

# Digital health

Scott Krugman, MD, MS, FAAP

Vice-Chair, Pediatrics

Herman & Walter Samuelson

Children's Hospital at Sinai

# POTENTIAL HEALTH EFFECTS OF THE DIGITAL CLASSROOM

# Vision Findings

- **Risk of Myopia**
- **Computer vision syndrome**
- **Sleep Disruption**
- **Dry eyes**

# Gross Motor Findings

- **Vary Tasks**
- **Teach/monitor ergonomics**
- **Respond to Discomfort**

# Sleep Findings

- **More screentime = less sleep**
- **Light and Melatonin**
- **Cognitive Stimulation**

# Fine Motor Findings

- **Handwriting Skills**
  - **Grip**
  - **Keyboarding skills**
- **Keyboarding Skills**

# Learning in Early Childhood

- **Responsive Parent/Child Interactions**
- **Unstructured and Social Play Develops**
  - **Task Persistence**
  - **Impulse Control**
  - **Emotion Regulation**
  - **Creative Thinking**

# Reading Comprehension

- **Complex Text Mastery**
  - Numerous university studies demonstrate perception of (and sometimes measurement of) better understanding of complex text when it is read on paper
- **Norway Study**
  - 10<sup>th</sup> graders who read text on computer had lower reading comprehension than those who read paper text



# Social-Emotional Findings

- **Social-emotional Development**
- **Anxiety/Depression**
- **Bullying**
- **Sexting**

# Time on Computers

- **AAP Guidance**
  - <https://www.healthychildren.org/English/family-life/Media/Pages/How-to-Make-a-Family-Media-Use-Plan.aspx>
- **Measurement**
- **Content**

Healthy classrooms & children

# RECOMMENDATIONS

# Classroom

- **Recess**
- **Movement**
- **Sound**
- **Homework**

# Best Ergonomic Practices\*

- Mixture of sedentary and active tasks
  - Encourage reasonable postures during sedentary tasks
  - Encourage appropriate behaviors using/transporting computers
  - Teach children computing skills
  - Teach children to respond to discomfort
- \*Straker et al, Evidence-based guidelines for the wise use of computers by children: Physical development guidelines. *Ergonomics*, 2010. 53(4).

# Professional Learning for Teachers

- **Motivation & Rewards**
- **Social-emotional Development**
- **Ergonomics**
- **Balance**
- **Handwriting & Memory**
- **Adult/child interaction in classroom**

# Curriculum Development

- Handwriting
- Keyboarding
- Rewards
- Paper Texts

# School Nurses

- **Health Education**
  - **Students**
  - **Teachers/Faculty**
  - **Family**



# Healthy Computing in the Classroom

Strike a Balance



Get Moving



Maintain Relationships

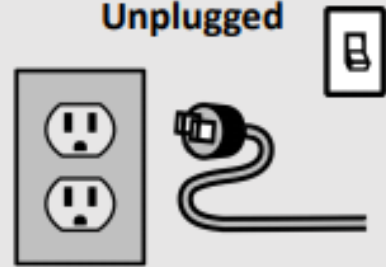


Take Visual Breaks

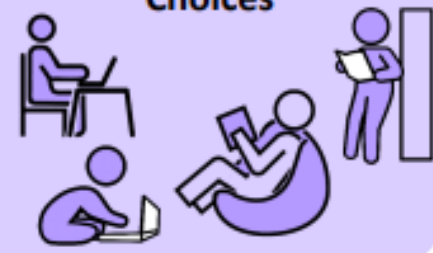
Look 20 Feet Away for 20 Seconds every 20 Minutes



Spend Time Unplugged



Make Comfortable Choices



# Parent & Family

- **Earbuds**
- **Parent/child interaction**
- **Sleep**
- **Rules**
- **Balance**
- **Family Media Plan**

# IT TAKES A VILLAGE TO RAISE HEALTHY KIDS IN A DIGITAL WORLD

For more info and the Digital Health committee task force report see:

[http://www.bcps.org/growing\\_up\\_digital/healthy\\_balance/](http://www.bcps.org/growing_up_digital/healthy_balance/)

Thanks to Debbie Somerville and Cynthia Boyd for content and review