**Screens and under 5’s**

***(Screens include TV, tablets, game consoles, smartphones and computers).***

The internet, and screens generally have been a lifeline for many, and of course an essential fallback for schools during lockdown. We will have problems to address once we are back at school again, but these would surely have been worse without zoom, google meet and other communication mechanisms we have grown to love and hate.

However, in spite of the benefits, we also have to focus on the risks. This is not to suggest that every child will be “addicted”, and that one unforeseen consequence of the virus is to leave a generation of children unable to get out of their gaming seats. Some of these risks are for our under 5’s who usually get less of our screen-based concerns, but it is important we are looking out for signs of issues we may have to address with children and their parents. It is always a little disconcerting to see a child, barely able to talk, and certainly unable to do up their shoe laces, but able to sweep an ipad into action, however, the concerns are in other places.

Since the 1950s there have been concerns about children watching too much TV, and while the headlines about addicted children are mostly overplayed, professionals and parents need to be aware of risks for *some* children, and especially for those under 5.

**Areas of concern**

**Sleep** – screen use before bed **stops** the hormone (melatonin) being produced, which helps us fall asleep, and then drop into a deep sleep.

Small children need to drop into a deep sleep to release growth hormone essential for their physical and mental development.

*Bruni O et al. Technology Use and Sleep Quality in Preadolescence and Adolescence. J Clin Sleep Med. 2015 Dec 15; 11(12): 1433-1441.*

*Takahashi, Y. et al. Growth hormone secretion during sleep. J. Clin. Investig. 1968, 47, 2079-2090.*

**Early habits** – Small children get into habits, that are then likely to continue into adulthood. A fussy eater at 3, is too often a fussy eater at 13, an active children at 3 is likely to be an active child at 13. Setting screen habits are important for under 5’s.

Children need a broad range of activities to develop well. Critical in these are language and communication (with both adults and other children); physical activity; play (a broad range of games and movement) as well as books and stories. If *any* of these activities become dominant then other areas suffer.

If a child wants to be read for 5-6 hours a day, physical activity and other important areas will suffer.

When screens dominate, this is a problem, but also because of what they are *not doing*.

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| *Avants, B. B. Et Al. Early childhood home environment predicts frontal and temporal cortical thickness in the young adult brain. 2012 Neuroscience Meeting Planner. New Orleans, LA: Society for Neuroscience, 2012. Online.**Gentile DA, Et Al. Protective effects of parental monitoring of children’s media use: A prospective study. JAMA Pediatr 2014; 168 (5): 479–84.**Loewenstein, G. Et Al. Habit formation in children: Evidence from incentives for healthy eating.*[*J Health Econ.*](https://www.ncbi.nlm.nih.gov/pubmed/26717440)*2016 Jan;45:47-54* |

**Dopamine** – games such as Fortnite, Minecraft and Candy Crush are build on small successes which give a child dopamine buzzes, the more they get, the more they want. Children who play these games can find themselves looking for the “buzz” in other activities, and if they do not get it, they will want the games even more.

Day. J.J. Et Al. *Associative learning mediates dynamic shifts in dopamine signaling in the nucleus accumbens. Nat. Neurosci. 2007, 10, 10290-1028.*

*Han, D. H. Et Al. “Brain Activity and Desire for Internet Video Game Play.” Comprehensive Psychiatry 52, no. 1 (January 2011): 88–95.*

*Kim, S. H. Et Al. “Reduced Striatal Dopamine D2 Receptors in People with Internet Addiction.” Neuroreport 22, no. 8 (June 11, 2011): 407–411.*

*Parkin. S. Has Dopamine got us hooked on tech? The Guardian 4th March 2018.*

**Young children’s brain development** – These fall into two main areas, language and learning.

Background TV can reduce under 5’s play and language;

There are NO benefits from screens use for under 2’s;

Under 3’s find it difficult to tell the difference between fact and fiction;

Games will stay with children longer, the younger they are (if a 14 year-old plays an action game for 2 hours, their brain will be back to normal in about 30 minutes, while a 4 year-year-old will take about 3 hours).

Screen use can impact on language and concentration.

*Armstrong, G.B.; Greenberg, B.S. Background television as an inhibitor of cognitive processing. Hum. Commun. Res. 1990, 16, 355-386.*

*Li H, Boguszewski K, Lillard AS. Can that really happen? Children’s knowledge about the reality status of fantastical events in television. J Exp Child Psychol 2015 ;139: 99–114.*

*Zimmerman, F.J. Et Al. Associations between media viewing and language development in children under age 2 years. J. Pediatr. 2007, 151, 364-368.*

*Zimmerman FJ, Christakis DA. Associations between content types of early media exposure and subsequent attentional problems. Pediatrics 2007;120 (5):986–92.*

**The problem about screen use**

Usually when government or health organisations want to give advice, they produce guidelines (units of alcohol, portions of vegetables), the problem with this approach with screen use is that individuals tolerance vary a lot, so too much can be an hour for one person, and 10 minutes for another.

Rather than going for the “hours a day” approach, below we have highlighted a number of symptoms, which will tell you if your child has a problem.

*Viner, R. The health impacts of screen time: a guide for clinicians and parents. Royal College of Paediatrics and Child health. 2019.*

**WHAT TO LOOK FOR**

**Sleep** - children under 5 need 10-12 hours sleep a night to rest, and benefit from growth hormones releases. If your under 5 is not getting this; finding it difficult to go off to sleep; sleeping fitfully and waking up tired, you have a problem.

**Early habits** - If your child finds it difficult to stop playing a game, watching TV or watching YouTube on the tablet, this maybe a problem.

If the tablet is the last thing they touch at night and the first they touch in the morning, then this is problem.

If you regularly see tears, or have furniture kicked when screens go off, you definitely have a problem.

If you start to notice that you are having less conversation’s with your child, or they haven’t been outside for the weekend, with your child moving from the tablet to TV to game console and back to the tablet, you have a big problem.

**Dopamine** - Wanting to be on screens as much as they can; regularly insisting “just one more”; getting upset and angry when they have to stop and not being interested in other types of activities, you have a problem.

**Young children’s brain development** - If your child doesn’t talk a lot and doesn’t have much vocabulary, *and* is drawn to screens whenever they can be, this is a problem.

If your child is flitty, moving from one activity to another and struggling to retain information and interest unless there is a reward or a buzz, this is a problem.

If language and communication skills are slow to develop, and they are showing little interest in writing, drawing and other basic pencil activities, you also have a problem.

**WHAT TO DO**

**Sleep** – start with no screen time in the hour before sleep, which may mean no screens in the bedroom, or at least all screen off. So, for example, if bed is at eight, no screen use from seven (even background TV). No tablet next to beds, bedtime stories on a tablet or a quick game on the phone before sleep.

**Early habits** - Put screens where they belong, as one of a range of activities your child has, and not their first choice and when they have nothing else to do!

Screens are screens, watching TV because a child cannot have the tablet or the phone is just replacing a screen with a screen.

If you get tears, anger and “just one more…” decide what is a reasonable amount in your house and make sure you stick to it consistently. Make sure there are a range of alternative activities. This will lead to a habit where screens are a part of your child’s activities, not the most dominant.

**Dopamine** - Decide how long and how often the game/s can be played and strongly encourage your child to be do other activities. You will know when you reach the right amount, as the fights, upsets and negotiations will stop.

This will probably involve you being more active in play and making sure there are a range of games and alternatives available.

**Young children’s brain development** - Reduce screen use and time and provide more verbal interaction (communication and language).

Encouraged them to stay on an alternative activity and increase the time they spend on these.

For more general reading:

*Screen time and young children: Promoting health and development in a digital world*

*Canadian Paediatric Society, Digital Health Task Force, Ottawa, Ontario*

Paediatrics & Child Health*, Volume 22, Issue 8, 27 November 2017, Pages 461–468,*

*Lloyd. T. FACTSHEET on Boys (5-11) and Screens. Boys Development Project, 2014.*

*Mosher, D. Smartphones horrified me as a new parent -- here's why I stopped worrying and learned to embrace kids' tech-filled futures. Business Insider, Australia. 18th June 2017.*

*Stiglic N, Viner RM. The effects of screentime on the health and wellbeing of children and adolescents: a systematic review of reviews. BMJ Open 2019.*

 *[Wolf, C. Et Al. Children's Environmental Health in the Digital Era: Understanding Early Screen Exposure as a Preventable Risk Factor for Obesity and Sleep Disorders.](https://www.ncbi.nlm.nih.gov/pubmed/29473855%22%20%5Co%20%22Children%20%28Basel%2C%20Switzerland%29.)*

*[Children (Basel).](https://www.ncbi.nlm.nih.gov/pubmed/29473855%22%20%5Co%20%22Children%20%28Basel%2C%20Switzerland%29.) 2018 Feb 23;5(2).*

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