

Screen time associated with behavioral problems in preschoolers

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Sukhpreet Tamana (left) and Piush Mandhane pose with children participating in the CHILD Cohort Study. The researchers found that among preschoolers, spending two hours or more of screen time per day is linked to clinically significant behavioural problems. Credit: Jordan Carson

A new Canadian study of more than 2,400 families suggests that among preschoolers, spending two hours or more of screen time per day is linked to clinically significant behavioural problems.

Compared with [children](#) who had less than 30 minutes per day of screen time, children who were exposed to more than two hours of screen time per day were five times more likely to exhibit clinically significant "externalizing" behavioural problems such as inattention; and over seven times more likely to meet the criteria for [attention deficit hyperactivity disorder](#).

Piush Mandhane, associate professor of pediatrics in the University of Alberta's Faculty of Medicine & Dentistry, led the study, which was published today in the journal *PLOS ONE*.

"We found that screen time had a significant impact at five years of age," said Mandhane.

"Current Canadian guidelines call for no more than two hours of screen time a day at that age. But our research suggests that less screen time is even better."

The research used data from the CHILD Cohort Study, a national birth cohort study collecting a wide range of health, lifestyle, genetic and environmental exposure information from nearly 3,500 children and their families from pregnancy to adolescence. Mandhane leads the Edmonton site of the CHILD Cohort Study.

Parents reported their child's total screen time per day, including watching TV and DVD's, and using computers, video consoles, smartphones and tablets. On average, three-year-old children spent 1.5 hours of screen time per day; for 42 per cent of the three-year-olds, their viewing time exceeded the Canadian recommended screen-time guideline of less than one hour per day. At age five, children spent, on average, 1.4 hours of screen time per day; for 13 per cent of the five-year-olds, their viewing time exceeded the Canadian recommendation of less than two hours per day.

The study also assessed child behaviour and attention at age five by having parents complete the Child Behavior Checklist (CBCL), a screening measure for a variety of problems such as anxiety and depression, emotional reactivity, inattention, aggressiveness, and sleep disturbances.

"Prior to this, there weren't a lot of data out there that asked the questions, 'How much is too much? Are the guidelines appropriate? Ultimately, will limiting screen time in [preschool years](#) have benefits for a child's development?' This study gives parents some of those answers," added the study's first author Sukhpreet Tamana, an AllerGen Highly Qualified Personnel and a postdoctoral fellow in the Department of Pediatrics at the University of Alberta.

"The two big takeaways from this study are that children exposed to more screen time, at either age three or five years, showed significantly greater behavioural and attention problems at age five, and that this association was greater than any other risk factor we assessed, including sleep, parenting stress, and socioeconomic factors," added Tamana.

The researchers also identified factors that provided protection from the negative effects of screen time. Good quality sleep had a small impact, while participation in organized sports was found to have a highly significant protective effect.

"Interestingly, it wasn't [physical activity](#) on its own that was protective; the activity needed to have structure," said Mandhane. "And the more time children spent doing organized sports, the less likely they were to exhibit behavioural problems."

"A lot of the things that you do through organized activities are really important for young kids early on," noted Tamana. "It sets the stage for development amongst children. I think in lieu of screen time, it would be beneficial for parents to increase opportunities for other structured activities instead."

The study did not determine if the [media content](#) itself (educational, video gaming, social media) or screen type (television, computer, tablet) were important predictors of behavioral problems, though the team plans to examine those questions more fully in future research.

While the researchers suggest "less is more" when it comes to screen time amongst preschool-aged children, they do not advocate for eliminating it entirely.

"Our data suggests that between zero and 30 minutes a day is the optimal amount of [screen time](#)," said Mandhane. "The preschool period is an ideal time for education on healthy relationships with screens, and we believe our data shows that you can't start too early."

More information: Tamana SK, Ezeugwu V, Chikuma J, Lefebvre DL, Azad MB, Moraes TJ, et

al. (2019) Screen-time is associated with inattention problems in preschoolers: Results from the CHILD birth cohort study. *PLoS ONE* 14(4): e0213995. doi.org/10.1371/journal.pone.0213995

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