



The Curse And Blessing Of The Electronic Era:

How to safeguard our children and set healthy boundaries

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During a recent American Psychology Association (APA) conference, Dr. Vivek Murthy, surgeon general of the United States of America, stated that the exposure of our children to electronics is an uncontrolled experiment of which we do not know the outcome.

Dr. Shifrin, a pediatrician who served as the American Academy of Paediatrics' consultant to Microsoft during its development of a Windows XP family safety setting, describes the current world of social media as "the world's largest cocktail party, where you'll encounter every kind of experience and personality imaginable. It's not inherently good or bad, but rather a great uncontrolled experiment on our children."

The American Academy of Pediatrics (AAP) recently reaffirmed its stance on

screen time for young children on its parenting website (www.healthychildren.org). The AAP "strongly discourages television viewing for children ages two years old or younger, and encourages interactive play."

Psychologist, Kenneth Gergen, a senior research professor at Swarthmore College, coined the terms "digital autism" and "absent yet present" to explain how technology is muting the quality of our social lives and our capacity to engage fully — not just for our kids and teens but also for us as adults.

So how much time do our kids actually spend on screens?

According to a 2009 survey by the Kaiser Family Foundation, young people aged 8-18 years spend an average of 7 hours and 38 minutes each day with TV, video games,

or computers, an increase of 1 hour and 17 minutes more than the average time in 2004. In addition, 66% of these youngsters own a cell phone (on which they text or talk for another 2 hours each day), 76% of them have an iPod or other media player, and 74% of kids in grades 7-12 have a profile on social networking sites. Other studies show that American children aged 0 to 8 years spend about 1.5 to 4.6 hours of daily screen time, and children aged 8 to 12 years spend 4 to 9 hours of daily screen time. Screen time is made up of time spent watching TV, playing games consoles, using a mobile, computer or tablet. In the United States, 18.6 hours of screen-based play dominates children's weekly activities. Market researcher Childwise collected data from 1995 to the present. Each year it surveys 2000 kids aged 5 to 16. Children aged 5 to 16 spend an average of six and a half

hours a day in front of a screen compared with around three hours in 1995. Teenaged boys spend the longest, with an average of eight hours. Eight-year-old girls spend the least - three-and-a-half hours, according to the study.

What are our kids missing out on when they spend the majority of their time on screens?

Neuronal pathways are activity-dependent and reinforced through repeated use. Like dirt roads being paved, areas of the brain are strengthened based on frequent use. With enough repetition and practice, hard activities become easier. Exposure to a wide variety of activities is the goal of childhood in order to form a well-rounded brain. This extends further from childhood with the understanding that brain development is not fully complete till a child's mid-twenties. The final area of development is related to attention and executive functions. As such continued activation is necessary through the teenage years.

The benefits of play are almost limitless. Play is brain-building and leads to changes in even the smallest brain structures. Physical play develops skills in planning and organization, cooperation, self-control, impulse control, memory, executive functions, and communication. Often play involves trying and failing, and learning from mistakes, which enhances children's capacity for solving problems and learning to focus attention, ultimately promoting the growth of executive functioning skills. Play also provides opportunities for learning to cope with adversity, resulting in increased resilience.

Executive function (EF) skills are noted to be a better predictor of academic success than intellect and are exactly what we as parents want to strengthen to reduce those temper tantrums!! These EF functions are housed in the prefrontal cortex, the exact area of the brain that decreases function during online games. On the basis of "fire together -wire together" we understand that if this area is not firing it is not getting stronger. Just 10–20 minutes of gaming has been seen to increase activity in the brain regions associated with arousal, anxiety, and emotional reaction, while simultaneously reducing activity in the frontal lobes associated with emotion regulation and executive control. EF is our impulse control, our inhibition, our cognitive flexibility,

our decision-making, our ability to recall memories, our working memory, our emotional regulation, our attention, and so much more. EF controls all the good stuff that we need to survive at home, at school, and in this world. However, stick a child in the playground and what happens? As they barge past the row of kids waiting for the slide they get pushed down, and to the back of the line they go – impulse control just got strengthened. In the back of that line, they learn patience, impulse control, inhibition, and dare I say daydreaming, ah boredom glorious boredom. Boredom is where imagination lives! Faces, you need to scan faces to judge their emotion when you scan the playground and decide where to go and who to play with. A recent study showed that longer durations of screen time amongst 1-year-old boys was "significantly associated" with autism spectrum disorder at 3 years of age. Again, when not spending time with humans, interacting, scanning and learning what is the likely outcome?

We get the picture right! All those hours spent gaming, on YouTube, or scrawling mindlessly, does not do what our brain needs to grow.

What about the long-term effects of social media on the development and behavior of today's children and adolescents?

With rapidly spreading digitalization worldwide, more and more of us are spending an increasing number of daily hours on screens. This trend now includes even the youngest, 0 to 2 year olds. Results from several studies suggest that this growing habit is likely to engender multiple health risks such as early myopia and blindness, obesity, sleep disorders, anxiety, and depression, leading to an impaired performance at school and behavioral problems. The potential impact of these health risks on our children's future and the well-being of future societies as a whole could be dramatic.

Excessive internet use is transversally associated with lower cognitive functioning and reduced volume of several areas of the brain. In longitudinal analyses, a higher frequency of internet use was associated with a decrease in verbal intelligence and a reduced increase in the regional volume of gray/white matter in several brain areas after a few years. The areas affected

relate to language processing, attention and executive functions, emotion and reward. Screen time triggers dopamine production in the brain which leads to strong habits, dependencies, and cravings for more screen time. This addictive element in all screen activities is hard for kids to resist, making screen time the activity of choice. It is also linked to mental health issues such as depression. Depression represents a growing public health concern and is a prevalent disease among adolescents. Liu et al. (2015) found a nonlinear dose-response relation between depressive symptoms and overall screen time among children in the age range of 5–18 who were using digital media for over two hours per day.

Furthermore, studies have suggested that screen time-induced attention deficit hyperactivity disorder (ADHD) related behaviour, could inaccurately be diagnosed as ADHD, whilst screen time reduction is effective in decreasing ADHD-related behavior. Individuals with ADHD) may be at increased risk for video game addiction, especially when playing games with more reinforcing properties. Gamers who have greater ADHD symptom severity may be at greater risk for developing symptoms of video game addiction and its negative consequences, regardless of the type of video game played. The results demonstrate that children with ADHD are especially vulnerable to the addictive use of computer games due to their neuropsychological profile.

Literature relating to digital media addictive behavior has focused mostly on Internet use and video games, yet the growing use of applications and texting (mostly used on mobile devices) may also lead to addictive behavior (Love et al., 2015). Screen time is designed to never end. For example, playing in the backyard has a natural ending point (when it gets dark, you must go inside), but screen time doesn't. The lack of a natural end point in regard to screen time is one of the largest problems—screen activity is designed to be irresistible and difficult to stop. One study showed that up to 23% of people who play video games report symptoms of addiction.

Extensive studies are taking place in order to understand more clearly the ramifications of screen time. At 21 sites across the USA, scientists have begun interviewing and scanning the brains of nine and ten-year-olds. They will follow more than 11,000



kids for a decade and spend \$300 million doing it. Dr. Gaya Dowling of the National Institutes of Health states that what we do know about babies playing with iPads is that they don't transfer what they learn from the iPad to the real world. It is not a transferable skill. Dr. Patricia Kuhl, is one of the world's leading brain scientists and runs experiments with more than 4,000 babies each year. What her group have unveiled is that babies under the age of one, do not learn from a machine. Even if you show these babies captivating videos, the difference in learning is extraordinary, Dr Kuhl shows that you get genius learning from interacting with a human being, and you get zero learning from a machine.

Electronics are Here to Stay – The Positives

Electronics are not all bad, when used correctly they have various positive outcomes. Studies have looked at the affect of electronic media use on psychosocial development and executive functioning among 3- and 5-year-olds. Total screen time, TV viewing, and application use were examined. The study concluded that cognitive and psychosocial development in children 12 months later was positive when exposure lasted less than 30 minutes a day. In a study conducted with 2,840 students

in South Korea, children with depressed mood were more likely to use the internet to socialize, exchange ideas and talk about their concerns as a way to meet their friendship needs.

Used for learning, electronics can be a tremendous device. Often children come across teachers that do not teach catered to their way of thinking. The digital world allows access to a plethora of online learning methods which can help further the understanding of their learnings in school. It opens up the opportunity to learn from different cultures as well as to higher level education that may not be easily available where they live. Additionally, it can allow for creativity, there are many creative platforms. Equally, it allows access to music and learning of music. It is understood that the digital age will continue as such it can also expose children to coding experience which can be used for future application creation and proficiency in the future digital age.

In order to bypass the negative effects of inappropriate use of the internet, one cannot ignore, the positive side of these technologies. Technology is extensively available and it is almost impossible to remove it from children's daily lives. But the negative effects mentioned in this article deserve the same attention, as studies place

parental control and moderation as key factors.

It is imperative that parents monitor what their children are consuming and help them learn from it. In the same vein it is crucial that time limitations are set as the majority of research links overuse with serious consequences. This was taken to a new level in October 2021 in China, where China tightened limits for young online gamers and banned school night play. Chinese children and teenagers are barred from online gaming on school days, and limited to one hour a day on weekends and holiday evenings, under government rules. "Recently many parents have reported that game addiction among some youths and children is seriously harming their normal study, life and mental and physical health," the Chinese administration said in an online question-and-answer explanation about the new rules.

Moving Forwards – Finding the Balance

It is clear that there are extensive ramifications, and we have the potential for an inattentive future generation. However, it is on us to reel them in while they are young. Each generation that passes is going to be more digital. So although we know what an offline world is, it is up to us to safeguard our kids against never knowing what an



unplugged world is, losing the very notion of a screen-free world in future generations.

Much of the onus is on us parents. We need to learn how social media works and how to help our kids become good citizens of the digital world. We can not afford to check out because we do not understand the digital world. The default is that our children will be raised by whomever and whatever is in the digital domain. We have a responsibility to parent in the digital domain because our children are spending most of their time there. In the same way we would guide our children to understand their role in social situations or guide them when they start a new sport or a new school, we need to guide our children carefully in the pitfalls of the digital era.

When it comes to the misuse of screens, it often comes down to time management and the mere fact that most of us are living very busy lives. Screens are wonderful distractions for our toddlers, especially at those times when we as parents have only two hands and way too much to manage. Just remember, while TV as a babysitter may seem like a good idea for you and your little one at the time, there may be consequences later.

Here are a few tips to help you and your child/teen kick-off healthy habits:

- Have a “getting back into a routine talk” with your child/teen. The talk should be positive and should focus on areas

in which you as parents feel a need to reintroduce expectations and structure.

- Introduce to your child/teen the things that they can do in the moments they used to be on a device.

- There should be no TV in your child or teen’s room. As many kids do have TVs in their rooms these days, closely monitor their use. Removing the TV at this point will seem like an undeserved punishment. If your child/teen does not have a TV or gaming system in their bedroom it is best to keep it that way.

- There should be no TV during meals. An alarming number of families eat their meals in front of the television, restricting the opportunity for family conversation. Equally an alarming number of children sit in front of a screen during mealtimes on their own, this is often seen at breakfast as parents mill around getting ready. It is notable that many kids will get up extra early rather than sleep in order to get on a device. There should be no screen time in the morning. Meals should be reserved for conversation, checking in, and connection. Sidebar, of course, exceptions, can be made for special occasions.

- If you eat out as a family, take favorite board games along for all to play whilst waiting.

- Pre-plan the shows that will be watched and make sure that all work is done prior. Reinforce the message that we work before

we play and good work brings about a well-earned reward (good life lessons to learn in childhood). Also, when your child or teen is watching a pre-planned show of their choosing and of your approval, they are not aimlessly flipping through channels, but are using their allotted TV time to watch quality programs.

- Make screen time social. Screen time can complement our time together as a family with a movie night, or with playing a video game together. Emphasis on together!

- Keep track of your child/teens screen time and stick to your agreed-upon limits. Additionally, we as parents should not forget that what we model to our children and teens has a powerful reinforcing impact on their learning and behavior. As parents, we may want to reassess our own screen time management and lead by example.

- Talk to your child about what they are seeing.

- Encourage your child to learn other activities such as sports, music, art, and hobbies that do not involve screens.

- Actively decide when your child is ready for a personal device. Consider your child or teen’s maturity and habits. The right plan for one family may not be a good fit for another.

- Avoid using screens as pacifiers, babysitters, or to stop tantrums.

- Turn off screens and remove them from bedrooms 60 minutes before bedtime. Remember that light decreases melatonin production, which makes falling asleep harder. Plan on a deviceless pre-bedtime routine.

There is a crucial need to identify the warning signs of excessive technology use in our children and define the appropriate limit of daily screen time. Children can make balanced use of technologies, taking advantage of them without exaggeration, favoring communication and the search for information that is relevant to learning. Most importantly, parents need to be informed of the long-term consequences of excessive screen time and learn how to adequately adjust their children’s exposure. Most importantly, and the reason for this article, parents need to be informed of the long-term consequences and be aware of how the short-term gains can create a lasting impact. Information is power and we are now empowered to help our children move forward in a healthy manner.