Infant screen use linked to alterations in cortical EEG before age 2

January 30 2023, by Elana Gotkine

Infant screen use is associated with alterations in cortical

electroencephalography (EEG) activity before age 2 years, according to a study published online Jan. 30 in *JAMA Pediatrics*.

Evelyn C. Law, M.D., from the Yong Loo Lin School of Medicine at the National University of Singapore, and colleagues conducted a prospective maternal-child dyad cohort study. Pregnant mothers were enrolled in their first trimester (June 2009 through December 2010). The cohort included 506 mother-child dyads; 437 children had complete behavioral data for analyses at age 9 years.

The researchers found that at 12 months, the mean amount of daily screen time was 2.01 hours. Screen time at age 12 months was associated with multiple attention and executive functioning measures at age 9 years. A subset of 157 children underwent EEG at age 18 months; a graded correlation was seen for EEG relative theta power and theta/beta ratio at the frontocentral and parietal regions with 12-month screen use.

The association between infant screen time and executive functioning at school age was partially mediated by frontocentral and parietal theta/beta ratios in the structural equation model accounting for household income, forming an indirect path, which explained 39.4 percent of the association.

"Given the pervasiveness of infant screen use, our findings have public health implications on a population level," the authors write. "Further efforts are urgently needed to distinguish the direct association of infant screen use versus family factors that predispose early screen use on executive function impairments."

One author reported consulting for Lab1636.

More information: Evelyn C. Law et al, Associations Between Infant Screen Use, Electroencephalography Markers, and Cognitive Outcomes,

JAMA Pediatrics (2023). DOI: 10.1001/jamapediatrics.2022.5674