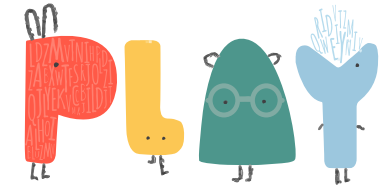


BEYOND THE SCREEN

A GUIDE TO PARENTING IN THIS DIGITAL AGE

HI, WE ARE PLAY BEYOND THE SCREEN

In a Smart Nation like Singapore, digital devices have become a part of our everyday lives. Young children are growing up in a more connected and technologically-advanced environment. While digital devices are no doubt a great form of entertainment and education for young children, the excessive and unregulated usage of screen time are associated with various negative health concerns impacting young children's childhood development.

In a world of ever-changing technology, this brochure aims to inform parents with children aged 1-5 about screen time and its associated health concerns. Parents can also find out what they can do to manage screen time for their children and the family.

For more information about Play Beyond The Screen, visit www.playbeyondthescreensg.com or check out our social media channels.

@playbeyondthescreensg **Play Beyond The Screen Singapore**

WHAT IS SCREEN TIME?

Screen time refers to time spent on digital devices such as television, smart devices such as smartphones and tablets, computers, laptops and handheld game consoles.

WHY DOES IT MATTER?

The rise of the digital age has caused children to use technology at younger ages and more often. The Growing Up in Singapore Towards healthy Outcomes (GUSTO) study found that screen time amongst children aged 6-24 months increased by 100% to 2 hours and nearly 25% of toddlers aged 2-3 engage in more than 4 hours of screen time per day.[1]

A growing body of literature is shedding light on the negative health consequences of excessive screen time for young children. Amongst other risk factors of poor sleep, childhood obesity and social isolation, young children between 1-5 years are also at risk of myopia, language delay, mental health issues and inattention symptoms, which progressively contribute to other health problems as they age.

MYOPIA

WHAT IS MYOPIA?

Myopia (also known as nearsightedness) is a vision condition where one is able to see close objects clearly but far objects are blurry. It occurs when the shape of the eye is longer than usual, causing light rays to bend and focus images in front of the retina instead of on the retina.

DID YOU KNOW?

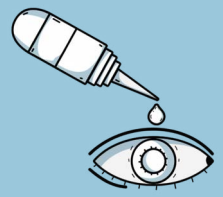
Singapore has one of the highest rates of myopia in the world. The Singapore National Eye Centre states that more than 10% (11%) of Singaporean children aged 6-72 months have myopia before even starting primary school.[2] This increases to 83% when they reach the age of 18.[3]

SCREEN TIME AND MYOPIA

High childhood myopia rate in Singapore is largely attributed to near-work activities done on digital devices such as mobile phones, iPads, computers and handheld gaming consoles.[4]

When children look at something that is too near, the images are actually blurred. This blur image is transmitted to their retina, causing their eye to elongate, protrude and remodel. As such, the eye becomes longer, resulting in myopia and negatively impacting the ability of their eye to focus on distant objects.

Developing myopia early in life triples the chances of developing high myopia[5] which can lead to many potentially-blinding eye conditions later in adulthood such as cataract, glaucoma, retinal tears and macular degeneration.



RECOGNISING SYMPTOMS OF MYOPIA

- **Squinting**
- **Child sitting close to the television**
- **Child requesting to sit closer to the whiteboard at school**
- **Child holding things closer to his or her face**

SCREEN TIME AND DIGITAL EYE STRAIN

Research has found an association between excessive screen time and a major eye condition termed as digital eye strain (DES). The American Optometric Association defines DES as a group of eye and vision related problems that result from prolonged computer, tablet, e-reader and mobile phone use.[6]

RECOGNISING SYMPTOMS OF DIGITAL EYE STRAIN

Loss of Focus in Eye

- Accommodation is the ability of your eyes to shift focus from near objects to far objects and vice versa. Long exposure to digital devices may negatively impact your child's ability to accommodate due to eye fatigue, resulting in blurred vision and headaches.[8]

Dry Eye

- Prolonged digital device use in children was found to be strongly associated with pediatric dry eye disease. Three hours or longer of screen time per day is linked to an increase in the likelihood of developing dry eye.[7]

Signs of dry eye in your child include:

- Frequent eye rubbing
- Sensitivity to bright light
- General redness in eye
- Incomplete blinking
- Reduced blinking rates when using digital devices

FIGHTING MYOPIA AND DES WITH GOOD SCREEN TIME HABITS

- **Hold mobile screens at least 30cm away from face**
- **Use anti-glare screens**
- **Bring your child for regular eye check-ups every 1-2 years**
- **Engage in outdoor activity**
  - Time spent outdoors is effective to prevent the onset of myopia. Singapore National Eye Centre recommends allowing your child to spend at least two hours a day playing outdoors to protect against eye diseases.[9]
- **Reduce overhead lighting and avoid placing light sources in locations that causes excessive reflection and glare on screens.**
- **Take regular breaks when using digital screens**
  - The American Optometric Association recommends observing the 20-20-20 strategy to prevent digital eye strain. Get your children to take a 20 second break every 20 minutes to look at objects 20 feet away (~6m).[6]

LANGUAGE DELAY

WHAT IS LANGUAGE DELAY?

Speech and language delay refers to a child's difficulty in understanding others (receptive speech and language) or expressing himself or herself (expressive speech and language).[10] Children pick up speech and language skills at a very young age and it is a cumulative development that literacy and communication skills are built upon.

Even if he or she is not able to speak yet, your child should be attempting to communicate with you in some ways, such as babbling or using baby jargon.

Speech and language enables your child to communicate in a way that is functional, inclusive and meaningful to build relationships and receive education as they develop.

SCREEN TIME AND LANGUAGE DELAY

Children develop their speech and language abilities through listening and observing others speak and communicate.[11] Face-to-face human interaction is dynamic and children pick up on communication context and cues during these interactions, which a digital device does not provide.

Excessive and passive screen viewing does not stimulate interactive learning in young children as they are unable to relate the context of media contents to real life situations on their own.[12] Increased passive screen viewing lowers the exposure to face-to-face verbal and play-based interactions. This may cause your child to experience difficulties in expressing themselves and communicating with others, impacting their social skills.

Language delay can affect your child's learning as well. Your child may struggle with completing tasks or taking instructions as language delays impact their ability to understand written or verbal information.

Research has also shown that there is an association between screen time usage and underdeveloped white brain matter in young children.[13] White matter in the brain is responsible for the development of language, literacy and cognitive skills during the early childhood development years.

RECOGNISING SYMPTOMS OF LANGUAGE DELAY

Every child develops differently and at different rates. However, your child should be hitting milestones developments at certain ages. The timeline can be used as a general guideline to decipher if there are any red flags in your child's communication skill developments.[14]

By 12 months

- Your child coos, babbles and laughs to communicate with people
- Your child is likely to babble in baby jargon with a conversational tone

12 – 18 months

- Your child should be producing their first words, slowly adding words to their vocabulary
- Your child would be using gestures to communicate at times as well
- Your child will be able to understand easy directions and answer simple questions

18 months – 2 years

- Your child's vocabulary should be increasing steadily
- Your child will be able to put two words together to form short phrases (e.g. mummy eat, want ball)

2 – 3 years

- Your child is likely to be stringing up words to form short phrases or sentences
- Most of the time, strangers should be able to understand what your child is saying

3 – 4 years

- Your child should understand basic grammar and attempts to use it in their sentences
- Your child will be able to engage in more complex conversations with you (e.g. telling you stories, expressing their thoughts)

By 5 years

- Your child should be able to introduce himself or herself and say his or her name
- Your child is able to describe details when holding a conversation with you
- Your child is likely to use different ways and words to form sentences

OVERCOMING LANGUAGE DELAY IN YOUR CHILD

If you suspect your child may be struggling with understanding others or expressing himself, you should consult a Developmental and Behavioural Paediatrician who will assess your child's development holistically, determine likely causes for the developmental difficulties and recommend appropriate intervention. This may include having your child be seen by Speech and Language Therapists (SLTs) who are Allied Health Professionals trained in techniques aimed at overcoming or reducing the impact of language delays in young children.

Language therapy involves the assessment, diagnosis and treatment of young children with language disorders. The following areas are targeted by SLTs:

Morphology
Study of the rules that govern how morphemes, the minimal meaningful units of language are used in a language

Pragmatics
The rules associated with the use of language in conversation and broader social situations

Semantics
The meaning of words and combinations of words in a language

Syntax
The rules that correspond to the ways in which words can be combined to form sentences in a language.

INATTENTION SYMPTOMS

WHAT IS INATTENTION?

Inattention is the lack of focus on a given event or situation when it is required. It is a hallmark feature of Attention Deficit-Hyperactivity Disorder (ADHD).

SCREEN TIME AND INATTENTION

Excessive screen time is found to be highly associated with ADHD and ADHD-related behaviours including inattention problems, hyperactivity and impulsivity in young children.[15]

Prolonged and constant use of digital devices lowers young children's executive function skills, which include attentiveness. Often described as "the CEO of the brain," executive function skills refer to a set of mental skills (working memory, cognitive thinking, and self-control) that helps children set goals, plan and get things done.[13]

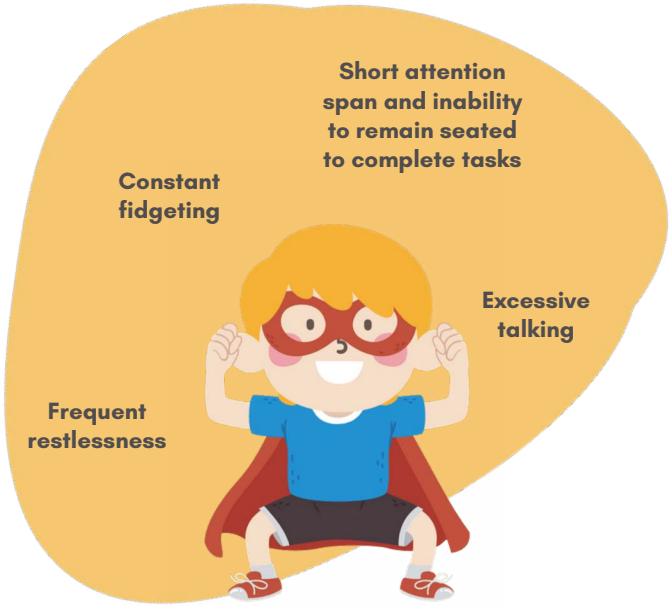
When young children spend excessive amount of time on screens, they do not engage in activities that can better build cognitive abilities and long attention span.[16]

Additionally, the fast-paced content on screens do not require a high level of attention from young children, which may shift their attention span into a "scanning-and-shifting mode" that will induce higher arousal. Over time, children may frequently seek activities of increasing levels of arousal, hence paying less attention to activities that require intense concentration such as school work.[16]

In a classroom context, these children may end up distracted and fidgety, disturbing their classmates and disrupting the lessons. These could translate into poorer grades, worse school outcomes, poor time management, less stable friendships and possibly poorer jobs later in life.[17]

RECOGNISING INATTENTION SYMPTOMS IN YOUR CHILD

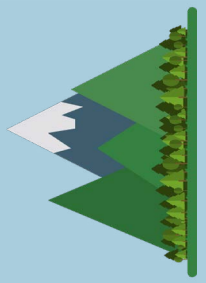
By peer-comparison and consistency of behaviour across different settings such as home, school and outdoors, children with inattention symptoms typically exhibit:



*Note that inattention symptoms are more noticeable amongst children 4 and above.It would be a challenge to tell whether the attention span of children 3 and younger are delayed or not, as the attention span of children that age only lasts about a few minutes. If in doubt, please consult a paediatric specialist.

COMBATING INATTENTION SYMPTOMS

1. Give your child a 30 minute break after school to relax and play before starting homework.
2. Limit screen time. Cell phones and tablets may over-stimulate the nervous system of a child. Have firm rules about how much screen time your child is allowed.
3. Make sure your child gets enough sleep every night as recommended for their age. Sleep deprivation leads to lack of concentration, impulsivity, and irritability.
4. Have age-appropriate rules and consequences. For example, you may want to implement lights off at 10pm every night, or calmly invoke a consequence without yelling.
5. Children have a lot of energy. Bring them out and have plenty of opportunities to run around out in the nature. Nature also has a calming effect on children.



HOW MUCH SCREEN TIME IS TOO MUCH?

As a general guide, the American Academy of Paediatrics recommends that children:

Younger than 18 months

Should avoid digital screens other than video-chatting.

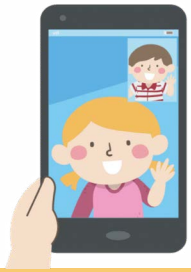
18 to 24 months

Parents who want to introduce digital media should choose high-quality programming and watch it with their children to help them understand what they're seeing.

2 to 5 years

Limit screen use to 1 hour per day of high-quality programs

Parents should co-view media with children to help them understand what they are seeing and apply it to the world around them.



USING DIGITAL TECHNOLOGY EFFECTIVELY

In a digitally-connected age, smart devices play an integral role in the family as electronic babysitters to entertain children, virtual educators and a tool to manage children's behaviour.

With parents as the first educators in children's lives, it is important for you to understand the full implications of digital devices used by your children. While technology can aid in facilitating interactions between parent and child, it should not be a substitute for face-to-face human interaction.

As such, the goal of our campaign is not to stop the use of digital devices amongst young children but to encourage healthy regulation of your child's screen time.

Actively Mediate Your Child's Screen Time

Parental media mediating styles greatly influence children's screen time usage. When you practice active mediation of screen time and discuss media content with your child, he will be more encouraged to exercise his critical thinking skills. Using digital devices together with your child also fosters stronger bonds with your child and shows that you are interested and invested in their learning.

Be a Screen Time Role Model

When you spend a large amount of time on digital devices, your child is likely to imitate your screen time habits as they do not have a basis of comparison. Knowing the negative health associations with excessive screen time, you can be a screen time role model for your child in the following ways:

- Track your own screen time usage
- Avoid using your digital device when bonding and interacting with your child
- Keep your phone away during mealtimes to emphasise that mealtimes are screen-free zones.
- Avoid use of digital devices one hour before their bedtime
- Keep your devices outside the bedroom when you go to sleep so your child understands the importance of undisrupted sleep
- Engage in non-tech activities regularly to show your child that screen-free fun is achievable

SHOULD I SET SOME SCREEN TIME BOUNDARIES?

Every family has their own unique screen viewing habits. Build screen time around family activities and negotiate screen time limits with your child based on their individual needs.

Parental control apps like 'Kaspersky Safe Kids' and 'Screen Time' on Apple devices that filter adult content and track screen time may be effective for safer and appropriate browsing of media content for your child.

MEDIA USE PLAN

As a guide, you can refer to this media use plan to outline screen time usage for the family. While discussing and setting up screen-free zones in the house, explain to your child that the rules are in place not to control them but to help them understand the importance of managing screen time. Cut out the media plan for your own use or scan the QR code to download the soft copy.

TAKE THE SCREEN TIME MANAGEMENT PLEDGE!

By actively committing to the management of screen time for your child and the family, you are a step ahead in ensuring healthier digital device usage and child development.

Scan the QR code or visit playbeyondthescreensg.com/pledge to take the pledge now!

BEYOND THE SCREEN

_____'S MEDIA USE PLAN

	WEEKDAYS	WEEKENDS
How long can I use it for?		
What device am I allowed to use? (e.g. TV, iPad)		
Whom am I watching/playing with? (e.g. mummy/daddy)		
What am I allowed to watch/play?		

SCREEN-FREE ZONES

SUGGESTIONS FOR SCREEN-FREE FUN

In their formative years, young children require sensory activities as they are not conditioned to engage in abstract thinking from screen device use.[18]

Direct experience with toys can facilitate a child's mastery of sensory and motor skills, gradually developing problem-solving, imagination and social skills, which cannot be achieved through digital devices.[19] Additionally, when children dramatise stories through objects, they improve over time in their ability to draw meaning from spoken language, building speech and language skills.[20]

Managing screen time may seem daunting, but fret not! There are many screen-free activities available that are manageable and do not take up much time and effort.

Finger painting

- Excellent tactile experience that helps to strengthen the hand and fingers
- Improves your child's fine motor skills
- Learn more about colours
- Make your very own home-made edible finger paint using just three simple ingredients: flour, water, and food coloring.

Role playing

- Introduce new vocabulary
- Exercises your child's imagination and creativity
- Role play in different types of scenarios tailored to various vocabulary, such as acting out occupations related to the set of vocabulary. E.g. a chef and a customer would use verbs like 'cook', 'chop', 'pay'.

Slime making

- Sensory play activity that allows the children to explore the world of inventiveness in them
- Gets to pour, stir, mix and match their favourite colours and choose whatever decorative items they want to create their very own unique design.

Solving puzzles

- Improves on problem solving skills
- Enhances child's visual knowledge and provide a deeper understanding of puzzle topics and themes.
- Gets better with fine motor skills, hand-eye coordination and self-esteem.

Building

- Fosters creativity, develops fine motor skills, hand-eye coordination and enhances problem-solving.
- Builds their self-confidence when children are able to assemble their imagination into creation.
- Children can build with duplo, train tracks or simply with pillows and sheets to make a fort at home.

Art and Craft

- Working with their hands and practicing repetitive movements and actions helps with focus and discipline
- Carrying supplies and cleaning up helps with gross motor transferring skills
- Creating can give a sense of accomplishment that boosts their self-esteem.

Going outdoors

- Take a walk, go to the playground, play with other children, visit the museums or simply jump around in nature
- Outside is freeing and gives young children the opportunities to expend their energy and feel that great sense of autonomy they crave for.
- Sunshine is also good for their immune system and eyes.

Helping with chores

- Reframe your toddler's love for throwing, pulling and pushing into helping you around at home
- Develops their prosocial skills and make them feel accomplished in being able to contribute.

Cooking/Baking

- Playing in the kitchen can help young children learn about their five senses, some basic math concepts, improve vocabulary and listening skills. E.g. count the number of eggs and asking them to stir the batter for you.
- Preparing meals together can help lay the foundation for healthy eating habits as you encourage kids to taste the ingredients that you're working with and tell them of how healthy foods help them grow stronger.

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ABOUT PLAY BEYOND THE SCREEN

Play Beyond The Screen is a pioneering health communications campaign helmed by four final-year undergraduates from the Wee Kim Wee School of Communication and Information in Nanyang Technological University (NTU). The campaign aims to encourage parents with children aged 1-5 years to actively mediate, reduce and better manage their children's screen time usage by providing useful resources and ideas, all in a bid to combat the negative health impacts of excessive screen time on young children's development.

NOTES

NOTES

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