AWERNESS ALERT

Research-based information for Clinicians and other Care Providers to support the optimal development of children ages 0 to 3

Direct and Indirect Exposure to Digital Devices is Associated with Serious Developmental Risks for Babies and Toddlers

Brain development in the first years of life is extremely dynamic and highly sensitive to social and experiential factors. Face-to-face, responsive interactions with human beings and full-sensory physical activities support the overall development of very young children and strengthen their sense of trust and safety.

In recent years, concerns about TV watching as a risk factor for early life developmental harm have shifted to include smartphones and other portable digital devices. While digital devices have become integral to the lives of adults, **extensive and growing global research has intensified earlier findings that frequent and prolonged screen exposure among children ages 0 to 3 can disrupt their cognitive, physical, language, and social-emotional development.**

In addition, artificial intelligence products are rapidly transforming young children's real-world and media environments, despite that most products have little to no scientific evidence they are safe for use by children 5 and under.

3 out of 4 children under age 2 exceed screen media time guidelines, but caregivers who become aware of specific recommendations allow young children significantly less time with digital devices than parents who are not aware.

Higher levels of early-life screen viewing are associated with:

- Decreased quality of caregiver-to-infant attachment and interaction.
- Atypical brain development.
- Language delay.
- Autistic-like symptoms.
- Atypical sensory processing.
- Poor executive functioning and problem-solving skills.
- Problems socializing with peers.
- Decreased sleep quantity and quality.
- Diminished motor skills.
- Greater risk of accidental injury.

New evidence also shows that excessive digital device use by caregivers in the presence of their children (behavior generally known as "technoference") can evoke a distress response in infants and interfere with vocabulary development. When technology interferes with adult responses to very young children's bids for attention, it can result in fewer adult words spoken, fewer child vocalizations, and fewer adult-child conversations.

Caregiver digital device use in the presence of young children is also associated with weaker caregiver-child attachment, declines in children's cognitive and social-emotional health, increased child digital device usage, and poorer language development.

Using mobile devices to calm very young children can result in acting out behavior and increased emotional reactivity as they grow, as well as diminished language and educational skills, and problems associating with peers.

Television playing in the presence of a very young child can result in distracted play, increased oppositional defiant behaviors, and less caregiver-child interaction and

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Elterenschoul Janusz Korczak

can reduce the child's language acquisition over time.

Compared to how babies learn in person, a learning deficit is associated with babies' viewing of media content on screen-based devices. In addition, video programs made for young children may use manipulative design techniques to keep the children viewing. Young children's heavy tablet use is linked to more anger outbursts over time.

Considerations for care:

- **Communicate digital device use recommendations.** Recommendations vary by country. Most advise no digital device use by or around children until at least age 2, except for brief video chats with caring adults. The French Health Ministry and German national guidelines recommend that children under age 3 avoid direct and indirect digital device exposure. The World Health Organization recommends no sedentary screen time under age 2 (such as watching TV or videos, playing computer games) and that children ages 2 to 5 have no more than 1 hour (or preferably less) sedentary screen time in a day. Adults should avoid prolonged digital device use in the presence of young children and keep audible notifications to a minimum.
- **Use the precautionary principle with AI products.** Concerns have been raised about AI-enabled products, including the effects of low quality AI-created media content on infant perceptions. Placing infants into environments that have AI-enabled products (such as smart bassinets) have the potential for harming early relational health through reduced parent soothing, which is critical for early bonding. Little to no scientific evidence on the impacts of AI-enabled toys on the development of children aged five and under, but early research shows the products can misinterpret children's emotional cues and are ineffective at supporting critical developmental play. Until more is known about the effects of AI products, UK government guidance can serve as a model that young children should avoid interacting with AI toys, AI apps, AI tools, robots, chatbots, and smart speakers.
- **Inform caregivers about screentime risks and support them in management strategies** from the first prenatal visit, in the maternity ward, and at every well-child exam. Emphasize babies' need for full-sensory physical play and caregivers' responsive, warm touch and face-to-face interactions. If you suspect a very young child may be experiencing negative effects from digital device usage, suggesting a stop to digital exposure and great increase in non-tech play and face-to- face human interaction has been shown to be helpful.
- **Encourage caregivers to support their children's early brain development,** Inform caregivers of how their own device use can make them less responsive to children's needs, including adults who care for children alone in the home. Encourage all caregivers, including parents-to-be, to prioritize quality, face-to-face engagement with their young children and have times of the day (such as meals) and spaces in the home (such as bedrooms) that will be tech-free for all family members.
- **Support caregiver mental health and well-being.** Caregiver mental health affects babies' time spent with digital devices. Psychological distress among caregivers is associated with lower developmental scores among their young children. Help caregivers address sources of stress that could potentially lead to increased caregiver or child digital device usage. Because of the high prevalence of postpartum depression and anxiety, screening is advised, with referral as needed.
- **Be a good example.** Make the public areas in your healthcare setting TV- and device-free. Provide non-tech objects for children's amusement, such as blocks and sturdy books. Display and distribute information about child-supportive digital device management.

Every encounter with a child and caregiver is an opportunity to model healthy brain- and relationship- building conversation and behavior.

Prepared by GAINING—The Global Alliance for Inspiring Non-Tech Infant Nurturing and Growth.
Alerts, research and more at MyBabyGains.org

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