infants and toddlers. Parents should be encouraged to interact with toddlers and touchscreen devices (including e-books) in much the same way they are encouraged to use and interact with children while reading traditional books. Media diets should be rich in educational content, but heavy screen media use should be discouraged, especially when children are beginning to learn to read.

REFERENCES


