This is a text version of a podcast from Pedscases.com on "**Digital Media: Promoting healthy screen use in school-aged children and adolescents."** These podcasts are designed to give medical students an overview of key topics in pediatrics. The audio versions are accessible on iTunes or at www.pedcases.com/podcasts.

Digital Media: Promoting healthy screen use in school-aged children and adolescents – CPS podcast

Developed by Dr. Fanyu Yang and Dr. Michelle Ponti for PedsCases.com.
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Introduction:

Hello everyone, my name is Dr. Fanyu Yang and I am a fourth-year Paediatrics Resident at the Children's Hospital in London, Ontario. This podcast was created in conjunction with PedsCases and the Canadian Pediatrics Society (CPS) and summarizes the new position statement entitled **Digital media: Promoting healthy screen use in school-aged children and adolescents**. This podcast discusses the risks and potential benefits of screen time and strategies for healthy screen use in children and adolescents. A separate pedscases podcast will summarize the CPS recommendations for screen time in children under 5 years. This podcast was developed with Dr. Michelle Ponti, a Paediatrician and Adjunct professor at Western University. Dr. Ponti is Chair of the CPS Digital Health Task Force and lead author of the CPS position statements on digital literacy. In the second part of this podcast, I am joined by Dr. Ponti to discuss practical approaches in making the CPS recommendations accessible for healthcare providers and families.

After listening to this podcast, the learner should be able to:
1. Identify the risks and potential benefits of screen time for school-aged children and adolescents with respect to their physical, mental and developmental health.
2. Provide evidence-based strategies for counselling families on healthy screen habits using the '4M' approach.
3. Identify common barriers to limiting screen time for busy families and discuss how pediatricians can provide practical guidance to parents on how to use screens meaningfully.

Case: Introduction

Let's begin with a case: you are working in a primary care clinic. Today you are seeing 6-year-old Nathan and his mother for his routine health visit. In addition to administering his scheduled immunizations, you use this encounter as an opportunity for anticipatory guidance on lifestyle habits such as physical activity and screen use. When you ask

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about his screen time his mother confesses with a lot of guilt that he spends most of his time watching TV or Youtube videos and playing on the iPad. His mother is concerned about the impact of all this screen time on his development and physical health. What is your approach in counselling her on age-appropriate screen use? What is the literature supporting the risks and potential benefits of screen use in this age group?

<u>Impact on school-aged children (age 5-12 years):</u>

It should come as no surprise that kids are spending an increasing amount of time in front of screens. We will first discuss the impacts of screen time in school age children, and then explore its effects in adolescents.

The majority of Canadian parents report concern about the amount of time that school-age children spend on digital devices. Surveys find that 36% of 10- to 13-year-olds spend 3 or more hours per day using digital devices outside of school work. Trends in media habits change throughout childhood from viewing primarily educational content in the preschool years to watching predominately entertainment TV and playing video games by school age. These changes can have both positive and negative impacts.

Active and engaging screen time can have potential benefits for school-aged children. With the increasing use of iPads in the classroom in delivering educational content, there are positive effects of screen media use, such as improving academic performance, enriching literacy skills and developing positive relationships with teachers and peers. Outside of the classroom, cooperative or competitive video games with family members and friends can also improve cognitive development and identity formation. Video games can promote pro-social behaviours, especially amongst boys and can be associated with a lower rates of mood and behavioral concerns. In fact, the literature shows that modest screen time of one hour per day has been associated with a lower risk of depression compared with *no* screen time at all.

In contrast, prolonged passive screen time can be predictive of future behavioural and mood concerns, such as conduct disorders and depressive symptoms. In addition, school-age children routinely try to engage in media 'multi-tasking', which involves dividing attention between two or more devices simultaneously. This has been shown to impact learning, impair problem-solving skills and even affect children's confidence in their own academic skills.

Where and how children engage with screens matters. School-aged children often use a centrally located, shared family tablet or laptop at home for homework, gaming or socializing, but are often unsupervised. This means lost opportunities to learn, play, and interact with family and solitary screen use greatly increases risk of exposure to negative or harmful content due to lack of adult supervision. On the other hand, programs that are age-appropriate, co-viewed with family, and watched with purpose and time limits, can be immersive and informative screen experiences.

<u>Impact on adolescents (12 to 19 years):</u>

Now let's discuss screen time in adolescents aged 12-19 years. Adolescent media use differs from school-age children with increasing social media use and engagement with peers.

High school students spend an average of over 7.5 hours per day on various screens. Research suggests that teens are less susceptible to the negative effects of high screen time use than younger children. However, similar to younger children, zero screen use *or* excessive use in adolescence are associated with negative effects, while moderate use (between 2 to 4 hours per day) is associated with some cognitive and psychosocial benefits.
 The digital world can influence many key adolescent milestones such as social connectedness with peers, fulfilling the developmental need to belong and developing a sense of autonomy. When thoughts and experiences are shared with peers, social media can be a positive and affirming platform. Furthermore, online communication can encourage socially isolated or anxious adolescents to engage in self-disclosure and enhance feelings of social connectedness and even reduce symptoms of depression.

However, being constantly online can also contribute to feelings of alienation and social exclusion. Many adolescents self-report spending 'too much' time online and feeling "addicted" to their mobile devices. Not surprisingly, excessive screen time (> 6 hours/day) is correlated with mood concerns and feelings of depression in teens. There is also correlational link between social media use and appearance anxiety, body image concerns, and disordered eating behaviours in adolescents. The literature indicates that adolescents with few or no close friends who passively 'surfed' online are prone to more symptoms of depression and anxiety. Media multitasking in adolescents is also linked with lower academic performance, weaker working memory, lower sustained attention, and greater impulsivity.

Parents can play a crucial role in creating boundaries on online activities for teens. It's important to set rules surrounding inappropriate websites, and safety around meeting online acquaintances in person. However, studies show that parental involvement in limit setting for online use is declining in recent years, with youth having less guidance over their media use. Although time spent on digital technology can displace face-to-face interactions with parents, a recent study revealed frequent online communication with parents appears to strengthen parent-teen relationships.

Research has also consistently shown that screen use can adversely affect weight, with recent studies linking screen-based sedentary behaviour with unhealthy dietary intake. For instance, watching TV can suppress satiety signals, while certain advertisements can contribute to increased food consumption. While screen use alone may not displace physical activity, already inactive adolescents spend more time using screens. In addition, screens in the bedroom can interfere with sleep duration and quality by causing emotional arousal, inhibiting melatonin release and disrupting circadian rhythms.

Recommendations

Now let's review the CPS recommendations on how health care providers can promote healthy digital media use by counseling families to remember four essential 'Ms': managing screen use, meaningful screen activities, modeling healthy screen use and monitoring problematic screen behaviours.

1. **Managing** screen use: Parents can manage screen use using parental controls, moderating activities if concerns arise and creating a family media plan. The American Academy of Pediatrics healthychildren.org website is an excellent resource for creating a customizable outline of screen free zones, creating device curfews, diversifying screen time beyond recreational content and teaching children online safety. Parents should discourage media multitasking, especially when completing homework.
2. **Meaningful** screen activities: Physicians should encourage prioritizing face-to-face interactions, sleep, and physical activity. Making screen activities meaningful means encouraging educational, active, or social content over passive or unsocial content. Parents can take part in their children's media lives (for example by joining in video game play and asking about their experiences and encounters online).
3. **Model** healthy screen use: Parents should review their own media habits and allocate time for alternative hobbies, outdoor play and activities with their children. Daily "screen-free" times should be encouraged especially during family meals and socializing. Parents should model behaviours and remind their children of the dangers of distracted screen use such as texting or using headphones while driving and walking.
4. **Monitor** for signs of problematic screen use such as sustained oppositional behaviours in response to screen time limits and being bored or unhappy without access to technology. Disturbances in sleep, school performance or face-to-face interactions as a result of excess screen use are also problematic. Let parents know that the occasional occurrence of these signs may be expected and does not necessarily indicate problematic screen use.

To recap, the 4 M approach is to encourage parents to manage screen use, create meaningful screen activities, model healthy screen habits and monitor problematic screen behaviours.

Case: continued

Now let's return to the case. You counsel Nathan's mother that as a parent, she has a crucial role in moderating screen use and curating age-appropriate digital content for her children. You explain that a moderate amount of screen time, when co-viewed with family and watched with purpose and time limits can have beneficial effects. Nathan's mother is relieved to hear this but goes on to tell you that she is more concerned about Nathan's older teenage sister Nathalie, who spends even more time online and on social media. "Is excessive screen time in adolescents just as harmful?" she asks. She

is also worried that sedentary screen time will lead to weight gain and affect her sleep. How do you address these concerns?

You explain to Nathan's mom that adolescent brain is still learning to control impulses, regulate emotions and assess risks and consequences. Adolescents may be developmentally predisposed to take risks and overestimate their ability to protect themselves online. Parental awareness of and involvement in their children's online activities is crucial in moderating excessive use and risky behaviours.

In addition there is a strong correlation of sedentary screen time and weight gain secondary to unhealthy dietary intake. Sleep duration and quality is also impacted by screens in the bedroom by disrupting natural sleep hormones and sleep rhythms.

You discuss the 4M approach of managing screen use, creating meaningful screen activities and modelling healthy screen habits. You also explain symptoms of problematic screen use to monitor for in Nathan and Nathalie. You provided a list of resources such as the media smarts Canada website and the AAP healthy children link to help create a family media plan.

Discussion:

Fanyu: Dr. Ponti, it's no doubt that screens are pervasive in the lives of modern families because of their convenience and entertainment value. What do you think are common barriers that parents face to limiting screen time in children and adolescents? (*e.g lack of parental time? lack of resources for supervision? lack of parental limit setting ability or the effect of peer pressure in adolescents?*)

Dr Ponti: Likely the number one barrier we all face is parents who tell us it's simply impossible or unrealistic to limit screen time for their children because it just leads to huge meltdowns or temper tantrums. It's like a trigger that sets off explosive behaviour when they try to stop the game or take away a device… How many of us see patients every day who are on their phone or device almost constantly throughout the appointment – just to "keep them calm"?
Another big barrier is a parent's own screen habits. Unfortunately, habits form early and easily. Some further barriers are: exposure to media is not seen as a serious issue depending on parental attitudes, caregiving styles or biases – and some are not even aware of "background" media. There is a lack of strong evidence as research has not kept up pace with evolving technologies, However, we do know based on TV data that background TV is associated with attentional problems and other learning delays and there are fewer interactions, less questions asked, fewer words spoken to a child when a TV is left on in the background. Certain "parenting styles" may lead to the electronic babysitter, in that parents perceive their kids are safer inside on a screen than outdoors, not realizing the risks of exposure to violent, or inappropriate content, or longer-term impacts on social-emotional development and relationships.
Another barrier is social attitudes - Take a look at all the products available on the market today, most have special adaptations to accommodate our devices in any

capacity. During my own research, I came across a product called the Swipe and Feed, which is a baby bottle holder that fits a mobile phone as well as the bottle.   Parents can now google, text and tweet all while feeding their baby. I find it disheartening that the Swipe even comes before Feed in the product name and that feeding time should be another example of "scree-free" time, not another chance to catch up on texts, emails or social media.

Fanyu: How can primary care providers address these challenges while still engaging with parents to integrate the 4M framework into their daily lives?

Dr. Ponti: The example above about children we see in our offices on their devices, is an in-the-moment teaching opportunity for us as role models to redirect the child to put the device down, engage in conversation or other toys and an opportunity to discuss content and limit setting with parents. I will direct parents to CPS or Media Smarts websites as a place to start and the earlier we start having these conversations the better. Pediatricians and primary care providers are in a unique position to provide anticipatory guidance around screen use proactively as part of routine visits. CPS also has some nice clinical tools to guide clinicians in their counselling on screen use as well as some office posters that could be reminders. Or consider modelling your clinical encounters as "screen-free" time, except of course if you are demonstrating a new app for example – this models screen use with a specific purpose.

Fanyu: The statement emphasizes the value of meaningful screen use. What are some practical suggestions to make this achievable for parents? How can healthcare providers help parents distinguish active vs. passive screen time?

Dr. Ponti: Parents often ask what I recommend. Setting parental controls through internet provider or browsers and search engines are good place to start. Rating systems are available. I typically refer parents to MediaSmarts (a Canadian non-profit organization promoting digital literacy,) the Canada home video rating system and the Entertainment Software Rating Board for guidelines on specific videos and games.

When kids and teens are on their devices, teach them to choose activities that are active (action video games, Wii fit as opposed to passively binging a whole TV series), Educational (a lot of kids watch youtube videos – choose a topic of interest to learn about) or social (communicating or catching up with friends – A caveat here though – talking openly to teens about cyberbullying/sexting can help prepare them to use social media responsibly – not part of this statement, topics of other CPS documents)

I think if parents are an active part of their kids "digital lives" and have a strong off-line relationship with their children and teens this is the most protective factor in mitigating risks. The less time kids/teens are passively consuming media or in isolation, the better.

Fanyu: The CPs recommendations for pre-school limiting screen time to 1 hour per day for children age 2-5 years and zero for children under 2 years. In reviewing the evidence for this statement, why did CPS not prescribe a limit to the quantity of screen time for older children and adolescents? How should we interpret the literature examining the impact of screens on development and health which, given the multiple confounding factors, can only truly capture correlation and not causation?

Dr. Ponti: Specific screen time limits are variable depending on the age and developmental stage of each child or teen. Generally though, when parents help kids prioritize those daily habits that we do know lead to good health: getting 9-12 hours sleep, spending 8-9 hours at or getting to school, at least 1 hour mod-vigourous exercise and several hours of light physical activity, ideally outdoors and socializing face to face with friends or at meal times, that really only leaves a few hours for free time. We also know based on the research that those kids with either ZERO use OR excessive use (and excessive is typically reported as greater than 5-6 hours/day) are the ones at highest risk for negative effects. These are the kids that may have pre-existing social, cognitive, mood or behavioural issues which has led to either ZERO use or excessive use rather than the other way around. For the zero users, perhaps they are living in extreme poverty and do not have the means to access tech. or are they significantly socially isolated.? Which brings up the paradox of the "digital divide" where a family either has no financial means to access tech (possible for the zero users) or limited parental capacity to curate/monitor/set limits on tech, relying heavily on the electronic babysitter and/or have no means for other sports and recreation clubs options (excessive users). There is some evidence that low-moderate (up to 4 hours) screen time in adolescents is associated with the lowest risk of mood and anxiety symptoms and that weekend use differs from weekday use in its impact.

I think the take home message from the available evidence is that screens themselves are not inherently harmful but it's the how and when we use them, with a specific purpose in mind and prioritizing other daily life activities first.

Thank you for listening to this podcast. A list of suggested resources for parents can be found on the Pedscases website. If any questions or comments, please feel free to contact myself or Dr. Ponti. Stay tuned for more PedsCases podcasts and part two of this series on screen time for pre-school children under age 5.

References

Ponti M. Canadian Paediatric Society, Digital Health Task Force. Digital media: Promoting healthy screen use in school-aged children and adolescents

Suggested Resources:

Digital Media Task Force. Screen time at home: Healthy habits [Internet]. Caring for kids: information for parents from Canadian pediatricians. 2017. Available from: https://www.caringforkids.cps.ca/handouts/screen-time-at-home-healthy-habits
CPS endorsed online resource on practical advice for parents and families

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Media Smarts. Co-viewing with your kids- Tip Sheet. [Internet] Media Smarts: Canada's Centre for Digital and Media Literacy. 2014. Available from:
http://mediasmarts.ca/sites/mediasmarts/files/tip-sheet/tipsheet_co-viewing_with_kids.pdf
Tip sheet on how parents can encourage children to ask questions and think critically about media content

Common Sense Media. Reviews for what your kids want to watch (before they watch it) [Internet]
2019. Available from: https://www.commonsensemedia.org/
Non-profit organization creating unbiased ratings by expert reviewers on movies, video games and apps as a resource for parents.

American Academy of Pediatrics [Internet] Family Media Plan. Available from:
https://www.healthychildren.org/English/media/Pages/default.aspx
CPS endorsed online resource for creating a family media plan and media time calculator

Motion Picture Association of Canada. Film ratings: informing the public [Internet] 2018. Available from: https://www.mpa-canada.org/film-ratings/
Motion Picture Association of Canada. Canada Home Video Rating [Internet] 2018. Available from: https://www.mpa-canada.org/canada-home-video-rating-system/
Canada home video rating system and the Entertainment Software Rating Board for guidelines on specific videos and games ratings.

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