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David Hill, MD, FAAP
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2017 Fall Child Health Updates

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• Completion criteria: the learner must attend 100% of the webinar, complete the participant evaluation which includes attestation by signature on evaluation of their full attendance, and correctly identify the clue word shared during the presentation in order to receive 1.0 CNE contact hours.

• The planners and presenters have no actual, potential or perceived conflicts of interest to disclose.
Kids and Media: What do we do now?

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Chair, American Academy of Pediatrics Council on Communications and Media

October 26, 2017

Self-disclosure statement
Learner Outcomes

Upon completion of this webinar, the learner will be able to state they:

• Have an increased knowledge about the potential positive and negative effects of screen media use by infants, children and adolescents.

• Have an increased understanding about how to counsel families to utilize screen media to maximize the health and developmental consequences for infants, children, and adolescents.
The Grand Unified Theory of Pediatrics

Current Conceptual Framework for Early Childhood Policy and Practice

- Sources of Toxic Stress
- Delayed Development
- Healthy Developmental Trajectory
- Supportive Relationships, Stimulating Experiences, and Health-Promoting Environments

The old paradigm

- No screens under age 2
- Limit entertainment screen time to 2 hours a day
Why do we care?

• In 1971, the average age at which children started to watch TV was about 4 years old.

• In 2015 Most households had television (97%), tablets (83%), and smartphones (77%)

• At age 4, half the children had their own television and three-fourths their own mobile device

• Almost all children (96.6%) used mobile devices, and most started using before age 12 months

• Parents gave children devices when doing house chores (70%), to keep them calm (65%), and at bedtime (29%)
How much media do kids use?
(Common Sense Media, “The Common Sense Media Census: Media Use by Kids Age Zero to Eight” October 19, 2017)

Percent of 0- to 8-year-olds with:
- Any mobile device in the home: 98%
- Smartphone in the home: 62%
- Tablet in the home: 78%
- Their own mobile device: 45%

How are kids accessing media?

FIGURE 1. Screen Media Use, by Platform, 2011 vs. 2017
Among 0- to 8-year-olds, share of time spent with:
- TV: 51% (2011), 42% (2017)
- Computer: 13% (2011), 7% (2017)
- Video game player: 10% (2011), 35% (2017)
- Mobile device: 4% (2011), 4% (2017)

Note: Video game player includes console and handheld players. Mobile device includes smartphone, tablet, iPod Touch, or similar device. Totals may not add to 100% due to rounding.
What are children doing with media?

**FIGURE 2. Screen Media Time, by Activity, 2017**
Among 0- to 8-year-olds, proportion of average daily screen time devoted to:

- 72% TV/video viewing
- 18% Gaming
- 6% Reading (electronic)
- 3% Video-chatting
- 2% Homework
- 1% Other/unknown

What about tweens and teens?

("The Common Sense Census: Media Use by Tweens and Teens." Common Sense Media, 2015)
Can we break it down?

Concerns around media
Media’s Impact on Child Health

Early learning
The “video deficit”


- From age 3 to 6 months infants may see the television, but what they see has no meaning.
- The laws of physics are routinely suspended so what they see makes little sense.
- Sound, light, and motion are inherently interesting, so they may still stare intently at the screen.
- Children aged 12 months and younger do not follow sequential screen shots or a program’s dialogue.
- Children younger than 18 months do not pay much attention to televised programs.
- Children 12 to 18 months of age are more likely to learn from a live presentation than from a televised one and are also more likely to remember the information from a live presentation afterward.

What’s the concern?

- Multiple studies have correlated excessive media use in early childhood with
  - Language delays
  - Cognitive delays
  - Social/emotional delays
The 30 million word gap


Background TV effects


- Children learn language from hearing adults. When the television is on in the background, adults stop talking.

- Having a television on was associated with significant reductions in discernible parental word counts, child vocalizations, and conversational turns for children 2 to 48 months of age.

- “...each additional hour of television exposure was associated with a decrease of 770 in the number of words the child heard from an adult during the recording session, which represents a 7% decrease.”

- A study that examined 12-, 24-, and 36- month-olds found that background television not only reduced the length of time that a child played but also that it reduced the child’s focused attention during play.
Aren’t apps educational?


• Children can begin learning some language from videos between 12 and 18 months
• Requires parental co-viewing, reiteration
• Television cannot interact, computers can but…
• Tapping and swiping is interactive but not educational

When does that change?
The learning starts…


• At 24 months a child can learn from a live video chat or a well-designed interactive app

• At 3-5 preschoolers can learn from well-designed TV programs or apps
  • Literacy
  • Numeracy
  • Prosocial skills

What can’t an app do?


• Most apps have low educational potential

• Target only rote academic skills

• Not based on established curricula

• Use little or no input from developmental specialists or educators

• Don’t improve the higher-order thinking skills and executive functions essential for school success, such as task persistence, impulse control, emotion regulation, and creative, flexible thinking
**Notable exceptions**

- Bedtime Math (Science, 2015)
- Big Bird’s Word app (Sesame internal review)
- Martha Speaks app (Joan Ganz Cooney Center, 2013)
- Cookie Monster’s Challenge (Linebarger, 2014)

**Theory-based apps from Sesame Workshop**

- Divorce
- Moving
- Incarcerations
- Military deployment
- Disaster preparedness
Effects on attention

- Multitasking has been observed in children as young as age 4
- Multitasking and fast-paced media appear to have short-term and long-term consequences for attention span and information processing (Carrier LM, Rosen LD, Cheever NA, Lim AF. Causes, effects, and practicalities of everyday multitasking. Developmental Review. 2015;35(Special Issue: Living in the “Net” Generation: Multitasking, Learning, and Development):64-78.)

Educational Opportunities

- Exposure to new ideas
- Awareness of current events
- Community participation and engagement
- Cooperation on projects
- Novel platforms
  - Kahoot
  - Prezi
  - Khan Academy
  - Codecademy
Behavioral Implications

What are children learning from play?

- 0-2 years: Face-to-face time, sensorimotor exploration, building representational schema, cause/effect
- 1-3 years: Social-emotional development: Imitating, social reciprocity, impulse control
- 3-5 years: Social-emotional development: Pretending, planning out and executing a play idea, processing intense emotions/experiences, navigating peer issues
Infant self-regulation and media

(Radesky et al. “Infant Self-Regulation and Early Childhood Media Exposure.”. Pediatrics, 2014;133:e1172–e1176)

- Children watched an average of 2.3 hours per day (SD 1.9) of media at age 2 years
- Infants with poor self-regulation viewed 0.23 hour per day more media at 2 years
- Children rated as having persistent self-regulation problems (at both 9 months and 2 years) were even more likely to consume media at age 2
- The direction of the arrow of causality is not clear

It’s called a “dyad”


- 40 (73%) had or used a device
- Qualitative analysis of field notes → dominant theme = absorption
- Long duration of use (n=24 used continuously)
  - Modality: texting/swiping
  - Using device individually
- When high absorption:
  - Less parent-child conversation
  - Longer for parent to respond
  - More conflict (parent raising voice, child misbehavior)
Replace your sponge

• Devised a media diet intervention wherein parents of children age 3-5 years were assisted in substituting high quality prosocial and educational programming for aggression-laden programming without trying to reduce total screen time

• At 6 months, the mean Social Competence and Behavior Evaluation score was 2.11 points better in the intervention group as compared with the controls, and similar effects were observed for the externalizing sub scale and the social competence subscale
Virtual violence is...

- Ubiquitous, even in G-rated entertainment
- Absorptive, especially in video games
- Rewarded
- Funny
- Without consequence
AAP virtual violence policy statement


• Summarizing the results of >400 studies including violent media of all types, researchers found there was a significant association between exposure to media violence and aggressive behavior (effect size: 0.19; 95% confidence interval [CI]: 0.19–0.20), aggressive thoughts (effect size: 0.18; 95% CI: 0.17–0.19), angry feelings (effect size: 0.27; 95% CI: 0.24–0.30), and physiologic arousal (effect size: 0.26; 95% CI: 0.20–0.31).

• Effect size is greater than the link between passive smoking and lung cancer

• Most people accept the effect but think their own children are immune

Sleep
Sleep impacts of media


• Taking a phone into the bedroom led to (in adults)
  • longer sleep latency
  • worse sleep quality
  • more sleep disturbance
  • more daytime dysfunction

• Multiple studies replicate these results in children and adolescents, making this one of the most compelling health issues related to media use

Sleep impacts of media

• Academic underperformance
• Obesity/weight gain
• Depression

• Experts recommend a 60-minute screen-free period prior to sleep
• Intensity of light exposure matters, hue may matter
Obesity

What’s the relationship?


• A recent study of 2 year olds found that BMI increased for every hour per week of media consumed

• Cutoff may be 1.5 hours rather than 2 hours, from age 4-9 years

• Effect seems limited to passive programming (Bickham et al., “Characteristics of Screen Media Use Associated With Higher BMI in Young Adolescents.” Pediatrics, April 2013.)

• Why: probably more to do with advertising than activity level

• Best news: the effect is reversible!
Mental health

It depends how you use it

- Social media use and depression seem to follow a U-shaped curve or Goldilocks Effect

- TV’s effect depends on sex and race: it seems to reinforce stereotypes

- Passive use and interactions with strangers correlate more with depression, where active use and interactions with friends promote resilience

- Social media can provide support for LGBTQ kids, those with chronic medical conditions
Problematic Internet Use/Internet Gaming Disorder

- Not yet recognized by DSM-V (need investigation)
- Symptoms:
  - pre-occupation with the activity
  - decreased interest in offline/"real-life" relationships
  - unsuccessful attempts to decrease use/withdrawal symptoms when separated from the online activity or game
- Prevalence of PIU among children and adolescents is between 4 and 8%
- Up to 8.5% of US youth ages 8–18 years meet criteria for IGD
Cyberbullying

• Rates of 10% to 40% depending on study
• Overlaps with in-person bullying but different
  • May be anonymous
  • Invades the home
  • Spreads rapidly
  • Bully and victim may alternate roles
• Similar short and long-term negative social, academic, behavioral, and health consequences for both parties

• Interventions at the individual and school level do seem protective. (Del Rey R, Casas JA, Ortega R. The impacts of the CONRED program on different cyberbullying roles. Aggressive Behavior. 2015)
Risk-taking behaviors

Tobacco/Alcohol/Drugs/Sex

- Decades of research support strong links between exposure in movies and television and teen high-risk behaviors
- Often presented as funny, rewarding, and without consequences
- Adolescents’ displays on social media frequently include portrayal of risky health behaviors such as illegal alcohol use or overuse, illicit substance use, high-risk sexual behaviors, and harmful behaviors such as self-injury and disordered eating
- Peer viewers find this behavior normative, desirable
Sexting

- Electronic transmission of nude or semi-nude images as well as sexually explicit text messages.

- Approximately 12% of youth age 10-19 years have ever sent a sexual photo to someone else.

- Many youth who sext report feeling pressured into sending a sext.

- Higher frequency of sexting among females, lesbian, gay, bisexual (LGB) youth, greater number of past-year sex partners, and greater odds of depression and substance abuse.

“Hook up” sites

- **skout.com**: moderated, age-matched, arguably the safest site.
- **tinder.com**: hooking up, efficiently, based on photos.
- **badoo.com**: adults only, but not moderated.
- **hotornot.com**: grouped into 13-18 and 18 and older, but no age verification process.
- **meetme.com**: chatting, location-based service.
- **omegle.com**: anonymous chat, often turns sexual.
Online Solicitation

• A national survey of 10 to 15 year olds who had used the Internet within the preceding 6 months found that 15% had experienced an unwanted sexual solicitation while online within the past year.

• More commonly peer solicitation than adults.

• Chat rooms more dangerous than social media sites.

• More than half of adult offenders disguise their online identities.

Digital Footprint

• Most kids understand privacy settings

• But not all choose to use them
What Teens Share Online

- 91% post a photo
- 71% post their school name
- 71% post city/town where they live
- 92% post their real name to their favorite profile
- 84% post their interests
- 82% post their birth date
- 62% post their relationship status
- 24% post videos of themselves
Sharing by age

<table>
<thead>
<tr>
<th>Personal info posted to social media profiles: Gender and age</th>
<th>Teen Social Media Users</th>
<th>Boys (a)</th>
<th>Girls (b)</th>
<th>Teens 12-13 (a)</th>
<th>Teens 14-17 (b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your real name</td>
<td>92%</td>
<td>92%</td>
<td>92%</td>
<td>89%</td>
<td>93%</td>
</tr>
<tr>
<td>A photo of yourself</td>
<td>91</td>
<td>89</td>
<td>94</td>
<td>82</td>
<td>94</td>
</tr>
<tr>
<td>Your interests, such as movies, music, or books you like</td>
<td>84</td>
<td>84</td>
<td>85</td>
<td>81</td>
<td>85</td>
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<tr>
<td>Your birthdate</td>
<td>82</td>
<td>81</td>
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<td>79</td>
<td>83</td>
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<tr>
<td>Your school name</td>
<td>71</td>
<td>73</td>
<td>69</td>
<td>56</td>
<td>76</td>
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<tr>
<td>The city or town where you live</td>
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<td>73</td>
<td>69</td>
<td>67</td>
<td>72</td>
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<tr>
<td>Your relationship status</td>
<td>62</td>
<td>62</td>
<td>61</td>
<td>50</td>
<td>65</td>
</tr>
<tr>
<td>Your email address</td>
<td>53</td>
<td>57</td>
<td>49</td>
<td>53</td>
<td>53</td>
</tr>
<tr>
<td>Videos of you</td>
<td>24</td>
<td>27</td>
<td>21</td>
<td>25</td>
<td>24</td>
</tr>
<tr>
<td>Your cell phone number</td>
<td>20</td>
<td>26</td>
<td>14</td>
<td>11</td>
<td>23</td>
</tr>
</tbody>
</table>

Teens “get” privacy

<table>
<thead>
<tr>
<th>Facebook privacy settings</th>
<th>Among teen Facebook users, the % with the following privacy settings...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't know</td>
<td>1%</td>
</tr>
<tr>
<td>Public</td>
<td>14%</td>
</tr>
<tr>
<td>Partially Private</td>
<td>25%</td>
</tr>
<tr>
<td>Private</td>
<td>60%</td>
</tr>
</tbody>
</table>
Teens actively manage online reputations

<table>
<thead>
<tr>
<th>Teen reputation management activities on social media</th>
<th>% of teen social media users within each group who do the following to monitor their online reputation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Delete or edit own post</td>
</tr>
<tr>
<td>Total teen social media users (n=693)</td>
<td>59</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Boys (n=308)</td>
<td>59</td>
</tr>
<tr>
<td>Girls (n=324)</td>
<td>58</td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>12-13 (n=151)</td>
<td>64</td>
</tr>
<tr>
<td>14-17 (n=461)</td>
<td>57</td>
</tr>
</tbody>
</table>

A Brave New World
Clue Word

screens

Benefits of media use

• Learning, especially after age 3, especially when co-viewed with an adult

• Connection to family members, friends, communities, and supportive virtual communities

• Promotion of healthy behaviors through gamification, supportive tweets (Tweet4Baby), informational sites

• Exposure to new ideas and information, current events and issues
What can parents do? (FOSI)

• Talk with your child, ask questions.
• Educate yourself, or, better yet, have your child educate you.
• Use parental controls (?).
• Establish a family media plan.
• Friend and follow.
• Set an example!

What can parents do? (CSM)

• Discuss a code of conduct. Tell your kids that if they wouldn’t say something to someone’s face, they shouldn’t text it, IM it, or post it.
• Remind your teens to use social networks’ privacy settings so only their close friends and family members can see their stuff.
• Tell them not to send pictures to strangers or view pictures that strangers send to them.
• Explain to them that even messages and photos that promise to self-delete can be saved and shared by others.
• Keep passwords private.
• Remind your teens that people aren’t necessarily who they say they are online.
What can parents do? (me)

- Avoid pop-ups, contests, giveaways.
- Keep the device where you can see it.
- No overnight screens in the bedroom.
- Discuss online reputation.
Filtering software?

- Net Nanny
- PureSight PC
- My Mobile Watchdog
- TeenSafe
- Features
  - Word filtering
  - Keystroke monitoring
  - Site/chat blocking
  - Location reporting

Router Solutions

- circle with Disney
- Norton Core
- Torch
- netpure
- Verizon FamilyBase
- Device-specific parental controls
Prioritizing health & development

*School*

*The Child*

*Family Routines*

*Physical Activity*

*Emotional Regulation*

*Sleep*

...then media

Family Media Plan

- What age to start? (Only video chat under 18 months?)
- How much time?
- What use is appropriate?
- Ensure adequate activity
- Protect sleep time, meal times
- Monitor use
- Model digital citizenship
- Co-view/use media
Family Media Plan

Media should work for you & work within your family values & parenting style. When media is used thoughtfully & appropriately, media can enhance daily life. But when used inappropriately or without thought, media can displace many important activities such as face-to-face interaction, family time, outdoor play, exercise, unplugged downtime & sleep.

By creating a Personalized Family Media Use Plan, you can be aware of when you are using media to achieve your purpose. This requires parents & users to think about what they want their purposes to be. The tool below will help you to think about media & create goals & rules that are in line with your family’s values.

To make YOUR family’s Media Use Plan, start by entering your family’s information. This information will remain private and confidential.

Get Started

Create Your Family Media Plan  Media Time Calculator

https://www.healthychildren.org/English/media/Pages/default.aspx#home

Resources

- healthychildren.org/English/media/Pages/default.aspx
- commonsense.org
- cmch.tv
- FOSI.org
- timewellspent.io