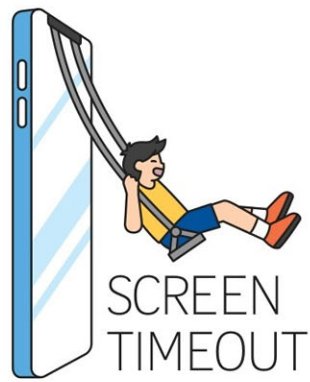


Higher risk of autism symptoms in toddlers with prolonged digital screen use: Study

It also finds that Singaporean families often exceed national screen time guidelines



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Toddlers who spend a longer time in front of digital screens are more likely to exhibit symptoms of autism, according to new research, which also found that Singaporean families often exceed national screen time guidelines.

Researchers from the National University Hospital (NUH) have found that prolonged exposure to screens has the most pronounced effect on how toddlers communicate with others.

Parents here have observed that their children are not pointing at objects to show interest, are not showing their toys to them, or are failing to respond when their name is called.

These behaviours appear in the screening questionnaire for autism and indicate a higher probability of a child having the condition. However, a formal diagnosis can be made only by a specialist.

The local study, the first of its kind here on the relationship between screen time exposure and autism symptoms, was published on Oct 8, 2025, in the *Journal of Autism and Developmental Disorders*.

Conducted between August 2020 and November 2022, the study looked at 5,336 children of all ethnic groups in Singapore, aged 17 to 24 months, who had visited one of seven polyclinics in the west of Singapore for a milestone check-up.

Children with known developmental disorders were excluded.

The study required caregivers to report the children's daily screen time and complete a screening tool for autism.

Called the M-CHAT-R/F, the tool comprises 20 questions to identify children who are at higher risk of having autism.

Used worldwide, it has been validated for use in Singapore during a child's 18-month milestone check-up at the seven polyclinics in the study, which are under National University Polyclinics.

The study found that on average, children between 17 and 24 months old had one hour and 18 minutes of screen time a day, with usage spiking to an average of one hour and 26 minutes on weekends.

This exceeds guidelines issued by the Ministry of Health in 2025 that

recommend zero screen time for children under 18 months, and less than one hour a day for children aged 18 months to six years.

Parents of children with high screen exposure were more likely to report poor communication in their children.

These children were less likely to show interest in other children by watching them, smiling at them or going up to them.

They were also less likely to bring things to show their parents or hold things up for them to acknowledge.

They might also not respond to their name being called by looking up, talking, babbling or stopping what they are doing.

The study's lead author, Adjunct Assistant Professor Aishworiya Ramkumar from NUH, describes the findings of the study as "one more dimension to the puzzle" of understanding child development.

Despite the impact observed on social communication, the study found no significant link between screen time and motor skill delays or sensory aversions, such as being upset by everyday noises.

Dr Ramkumar, a senior consultant at NUH's department of paediatrics, told *The Straits Times* that screen time in infancy carries a higher risk of adverse effects on language development.

The younger the child, the more significant the impact, she said.

"Instead of interacting verbally and socially with a caregiver, the child may spend that time on a screen, leading to difficulties in developing essential communication skills," said Dr Ramkumar, adding that the foundation of language learning is the "to-and-fro" social interaction between child and caregiver.

While there is a clear link between high digital screen exposure at a young age and developmental delays, she said researchers are still investigating why some infants are affected more than others.

Factors such as socio-economic status and parental education may play a role, though no conclusive evidence has been established.

"However, the general rule remains – the greater the exposure and the younger the age, the higher the likelihood of a child experiencing language delays or social communication difficulties," said Dr Ramkumar.

The study found that several household factors influenced the amount of screen exposure young children had.

Children whose parents had uni-



The NUH study has found that, on average, children between 17 and 24 months old had one hour and 18 minutes of screen time a day, with usage spiking to an average of one hour and 26 minutes on weekends. ST FILE PHOTO

MOH guidelines on screen use for children under 12

BELOW 18 MONTHS



- No screen use unless for interactive video chatting
- Do not leave screens on in the background when child is engaged in other activities

18 MONTHS TO 6 YEARS



- Limit screen use to less than an hour a day outside school
- Passive screen use not recommended
- View media together with children where possible
- Do not use screens to occupy or distract child
- Carefully choose age-appropriate educational content
- Do not leave screens on in the background
- No screens during meals and 1 hour before bedtime

7 TO 12 YEARS



- Limit screen use to less than 2 hours a day, unless related to schoolwork
- Develop a screen use plan or timetable
- Have regular conversations with children to find out their online activities
- Do not give children mobile devices with unrestricted access
- Use parental control settings to ensure children access age-appropriate content and apps
- Do not give children access to social media services
- No screens during meals and 1 hour before bedtime

Source: MINISTRY OF HEALTH STRAITS TIMES GRAPHICS

versity degrees had lower screen exposure compared with children of parents with lower educational qualifications.

On average, parents with university education or higher had children clocking about one hour and four minutes of screen time daily compared with roughly one hour and 48 minutes for other groups – a difference of about 45 minutes.

Dr Ramkumar said previous research had identified higher parental education as a "protective factor" against excessive screen exposure.

This could be attributed to three

things – greater awareness of the need to avoid screen time exposure, a higher likelihood of establishing screen time rules, and increased access to resources for alternative activities.

Enrolment in pre-school programmes was also linked to lower screen time.

Paediatric hospitals in Singapore have also observed increased screen exposure among young children.

Dr Ramkumar said NUH is seeing more children aged 18 to 24 months who are referred to the hospital after their 18-month milestone check

at polyclinics. She said this is especially so after the introduction of the autism screening tool in late 2022.

Dr Christelle Tan from KK Women's and Children's Hospital (KKH) said the hospital does not track the number of children with excessive screen time exposure it sees.

However, doctors have seen how excessive screen use in early childhood can contribute to an increased risk of developmental concerns in young children, such as language delays, difficulties with engagement and a shorter attention span.

"In some cases with children who initially present to us with behavioural and social communication challenges, we have seen the symptoms improve significantly after excessive screen use was stopped," said Dr Tan, a consultant at KKH's Department of Child Development.

The general behavioural challenges, she said, include aggression, tantrums or meltdowns, while social communication challenges include reduced eye contact and not responding to their name being called.

The NUH study also cites this phenomenon, which is unofficially known as "virtual autism".

Its first mention was in a 2018 Romanian study that had found that children with excessive screen time exposure – more than four hours a day – exhibited autism-like symptoms and may be diagnosed with autism.

It was also found that once screen time was limited, these children improved substantially in terms of social communication and were reclassified as non-autistic.

Dr Ramkumar said research confirms the detrimental effects of screen exposure in young children, and this is why the national screen time guidelines have been published.

"This study must be looked at in that context, as yet another reason to minimise and avoid screen time exposure as much as possible, especially in children less than two years of age," she said.

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