Digital Diets and Screen Time:
The impact on brain development and future academic success

Nurturing Developing Minds
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Angie Neal, M.S. CCC-SLP
Disclosures

Financial –
- Author, The Pirate Who Couldn’t Say Arrr
- Author, Simply Social At School
- Author, TeachersPayTeachers
- Author, Spelling That Makes Sense
- Presenter, SpeechPathology.com
- Presenter, Bureau of Education Research (BER)

Non-Financial – Nothing to disclose.
For every 30 minutes of screen time there is a 49% increased risk of expressive speech delay (Birkin, 2017).
AAP Recommendations

Less than **two hours** per day for children ages 5-18

No more than **one hour** a day for children age 2-5

None for children younger than 18 months of age

Excessive screen time can impinge on children’s ability to develop optimally; it is recommended that pediatricians and health care practitioners guide parents on appropriate amounts of screen exposure and discuss potential consequences of excessive screen use. (Madigan et al., JAMA Pediatrics, 2019)
The use of mobile devices in children has risen from 5 minutes a day in 2011 … to 48 minutes per day in 2017.
In 2017, 1 in 5 children age three to four had their own tablet.

In 2013, 72% of children age eight and under use tablets or smartphones...
In 2011, it was 38%.
40% of children under the age of two were using tablets or smartphones before they could speak.
What this looks like…
Increases in Incidence and Prevalence of Autism Spectrum Disorders

- Nationally, 1 in 59 children had a diagnosis of Autism Spectrum Disorder by the age of 8 (2014). This is a 15% increase over 2012.

- In the 2000-2001 school year, the number of children age 3-21 receiving SPED for Autism was 93,000. In 2014, it was 576,000.

  Its **not** that technology causes ASD, but disproportionate exposure during critical periods can negatively impact the development of social communication, social-emotional skills and behavior.
iPad introduced 2010, Kindle Fire 2012

Widely available WiFi

Estimated Autism Prevalence 2018

* Centers for Disease Control and Prevention (CDC) prevalence estimates are for 4 years prior to the report date (e.g., 2018 figures are from 2014)
There are over 700,000 educational apps...

But do they actually help children educationally?
1. Dopamine

Motivation and reward
2. Frontal Lobe

Modification of emotions to fit socially acceptable norms
3. Executive Function
The “CEO” of the brain
4. Hypothalamic Pituitary Adrenal Axis

“Fight or Flight”
Open Field: Travel Pathway

NORMAL

HYPERACTIVE/RISK TAKING
5. Myelin

Hard wiring the brain for learning
6. Play Skills
The foundation for social-emotional learning.
7. Theory of Mind

Understanding that other people have perspectives different from my own
8. Emotional and Self Regulation

Readiness for learning
9. Speech and Language

Spoken language is the foundation for written language (reading and writing)
10. Literacy

Is all this tech “good” for literacy development?
Digital Diets

- Use apps that monitor and restrict the amount of time technology is used
- Change phone settings to grayscale
- Watch videos or play games TOGETHER.
- Replace screen time with play or book time.
- Establish “technology free” times and locations.
- Follow the recommended time from the AAP …
- Train and practice delayed gratification
- Teach them to be coachable
- The 4 T’s
Thank You!

Any questions?
You can find me at…
ajncccslp@gmail.com