

# Electronic Screen Media Use in Youth With Autism Spectrum Disorder



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## KEYWORDS

- Autism spectrum disorder • Electronic media • Social media • Screen time
- Internet addiction • Technology-aided interventions • Family media interventions
- Healthy media use

## KEY POINTS

- Extended screen time has a multitude of harmful effects on typically developing youth and those with autism spectrum disorder, including but not limited to physiologic, cognitive, social, emotional, and legal/safety effects.
- Youth with autism spectrum disorder may be even more at risk than typically developing peers for many of these harmful effects.
- Several technology-aided interventions have emerged to help youth with autism spectrum disorder across multiple domains, including social skills, behaviors, communication, academic learning, and adaptive functioning.
- Parents of youth with autism spectrum disorder may benefit from several recommendations and resources from the American Academy of Pediatrics and the American Academy of Child and Adolescent Psychiatry.

## INTRODUCTION

Electronic screen media (ESM) play an increasingly prominent role in the lives of children and teenagers. Many typically-developing (TD) youth use media not only for entertainment, but also as a primary form of communication, learning, information gathering, social support, and self-expression.

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Special care must be given to those with autism spectrum disorder (ASD) in the new media environment. The core features of ASD place many individuals at risk for over-use and improper use of ESM, which could result in harmful consequences.

At the same time, the compelling nature of ESM might provide motivation for some youth with ASD to engage in technology-aided interventions (TAI) resulting in improved outcomes. This article discusses these interventions, along with some potential family-oriented interventions.

### **SCOPE OF MEDIA USE IN YOUTH WITH AUTISM SPECTRUM DISORDER**

Youth with ASD watch more television than TD matched peers,<sup>1</sup> and spend approximately 4.5 hours a day on screen time with 2 or less hours dedicated to nonscreen activities.<sup>2</sup> Youth with ASD spend most of their free time on screens compared with 18% of TD peers, and youth with ASD play video games an average of 1 hour more per day than TD peers<sup>3</sup> and tend to have a preference for video games over television.<sup>4</sup>

The difficulty for youth with ASD in disengaging from ESM is further elaborated in parental responses to the Problem Video Game Playing questionnaire. Parents of boys and girls with ASD report snapping, yelling, or getting angry if someone interrupts them while playing video games, and thinking life would be boring without video games more than parents of gender-matched TD peers.<sup>2</sup> The parents of ASD boys reported their child playing video games longer than they intended to and saying, “just a few more minutes,” and the parents of ASD girls reported that their child plays video games too much, both significantly more than gender-matched TD peers.

Potentially more important than ESM use patterns in youth with ASD is that most do not seem to be using ESM for social purposes. More than half of youth with ASD have never played with a friend over electronic media, and only 15% of youth with ASD engage friends in this manner on a weekly basis.<sup>2</sup> A total of 64% of children with ASD use media in a nonsocial way, such as playing video games alone or with strangers, or surfing gaming Web sites. Most do not use any form of online communication via e-mail, instant messaging, chat rooms, or social networks. Although only 13% reported using media for social purposes, youth with ASD who identified as girls, Hispanic, and having higher cognitive skills did use media for social purposes significantly more than matched youth with ASD.<sup>3</sup>

### **THE UNIQUE INTERPLAY BETWEEN AUTISM SPECTRUM DISORDER SYMPTOMS AND MEDIA**

In the last two decades, the prevalence rate of ASD has risen two-fold and now stands at 1 in 68 children. ASD awareness has correspondingly soared through increased media coverage, culminating in the recent introduction of a new character with Autism (Julia) on PBS' Sesame Street television series.

Simultaneous to this spike in ASD prevalence, access to ESM overall has increased exponentially, doubling over a 2-year period between 2011 and 2013.<sup>5</sup> Children with ASD, who already have a strong predilection for ESM,<sup>6</sup> currently receive unprecedented daily exposure to ESM beginning in infancy.<sup>4,7</sup> Research is currently underway in infants, toddlers, and children to determine if exposure to ESM can increase the risk for a child developing ASD, but published literature is still in its early development and no firm conclusions can be drawn.<sup>8</sup>

The exact cause of autism, although currently unknown, is almost certainly a complex interaction between genetic, environmental, and epigenetic factors. Research has implicated upwards of 1000 associated genes<sup>9,10</sup> and ASD has a high rate of

heritability and genetic loading. Both youth with ASD and their parents have an increased likelihood of being proficient at technology compared with TD peers. This, combined with a predilection for technology, potentially increases their risk for excessive ESM usage. The higher prevalence of ASD in technology epicenters, such as Silicon Valley and Eindhoven, Netherlands, may be a window into the future regarding the interplay between genetics and environment in the areas of ASD and technology.

Youth with ASD seem to have a unique relationship with technology. Family members often report that loved ones with ASD possess technological “splinter” skills that far exceed those expected for their chronologic age and other areas of development. Challenges to appropriate use of ESM arise if youth with ASD outpace their parents and providers in their technological capabilities. For example, it may be difficult for parents to successfully monitor social media usage or World Wide Web browsing history if their child is particularly skilled and able to conceal such information.

Individuals with ASD also perform better on certain tasks using ESM compared with traditional materials, while generally being more attentive and motivated.<sup>11</sup> Youth with ASD can improve their social skills using a wide array of ESM modalities, including video games<sup>12</sup> and a variety of software applications and hardware. TAI can help improve executive function skills in youth with ASD, a common area of impairment, albeit not part of the Diagnostic and Statistical Manual–Fifth Edition criteria or unique to ASD.<sup>13</sup> Repetitive and disruptive behaviors also seem responsive to TAI. Furthermore, ESM has made a significant impact on the education of youth with ASD in the last several decades, aiding in language development and academic learning.<sup>14</sup> However, response to ESM may be limited, because some youth with ASD struggle to process and organize information from multimedia interventions.<sup>15</sup> See **Table 1** for additional details on the benefits and potential risks of technology use in youth with ASD.

### SEQUELAE OF UNHEALTHY AND IMPROPER ELECTRONIC AND SOCIAL MEDIA USE IN YOUTH WITH AUTISM SPECTRUM DISORDER AND FAMILIES

Unhealthy and improper use of ESM is associated with several negative outcomes, many of which could disproportionately impact youth with ASD and their families in a detrimental way.

Potential Benefits	Autism Symptoms, Deficits	Potential Risks
<ul style="list-style-type: none"> <li>• Can help with social skills, joint attention</li> <li>• Can promote language development</li> </ul>	Social and communication deficits	<ul style="list-style-type: none"> <li>• Tendency is to use technology nonsocially</li> <li>• Cyberbullying</li> <li>• Increased social isolation</li> </ul>
<ul style="list-style-type: none"> <li>• Can reduce repetitive behaviors</li> <li>• ASD patients have an affinity for technology</li> </ul>	Restricted, repetitive interests, behaviors, and activities	<ul style="list-style-type: none"> <li>• Difficulty detaching from device</li> <li>• Risk of Internet addiction</li> </ul>
<ul style="list-style-type: none"> <li>• May learn more efficiently using technology</li> <li>• Can be used to build executive functioning skills</li> </ul>	Cognitive and executive functioning	<ul style="list-style-type: none"> <li>• Possible increased risk for attention-deficit/hyperactivity disorder</li> <li>• May interfere with sleep</li> </ul>

## **Physiologic**

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### **Obesity**

The positive correlation between ESM use and body mass index has been well established in the medical literature for TD youth. Youth with ASD who are heavy media users may be especially at risk for obesity. Youth with ASD are more likely to be overweight or obese than TD peers.<sup>1</sup> Barriers to physical activity in youth with ASD are many and such barriers have been positively correlated to screen time.<sup>16</sup>

### **Sleep**

Children with ASD are also more likely to experience sleep difficulties than matched TD peers, such as shorter total sleep time, longer sleep latency, and decreased sleep efficiency.<sup>17</sup> The suppression of melatonin levels associated with nighttime tablet use could serve to worsen these sleep difficulties.<sup>18</sup>

Bedroom access to a television or computer is more strongly associated with sleep disturbances in youth with ASD than those with attention-deficit/hyperactivity disorder (ADHD) or TD control subjects, and this effect was mediated by the number of hours spent playing video games.<sup>19</sup> Another study found that youth with ASD who use media within 30 minutes of bedtime have significantly greater sleep-onset delays and shorter overall sleep duration compared with youth with ASD without bedtime media.<sup>20</sup> The access to media in the bedroom of these youth did not seem to have any impact on sleep as it did in the aforementioned study.

### **Internet addiction**

Preliminary data from Japan suggest the prevalence of Internet addiction may be higher in youth with ASD, especially those with comorbid ADHD.<sup>21</sup> This makes sense given the tendency for youth with ASD to use more ESM, having more difficulty separating from ESM, and being prone to restricted interests and repetitive behaviors. Internet addiction has widely been associated with several negative neurobiologic correlates.

## **Social**

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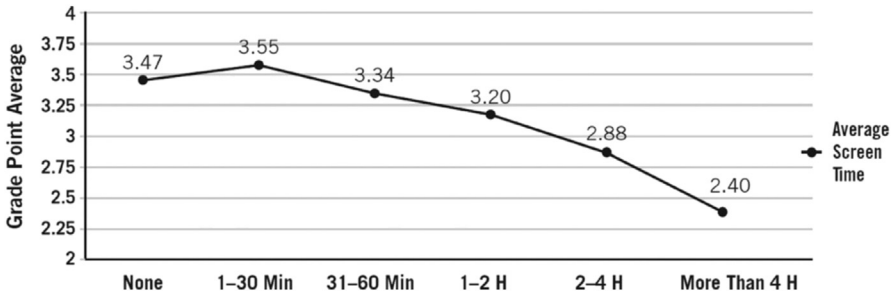
As ESM continues to emerge, a few studies have examined its potential impact on social skills, communication, and peer relationships in TD youth. These studies are highly applicable in ASD.

One study found that 11-year-olds who spent 5 days at an outdoor education camp without any access to media perform significantly better at reading facial expressions and interpreting nonverbal cues than control subjects who had stayed at home and used media without restriction.<sup>22</sup> Another study found electronic media use correlated to lower friendship trust, disrupted communication, increased rate of peer conflict, and feeling alienated.<sup>23</sup> Although using forms of messaging were positively associated with quality relationships, chat rooms and video games predicted decreased quality of such relationships. Lastly, Valkenburg and Peter<sup>24</sup> found that those who communicate online with existing friends show that technology positively impacts the closeness of their real-world friendships. However, the same was not true for those who talked with strangers or played independently.

## **Cognitive**

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Increased screen time is correlated with decreased grade point average (**Fig. 1**), increased time spent on homework, inattention, impulsivity, off-task behavior, social isolation, difficulty making friends, decreased activities, social-emotional difficulties, mood volatility issues, and sleep-onset latency issues in TD youth.<sup>25</sup> Many of these are known areas of difficulty for youth with ASD.



**Fig. 1.** Grade point averages by screen time per day for children in secondary school. (From Pressman RM, Owens JA, Evans AS, et al. Examining the interface of family and personal traits, media, and academic imperatives using the learning habit study. *Am J Fam Ther* 2014;42(5):356; with permission.)

### **Emotional**

Although youth with ASDs are more likely to be bullied than their TD peers,<sup>26</sup> literature on cyberbullying in ASD is limited. Cyberbullying is associated with negative social, academic, and health consequences.

According to the American Academy of Pediatrics, ESM use patterns are an important harbinger of mood disturbances.<sup>27</sup> Extremes of Internet use and passive social media use are correlated to increased depression and decreased life satisfaction. These data remain highly limited.

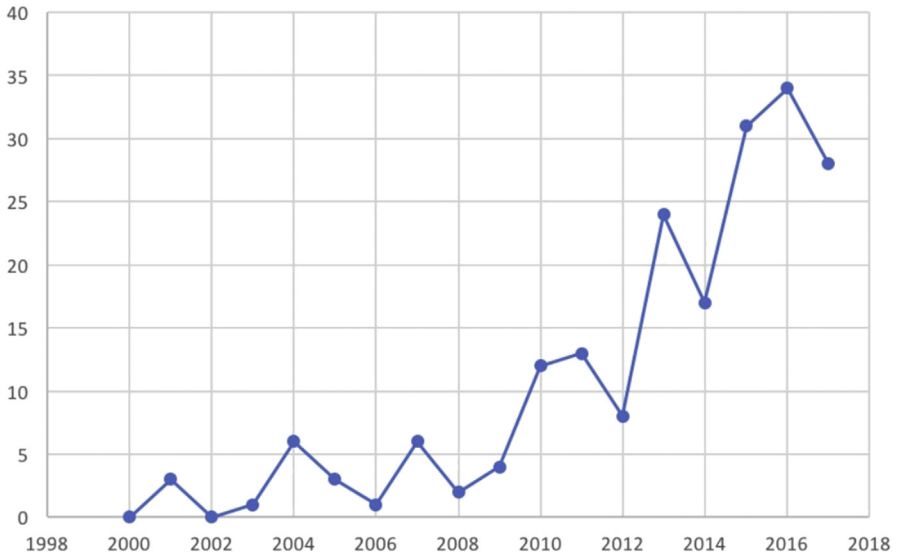
### **Legal/Safety**

Youth with ASD may especially be at risk for impulsivity that is coupled with social naivety, judgment difficulties, and an incomplete understanding of the ramifications for their actions. Inappropriate communications of a sexual or violent nature could result in a host of potential legal ramifications for youth with ASD. Such youth are also at increased risk of exploitation from others in the form of abuse or financial exploitation.

## **TECHNOLOGY-AIDED INTERVENTIONS FOR YOUTH WITH AUTISM SPECTRUM DISORDER**

Children with ASD can potentially learn more efficiently from computers than from in-person teachers<sup>14</sup> and technology has been used to assist children with ASD for more than 40 years, beginning with early augmentative and assistive communication devices to promote language development. Since the introduction of the iPhone in 2007, there has been a massive shift away from desktop applications and toward mobile devices, along with a simultaneous explosion in publications on TAI for youth with ASD (Fig. 2). Results of these interventions seem promising overall, and a recent published meta-analysis confirmed the overall effectiveness of technology-based training.<sup>28–39</sup>

Youth with ASD use a vast array of overlapping technologies and platforms comprising various permutations of Internet-connected hardware and software, including applications or “apps” (Fig. 3). Autism researchers are actively studying individual aspects of the information in Fig. 3, but typically only after the technology has been in broad use among youth with and without ASD. Furthermore, the authors know of no published studies using interventions incorporating multiple elements of the Fig. 3, which may be more representative of actual day-to-day use. For example, it



**Fig. 2.** Number of relevant articles returned on PubMed using search terms “Technology Treatment Autism” or “Technology Intervention Autism” for the years 2000 through 2017. Note that the number of articles for 2017 is projected based on publications through the first half of 2017.

would be valuable to research how artificial intelligence implemented through a digital assistant, such as Apple’s Siri, across desktop, mobile, and wearable devices may be able to improve functioning in youth with ASD. The authors summarize research findings in key areas next.

### ***iPad/Tablet***

iPad and tablet technology for patients with ASD has evidence supporting efficacy in many areas, most significantly for enhancing and developing language, targeting social deficits and problem behaviors, and improving academic and adaptive functioning (Fig. 4).

### ***Social Media/Web Sites***

Social networking sites (SNS), such as Facebook, Instagram, Twitter, and Snapchat, are now ubiquitous, and represent a significant opportunity for clinicians to study social media usage in youth with ASD and potentially intervene. There is evidence supporting the use of SNS for nonanxious youth with ASD to build friendships.<sup>40</sup> Furthermore, parents benefit from support and information about ASD treatment they receive from other parents on SNS.<sup>41,42</sup> YouTube can be used for delivery and as a data gathering tool by clinicians implementing the picture exchange communication system, an intervention that provides alternative communication strategies and tools for individuals with severe language delay.<sup>43</sup> Overall, data in SNS and ASD are still emerging.

Importantly, youth with ASD are particularly vulnerable to bullying across physical settings and may be at risk for cyberbullying, because they struggle to detect or appreciate the subtleties of nonverbal communication while online.<sup>22</sup> It is therefore important for parents and clinicians to keep in mind that youth with ASD are often

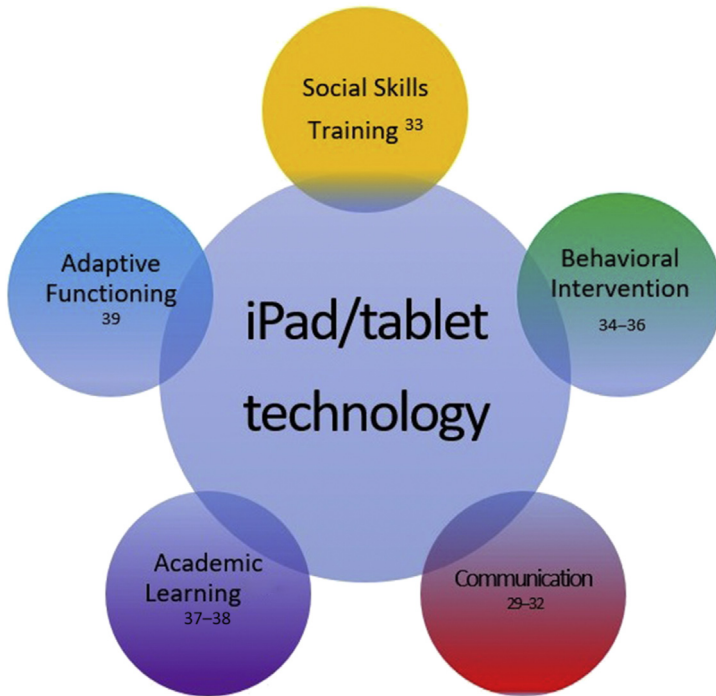


**Fig. 3.** Overview of technologies used by youth with ASD. The use of technology by youth with ASD involves extensive overlap between various hardware and software platforms, nearly all of which are connected to the Internet. Robot technology is on the rise and is likely to enter everyday use within some, or even throughout all, of the circles soon (see section on future directions). (Xox Courtesy of Microsoft, Redmond, Washington; with permission.)

less mature relative to their chronologic age or physical development and their autism symptoms do not “disappear” once they go online.<sup>44</sup> In clinical practice, many parents express fears about their children being victimized by peers or overage individuals while online. It is therefore strongly recommended that parents provide close supervision when their child uses social media.

### **Video Games**

Youth with ASD spend more time playing video games compared with their TD peers. Although video games are primarily used recreationally, they can be used to improve vocabulary, communication, empathy, and social skills. Notably, the use of video games by youth with ASD, similar to TD youth, has not been shown to result in increased aggression, even when playing violent games.<sup>45</sup> However, playing video games can worsen sleep problems in boys.<sup>19</sup> In addition, video games can be more addictive and more overused for boys with ASD compared with boys with ADHD. See Mazurek and Wenstrup<sup>2</sup> and Ferguson and colleagues<sup>46</sup> for a detailed review on the use of gaming by youth with ASD.



**Fig. 4.** The use of iPad/tablet technology for patients with ASD and corresponding references.

### ***Desktop Computer Software***

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Among numerous desktop-based interventions, TeachTown is a standout software program. Implemented in multiple US school districts, TeachTown has evidence indicating its ability to improve independent living skills, enhance community skills and safety, and improve executive functioning skills.<sup>47</sup>

### ***Online Games***

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Several online role-player games, such as World of Warcraft and Minecraft, can provide youth an opportunity to practice social skills and develop friendships. Autcraft is a customized Minecraft server environment created by individuals with ASD and designed to minimize bullying and the destruction of other people's creations (**Fig. 5**). The site aims to allow users to feel safe and confident online (see [Autcraft.com](http://Autcraft.com) and YouTube video posted by the founder of Autcraft for additional details).

### ***Wearable Technology***

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Wearable technology is beneficial in multiple ways for youth with ASD including the following<sup>48-51</sup>:

- Assessing movements in high-risk neonates
- Monitoring autonomic response to behavioral interventions
- Monitoring to prevent elopement and wandering behaviors
- Monitoring self-regulation and intervening when needed
- Aiding in the physiologic detection of anxiety
- Characterizing the response to social cues through eye-tracking



A recent pilot study using the Apple Watch demonstrated that visual scene cues can be successfully provided in a real-time manner to supplement language in youth with ASD.

Multiple scientific teams are currently developing software for the Google Glass wearable platform designed to aid in real-time conversations outside the clinical setting. Preliminary data indicate that the use of Glass as an intervention for youth with ASD may be feasible, acceptable, and possibly effective.<sup>52,53</sup>

Virtual reality seems promising for the enhancement of social skills and treatment of social anxiety in youth with ASD<sup>54–58</sup> and for job training in young adults. Virtual reality has also been shown to be helpful for the acquisition of driving skills in adolescents with ASD,<sup>59</sup> a finding with major implications relevant to overall adaptive functioning and independent living skills.

## FUTURE DIRECTIONS

Autism combines in myriad ways with the fast-moving and ubiquitous technological advancements of the day. Within the flurry of activity and innovation in the area of ASD and TAI, there are several key trends that are likely to continue. First, development of interventions based on mobile platforms has grown exponentially in the last 10 years and will likely be the foundation of future innovation. Mobile and wearable devices can now recognize where the user is, how they are moving, and what they are doing, all while gathering information about their surroundings. Artificial intelligence can assist youth with ASD in conversational skills and will be integrated within virtual reality platforms. This will likely result in the development of devices that can help youth with ASD navigate through the surrounding environment and interact with people and more effectively than ever.

Second, robot technology seems to be on the verge of broader implementation for the treatment of core deficits in youth with ASD,<sup>60–62</sup> including social/communication symptoms and repetitive behaviors. Reasons for this trend include the affinity of youth with ASD for robot technology and the rapid development of robots that seem human or “humanoid” and therefore enhance engagement (Fig. 6).

Third, social media posting will likely evolve more toward video posts rather than still images. Such applications as Snapchat, Facebook Live, Twitter Periscope, and the video chat application House Party help users feel like they are “actually there” with

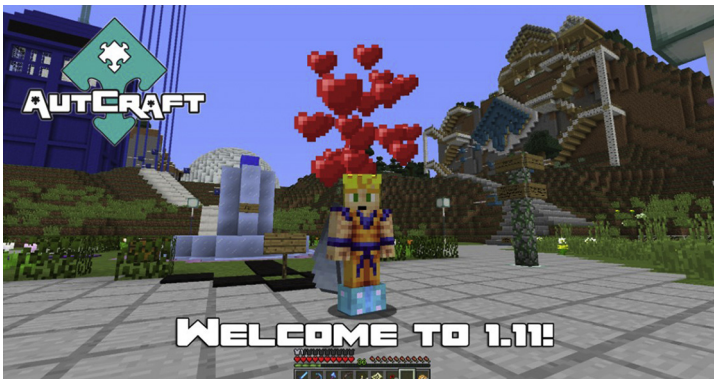
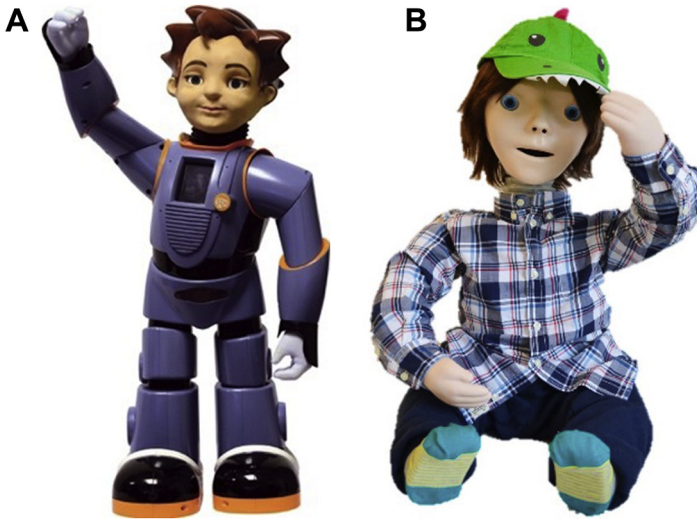


Fig. 5. Screenshot from [Autcraft.com](http://Autcraft.com). (Courtesy of Autcraft, Timmins, Canada; with permission.)



**Fig. 6.** (A) Milo and (B) KASPAR. Examples of robots designed for use in teaching social/communication skills to youth with ASD. (Courtesy of [A] RoboKind, Dallas, Texas; with permission; and [B] Zuyd University of Applied Sciences, Heerlen, Netherlands; with permission.)

each other in real time. This is an exciting possibility, but as noted in several tragic events recorded using social media, the posting of live video will continue to generate logical ethical concerns and discussion.

Fourth, emerging technology has the potential to blur the lines between fantasy and reality for youth with ASD. Products in development, such as Gatebox (see [gatebox.com](http://gatebox.com)) will soon provide users with a holographic friend/companion based on their favorite fantasy character. These friend/companions will be programmed to keep in contact with the user throughout the day using friendly text messages until the user arrives home. This technology has the potential to provide individuals with ASD much sought-after unconditional companionship. However, the ramifications of bringing such a fantasy character into the user's real life are currently unclear.

One challenge ASD research faces is the rapid adoption and use of technology before the validation of its use as evidence-based. Odom and colleagues<sup>63</sup> points out that the excitement and ubiquity of technology resulted in the "unbridled adoption of applications and equipment with little regard for, or knowledge about, the efficacy of such approaches, or their potential collateral effects," including use of technology in the classroom for children in kindergarten.<sup>22</sup> Psychiatrist are likely to work with many families who implement technological interventions for their children without gathering input from said psychiatrist. Although technology is undoubtedly exciting as a possible treatment modality for youth with ASD, ethical issues and healthy debate concerning its risks and benefits will certainly arise. Taking a nonjudgmental approach when working with parents who may lean heavily on ESM to manage or soothe their child's behavior may be beneficial for many psychiatrists. Furthermore, each individual child represents an "N = 1," so supporting parents' implementation of "whatever works" may be useful.

Providers can play a leadership role in the dissemination of evidence-based information about technology and ASD. For example, multiple academic institutions have well-developed Web sites containing information for parents and families about

treatment options and the latest development in the field. However, the demand for evidence-based information currently far outstrips the supply. With upwards of 3000 scientific articles published on ASD yearly, perhaps the next role for technology in its relationship with ASD is to serve as a fulcrum for disseminating evidence-based information to families, providers, and stakeholders in a unified way.

## RECOMMENDATIONS FOR FAMILIES

### *The Complex Interplay Between Electronic and Social Media Use in Autism Spectrum Disorder and Family Dynamics*

Many parents of youth with ASD find the management of electronic media to be a source of distress in the family.<sup>64</sup> Approximately half of such families have identified rules on media use, and even those who endorse having rules admit that such rules are ineffective.<sup>65</sup> **Table 2** outlines and categorizes risk factors that lead to negative outcomes.<sup>25,27,65</sup>

#### *General Recommendations for Families*

Great care should be taken in educating youth with ASD and their families in the clinical and school settings such that there is an adequate understanding of the potential consequences for inappropriate and unhealthy use of ESM. The American Academy of Pediatrics Media and Communication Toolkit<sup>27</sup> includes a user-friendly platform called the Family Media Plan that allows families to easily create and print a plan that works for them. The American Academy of Child and Adolescent Psychiatry also has several informative resources for families in the Facts for Families Guide. Some of these recommendations are summarized in **Table 3**.

#### *Adaptations for Youth With Autism Spectrum Disorder*

Youth with ASD may especially struggle with healthy and proper ESM use given the core symptoms of their condition. Restricted interests and repetitive behaviors, social and pragmatic communication difficulties, developmental delay, and difficulty with transitions can all create unique challenges for families. Thus, we have adapted some of the recommendations for families of youth with ASD (**Fig. 7**).

#### *Taking an Electronic Screen Media History*

Because ESM can be such an integral part of their lives, obtaining a detailed history on ESM usage is helpful during the work-up and management of patients with ASD. The authors list suggested items to gather during the clinical interview in **Table 4**.

Home/Parent Factors	Child Factors	Negative Outcomes
<ul style="list-style-type: none"> <li>• Inconsistent parenting</li> <li>• Parental coercion and spanking</li> <li>• Exposure to inappropriate media</li> <li>• Heavy parental use</li> <li>• Constant media background noise</li> <li>• Screen as pacifier</li> </ul>	<ul style="list-style-type: none"> <li>• Temperament</li> <li>• Externalizing behaviors</li> <li>• Self-regulation and social-emotional problems</li> <li>• Difficulty disengaging</li> <li>• Resistance to limit setting</li> <li>• ASD-related barriers</li> </ul>	<ul style="list-style-type: none"> <li>• Increased child screen time</li> <li>• Decreased executive functioning in child</li> <li>• Decreased verbal and nonverbal parent-child interaction</li> <li>• Poorer family functioning</li> <li>• Decreased child play/development</li> </ul>

Abbreviation: ASD, autism spectrum disorder.

**Table 3**  
**Summary of recommendations from American Academy of Child and Adolescent Psychiatry Facts for Families guide on use of electronic screen media in children and adolescents and the American Academy of Pediatrics Media and Communication Toolkit for Families Recommendations**

0–18 mo	18–24 mo	2–5 y	6–12 y	Adolescents
<ul style="list-style-type: none"> <li>• Avoid screens completely</li> <li>• Hands-on activities with human engagement facilitate normal cognitive, motor, language, and social-emotional development</li> <li>• Most time should be spent in hands-on activities without media in the child's environment</li> </ul>	<ul style="list-style-type: none"> <li>• Most time should be spent in hands-on activities without media</li> <li>• Very brief intervals</li> <li>• Focus on high-quality educational programming</li> <li>• Parents watch with children and explain content</li> </ul>	<ul style="list-style-type: none"> <li>• Most time should be spent in hands-on activities without media</li> <li>• &lt;1 h per day</li> <li>• Still emphasize educational and age-appropriate programming</li> <li>• Parent still watch with children and explain content</li> </ul>	<ul style="list-style-type: none"> <li>• Consistent time limits</li> <li>• Limit types of media</li> <li>• Monitor sleep, physical activity, and behavioral health effects</li> <li>• Screen-free zones: bedroom, dinner table</li> <li>• Screen-free times: meals, bedtime, family interaction</li> </ul>	<ul style="list-style-type: none"> <li>• &lt;2 h per day</li> <li>• Media-free zones and times</li> <li>• Ongoing education and communication</li> <li>• Parental supervision and limit setting</li> <li>• Parental modeling of healthy use</li> <li>• Limit media use when doing homework</li> </ul>

Data from American Academy of Child and Adolescent Psychiatry Facts for Families: Children and screen time. Available at: [https://www.aacap.org/AACAP/Families\\_and\\_Youth/Facts\\_for\\_Families/FFF-Guide/Children-And-Watching-TV-054.aspx](https://www.aacap.org/AACAP/Families_and_Youth/Facts_for_Families/FFF-Guide/Children-And-Watching-TV-054.aspx). Accessed November 10, 2017; and AAP Council on Communications and Media. Media use in school-aged children and adolescents. Pediatrics 2016;138(5):[pii:e20162592].

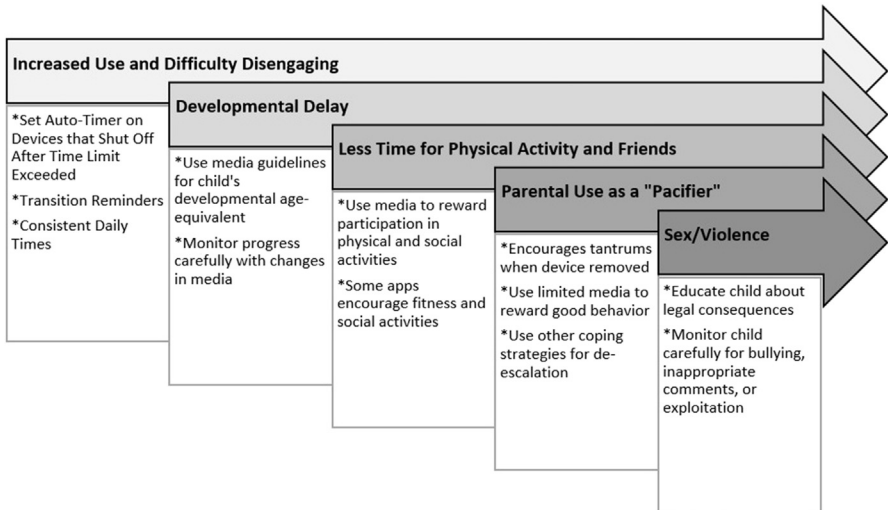


Fig. 7. Recommendations for healthy use of electronic screen media in youth with ASD.

**Table 4**  
Taking an electronic screen media history

Quantitative	Qualitative
Hours per weekday	Activity (eg, offline games, online games, social media, email, YouTube, school work)
Hours per weekend day	Type of games (if applicable): individual, online, role-player
Length of time between last use of ESM and going to bed	Emotional reaction of the child to parents setting limits on ESM

### **Final Recommendations**

Electronic screen media presents as an opportunity for youth with ASD to improve their symptoms and as an activity with significant inherent risks. Although parents may feel unable to fully understand their child's ESM activities, active engagement can enable parents to learn about their child's usage and help navigate through the complex world of technology. Given their vulnerability secondary to a high affinity for technology and accompanying social deficits, youth with ASD will no doubt benefit from the active involvement of parents to monitor ESM usage and set appropriate limits. By gathering history on ESM usage during the clinical interview and incorporating this information into a comprehensive treatment plan, psychiatrists can better relate to their patients and potentially optimize outcomes and quality of life for youth with ASD and their families.

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