

The Children and Screens Guide *for* **Early Child Development** *and Media Use*

Infants and Children Ages 0-5



Children
and Screens

Institute of
Digital Media and
Child Development



The first five years of a child’s life are a magical time of rapid development that is foundational for their later cognitive, social, physical, and behavioral health. As families worldwide navigate the integration of digital technologies and media into daily life, researchers and clinicians continue to investigate the impacts of screen use on all facets of development, from infancy through late adolescence. Children and Screens has summarized insights from current research and experts in the field to help parents and caregivers of infants and very young children learn how to build a foundation of healthy brain, neural, and social development – and help families determine how they can intentionally and most beneficially incorporate media use into their child’s life.



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The Big Do's and Don'ts

- Caring, distraction-free, serve and return (responsive back-and-forth) interactions between caregivers and children, starting from birth, are essential to healthy child social, emotional, and cognitive development.
- Screens are a poor substitute for in-person social interaction to support cognitive and social development.
- Real-life “traditional” play is the most beneficial type of play for child development.
- Avoid any screen time for a child under 18 months or even two years old, except for video chatting.
- Choose content carefully after age two - wait for developmental readiness, and pull back if a child shows signs of negative impacts of screens.
- For children over two, follow guidelines in “Tips for Choosing Quality Media Content” for evaluating the quality of media content for young children.
- Research shows parent/caregiver media use impacts your infant and young child. Put your own phone down and away when interacting with infants and young children.
- Keep media and digital devices out of bedtime routines and bedrooms.
- Eliminate “background” media around infants and young children.

(Note: read the full guide for a detailed explanation of each “do” or “don’t”)



Tips for Cognitive Development

Birth to age five is a period of rapid cognitive development, where infants and toddlers develop the mental abilities for perception, memory, language acquisition, problem-solving, symbolic representation, and object understanding. Children's cognitive development can be affected by environmental experiences, including screen use. Below are tips to help promote optimal cognitive development and healthy use of media with infants and young children.

- ▶ **Have Quality Conversations**
- ▶ **Infants**
- ▶ **Preschoolers**
- ▶ **Minimize Or Eliminate Screen Time For Babies Under 18 Months**
- ▶ **Video Chatting Can Be The Exception To The Rule**
- ▶ **Wait To Use Media For Learning Until Children Are Developmentally Ready**
- ▶ **Consider Attentional Impacts Of Media Use**
- ▶ **Provide Traditional Play Opportunities for Healthy Development**
- ▶ **Assess how interactivity is incorporated into media for young children**
- ▶ **Encourage Independent Exploration To Build Creativity**
- ▶ **Avoid asking Questions with 1-word Answers**
- ▶ **Set Up Sensory Stations and Surprises**
- ▶ **Don't Mistake Child Engagement for Learning**
- ▶ **Reduce Background TV And Video Games**
- ▶ **Curb Your Own Media Use In Front Of Your Infant Or Young Child**
- ▶ **Wait Until Ages 2 and Up**
- ▶ **Create a "Word-Rich" Environment**
- ▶ **Increase Reading Difficulty Of Books Over Time**
- ▶ **Read Illustrated Books Aloud Versus Audio Or Animations**
- ▶ **Consider Print Book Reading Versus Digital Book Reading**

Have Quality Conversations – And Lots Of Them – Starting In Infancy

Children’s language development is based on a “social brain,” says Kathy Hirsh-Pasek, PhD, Lefkowitz Faculty Fellow in Psychology at Temple University and Senior Fellow at the Brookings Institution. “It needs humans — back and forth conversations with humans. What we have learned in the last eight to ten years is that those conversations actually build brain structure and brain connectivity. As they’re building language, they’re building so much more. You’re helping your child with attention; you’re helping your child with memory. All these things come together... It’s the interactions that matter and the way they build on each other. That’s the magic sauce.”

Infants

The quality of these back and forth interactions matters enormously – as much as the quantity. For infants, it’s important to look into their eyes to have those conversations, says Hirsh-Pasek. “Babies are hearing us. Even if they can’t have the conversation back, know that they’re listening. They’re looking for patterns from a very early age. Take a minute of time and look in the eye of your child and see what your child’s noticing, comment on it and have that conversation. Even if they can only coo, even if they can only ‘goo goo,’ it’s okay. Let that conversation start to bud.”



Preschoolers

Parents of preschoolers often wonder how to get their children ready for academics in kindergarten. The answer is simple, says Angie Neal, MS, Speech Language Pathologist Policy Advisor for Speech-Language Pathology and Early Literacy at the South Carolina Department of Education. “How do I help my child be ready for school? Conversation. That’s the secret.”

The back-and-forth of a conversation rich with words is more important than the content, says Hirsh-Pasek. “I don’t care if you were talking about the slugs that live under the rocks in your front yard, or how grass grows, or looking at the ants. If that kid’s interested in it, have a conversation about it.”

“My first big recommendation is talk like a cooking show host like Rachel Ray or Guy Fieri,” says Neal. “As you talk about what you’re doing while you’re doing it, you’re exposing children to all of the words that describe what you’re doing. Similarly, talk like a sports announcer, or a golf announcer, or football announcer. They’re not describing what they’re doing. They’re describing what someone else is doing. So, by the same token, you can describe what the child is doing. Again, giving them the words to match their actions, that maybe they didn’t know. Do some thinking aloud, problem solving.”

Minimize Or Eliminate Screen Time For Babies Under 18 Months

“There is no evidence, based on many studies that have been done by many scientists, that screens can enhance children’s language acquisition or their cognitive development under the age of 18 months,” says Dimitri Christakis, MD, MPH, Chief Science Officer of Children and Screens, and George Adkins Professor of Pediatrics, Adjunct Professor of Psychiatry, and Adjunct Professor of Health Services, University of Washington School of Medicine. “As they get older, that changes.”

“All over the world, we see the same things being said by the experts. And that is: turn it off, especially if they’re under two,” says Hirsh-Pasek.

Some research suggests that screen time for babies and young toddlers affects parts of the brain that deal with executive function and self-regulation, says Susan Linn, EdD, Lecturer in Psychiatry, Harvard Medical School, and Research Associate, Boston Children’s Hospital. “There’s some evidence that parts of the brain are underdeveloped in young children who have a lot of time with screens,” she notes. Both self-regulation and executive function are key for cognitive function and eventual success as an adult.



Video Chatting Can Be The Exception To The Rule

One exception to a general rule of no screen time under two is interactive video chatting with responsive loved ones, like grandparents, note many experts. “Using something like FaceTime can be a really beneficial way for a child to be exposed to language with their grandparents,” says Sarah Kucker, PhD, Assistant Professor of Psychology, Southern Methodist University. Interactive conversations over video chat also can increase the bond between a young grandchild and their grandparent, as well.

Wait To Use Media For Learning Until Children Are Developmentally Ready

Between the two to three-year-old mark there are dramatic changes in how kids learn from screen media, says Heather Kirkorian, PhD, Laura M. Secord Chair in Early Childhood Development, School of Human Ecology University of Wisconsin-Madison. Applying information learned in a two dimensional screen environment and transferring it to the real world is difficult for children before this age, notes Kucker.

Parents should keep in mind that until around ages 4-5 there is what is called a “transfer deficit” in

moving learning from one context to another. Learning from a tablet is difficult before age three and makes any information gained relatively limited due to this difficulty of transferring experiences from the screen to the real world, says Kucker. Though most research has established this “transfer deficit” exists up to around age three, recent research from Kirkorian and others has shown this transfer deficit can manifest for memory-related tasks up to ages four or five.

[*\(Read more on signs of developmental readiness on p.24 \)*](#)

Consider Attentional Impacts Of Media Use

Recent research indicates an increased difficulty in gaining child attention when they are using media apps versus in other play situations, says Christakis. A study from Christakis and others demonstrated this difference in the ability to gain toddler attention with and without highly interactive screens nearby. “We did this across conditions with a regular toy, with an electronic toy, and then with one of these highly engaging apps, and found that children’s attention was much more difficult to command when they were playing with one of those highly engaging apps,” he notes.



Provide Traditional Play Opportunities for Healthy Development

Early childhood experts agree: the most important foundation for children’s healthy cognitive development is real-life play, with benefits that carry through childhood into the adult years. “Children are going to learn best in play and interaction with their peers,” says Lisa Linder, PhD, Licensed Clinical Psychologist, Professor of Child and Family Development, San Diego State University. Research has continually shown that more academics earlier in life does not lead to better academic outcomes later in life, she notes. “What young children need is more open-ended play, more interaction, more scaffolding of social interactions, because those form the foundation for the ability to function once they’re in an academic environment.”

While parents may consider play more important for social development, it’s also critical for development of the cognitive skills needed for reading comprehension, says Neal, who notes that time on screens displaces time that could be spent in play which helps support critical areas of brain development. This is especially important for children from birth through the age of five.

“Traditional” play, such as rigorous muscular play, rough and tumble play, blocks, paint, and clay, provide information via muscles, joints, and the balance system that benefit children cognitively, says

Gilbert Foley, EdD, Consulting Clinical Psychologist at the New York Center for Child Development and Clinical Co-Director at the NYC Early Childhood Mental Health Training and Technical Assistance Center. Engaging in healthy amounts of this traditional play is becoming imperiled by screens, he notes.

In addition, there isn’t much evidence that electronic toys are generating better cognitive outcomes with children compared to traditional toys, notes Stephanie Jones, PhD, Gerald S. Lesser Professor of Child Development and Education at Harvard Graduate School of Education.

Children are going to learn best in play and interaction with their peers,”

Lisa Linder, PhD

SAN DIEGO STATE UNIVERSITY

Assess How Interactivity Is Incorporated Into Media For Young Children

Interactivity and engaging features in media for preschoolers isn't necessarily a problem in and of itself. A big factor in its impact on learning appears to be how the interactivity is incorporated in the media, says Kirkorian. If the "bells and whistles" and mini-games detract from the lesson or story, it can disrupt learning. On the other hand, if the interactivity is incorporated meaningfully into the lesson or story to reinforce the right thing at the right time, it can enhance learning, she says.

[*\(See more on evaluating content and apps for quality on p.31\)*](#)

Encourage Independent Exploration To Build Creativity

Children who engage in exploration behaviors are more likely to be successful in creative tasks than those who do not, says Natalie Evans, PhD, Postdoctoral Fellow at University of Virginia. Encourage this exploration early in life by asking leading questions about how a child might interact with a toy, versus providing specific instructions.

Other elements of exploration that help encourage creativity:

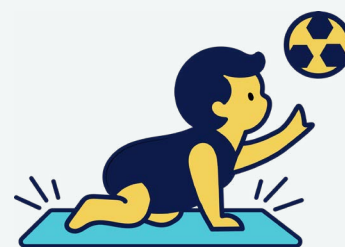
Joyful – kids having fun in the process of exploring and playing

Interactive – peer to peer interaction or adult providing a supportive role

Meaningful – child-led based on child interest

Active – Hands-on, not passive, supported by adult questions and encouragement of child question-asking

Iterative – Options for the child to try, fail, retest, and try again



Avoid Asking Questions With One Word Answers

If a one-word answer is possible to a question, kids will often limit themselves to it, says Neal. "As soon as you ask your child 'How is your day?' they're going to respond with, 'Fine.' Instead, think about how we can ask those same questions in ways that will elicit more language, such as 'Tell me three things about your day.' When you know three things about their day, that gives more fuel for more conversation." Ideally you can then get past just you asking questions and launch into a conversation that creates connection and understanding about how your child is thinking and feeling, she says.

Set Up Sensory Stations and Surprises

Young children learn with all of their senses. Encourage sensory stimulation by providing as many areas as possible where it's OK to get messy and use all the senses, like playing with bubbles, sand, or spaghetti, says Hirsh-Pasek. "Every three- or four-year-old needs a place they can go in their house; if you have a tiny apartment then maybe you set it up in the bathroom and it's only there for certain hours of the day." There are also sensory boxes and bags that children love and are mostly inexpensive, she notes.

Parents can also engage in "strewing," which involves "artfully" strewing items on the floor for young children to discover, says Hirsh-Pasek. This doesn't mean dumping all their toys on the floor but having a few strategically chosen items that you know will engage a child's interest, perhaps ones that haven't been played with in awhile, strewn around while everything else is tidied on its shelf. "Screens are mesmerizing but if [kids] find something strewn around that leads them in a certain direction, they're like 'Oh this looks cool to play with!'"

Don't Mistake Child Engagement for Learning

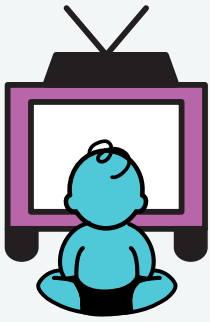
Visual signs of child engagement with media content is not indicative of learning, though parents may easily think child engagement and learning are one and the same. A recent study showed that parent preference for children's media was more related to their perceptions of how much they thought their child was learning, rather than how much the child was actually learning. "Parents see children engaging in a screen – it's very flashy and colorful and exciting, and the music is fun, so children are going to look at it. But that doesn't necessarily mean that they're getting anything out of it," cautions Rebecca Dore, PhD, Director of Research at the Crane Center for Early Childhood Research and Policy, The Ohio State University.

"The television does not know, nor does an app know, how to be adaptable. It may be interactive sometimes, but it is not adaptable in a conversation with a little person. And that adaptability is what matters," says Hirsh-Pasek.



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Rebecca Dore, PhD
THE OHIO STATE UNIVERSITY



You may think you're still having a conversation with your kid when you're engaged in something else, but you're not, and we can tell that from the data.

Kathy Hirsh-Pasek, PhD

TEMPLE UNIVERSITY,
BROOKINGS INSTITUTION

Reduce Background TV And Video Games

Research indicates that background media, like a TV or video game on the TV in the room, even if not being paid attention to, can significantly distract from parent-child social interaction, which can in turn affect language development, says Kucker. “When background media is on during the parent-child interaction, both the parent and the child are distracted by that, and they’re more likely to turn around to disrupt the interaction. So parents are saying less, and the things that they’re saying are also lower in quality. Their sentences may be shorter or they may not repeat the information quite as much. They may give less information around the object.” Over time, this can affect the child’s exposure to the information needed for language development.

Many parents falsely assume that young children aren’t paying attention to the news if it’s on nearby while they play, or that they can’t understand it even if they do notice, but research has shown that TV news playing in the background has roughly the same impact on young children’s sleep at night as sitting and watching a violent movie or show. Quality sleep is foundational for cognitive health and development.

Curb Your Own Media Use In Front Of Your Infant Or Young Child

Parent/caregiver media use impacts young children’s learning and development, say experts. One study from Hirsh-Pasek and others involved young children doing a word learning task while a phone call came in for their parents. The parents were asked to answer the phone or not answer the phone when it rang, with all other conditions being equal, including the number of words being given to the children. What happened? The children of the parents who answered the phone did not learn any of the words, she says.

Do not overestimate your attentional capabilities to multitask, warns Hirsh-Pasek. “You may think you’re still having a conversation with your kid when you’re engaged in something else, but you’re not, and we can tell that from the data. You don’t ask the same kind of questions; the number of questions goes down.” A reduction of questions is a reduction in the developmentally important conversations you are having with your child.



Wait Until Ages 2 and Up - Then Choose High Quality, Evidence-Supported Content

Ages two to five are a “magical period” where quality content or TV shows like Sesame Street have been shown to improve children’s cognitive, social, and emotional development, says Christakis. There is a sound evidence base behind quality shows for this age group, showing that they can help teach letters and numbers, and promote prosocial development. Be selective about what shows are watched (how to find quality content - [hyperlink to content tips section](#)) - “there’s a lot of evidence that children imitate behaviors on screen, positive and negative,” he notes.

What makes content helpful for child learning? If it’s active and engaging, meaningful, socially interactive, iterative, and joyful, says Hirsh-Pasek. “That’s the “how” of learning. You can apply it to any content. You can apply it to math. You can apply it to vocab. You can apply it to learning how to do narrative and language and reading. If you have those qualities, then you end up with a better app that has ‘sticking power’ and kids learn more from them.”

Even with “good” apps for learning, incorporate these as part of an overall “healthy diet” of media within the course of the day, say experts. Though time with a quality app may be well spent for a specific learning task, it’s not well-spent if a child is spending three or four hours a day on it, cautions Christakis.

Create a “Word-Rich” Environment

Babies and young children develop language from everything around them and develop the skills needed for reading early in life. Creating a language-rich environment in the first few years of life through book reading and interactive social experiences helps develop these skills. “Children need to have lots of opportunities to be exposed to words before they start reading,” says Neal. “Everything has the potential to be a language-rich environment as long as someone is there talking with the child and making connections to everything that is in the environment.”



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Angie Neal, MS

SOUTH CAROLINA DEPT. OF EDUCATION

Increase Reading Difficulty Of Books Over Time

Educational researchers often refer to a concept called “scaffolding” in describing how to help develop learning and language skills. With books, this would involve starting with just picture board books and then stacking on more complicated books as the child matures.

“Going from sharing very simple board books, to longer picture books, to beginning readers that have some pictures but less, and then eventually books without pictures, where the child has the opportunity to develop imagination in their visual and language brain networks and can then rely on imagination to visualize and understand a story and bring it to life in their mind – his trajectory [is what] we’re looking for as children learn to read,” says John Hutton, MD, MS, FAAP, Associate Professor in the Division of General and Community Pediatrics at the University of Texas Southwestern Medical Center.

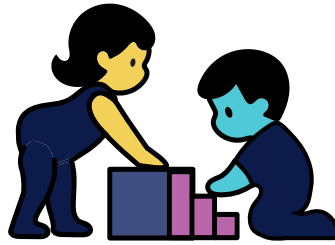
Read Illustrated Books Aloud Versus Audio Or Animations

A research team led by Dr. Hutton has used MRI to compare brain network activity in preschool-age children presented with stories in different formats: regular illustrated picture books, audio books and animation. What did they find? In these children, during the audio-only format, the language brain network showed a “strain” pattern, suggesting the child was hearing words they had trouble visualizing or understanding, described as “too cold.” On the other hand, during the animated story, visual, imagination, attention and language brain networks weren’t connecting or cooperating in a balanced way, with high emphasis on “too hot” visual processing. The winner? During the illustrated picture book - audio with illustrations - brain network connection and cooperation was far more balanced, or “just right.” He described these differences as a “Goldilocks Effect,” where the child listens to words and sees pictures, yet their imagination brings the story to life.



Consider Print Book Reading Versus Digital Book Reading

Literacy skills expert Naomi Baron, PhD, Professor Emerita of Linguistics at American University in Washington, notes there is mixed research on the effectiveness of print versus digital reading with young children, though most evidence suggests that for toddlers (as opposed to preschoolers), print seems to be more effective. However, some studies do show that while preschoolers may have a similar overall memory of a story read in print versus digital, print reading seems to be better for recalling more detailed parts of the story like plot points and structure.



Tips to Support Social Development

Infancy and early childhood are a time for development of key social skills and abilities that lay a foundation for later social and emotional health, as well as brain development. Key early skills needed for optimal social development include conversational turn-taking, joint attention with caregivers (paying attention to the same thing at the same time), and emotion and behavior regulation. Below are tips to support optimal social development in your infant or young child.

- ▶ **Prioritize Warm and Responsive Caregiver Interaction Time**
- ▶ **Lay A Foundation For Future Social Health With Loving Attention And Sensitivity To Infant Needs**
- ▶ **Make Video Chatting Responsive, Short, And Frequent**
- ▶ **Spend Time With Your Child Paying Attention To Something At The Same Time**
- ▶ **Limit Screen Use To Joint (Together) Use With Very Young Children**
- ▶ **Reduce “Secondhand” Screen Time Like Background TV**
- ▶ **Understand The Impacts To Young Children Of Your Own Media Use**
- ▶ **Make Time For Undivided Attention**

Prioritize Warm and Responsive Caregiver Interaction Time

There is expert consensus that infant interactions with caregivers that involve caregiver sensitivity, warmth, and responsiveness promote emotional socialization and emotion regulation, says Georgene Troseth, PhD, Professor of Psychology and Human Development, Peabody College, Vanderbilt University. “Children learn these interactions with caregivers who model appropriate behavior. [These caregivers] show how to show love, engage in back and forth sharing with that child, have conversation, and set limits on the child’s behavior. That’s the context in which early social development occurs.”

There are really critical social and emotional developmental tasks that children need to achieve in the first few years of life that require in-person live interactions with human caregivers, says Joan Luby, MD, Samuel and Mae S. Ludwig Professor of Child Psychiatry, Washington University School of Medicine. Screens cannot provide the conditions for these important developmental tasks and likely even interfere with them, she notes.

Critical social/emotional “tasks” that are essential to social functioning and mental health and are best done in interactions with a caregiver include:

- Learning to identify and label emotions in themselves
- Identifying and understanding emotions in others
- Accurately perceiving emotions in others
- Learning to regulate intense emotions
- Empathy
- Turn-taking
- Listening
- Sharing
- Helping and other prosocial behaviors

(Troseth, Luby)



Children learn the interactions with caregivers who model appropriate behavior... how to show love, engage in back and forth sharing with that child, have conversation, and set limits on the child’s behavior. That’s the context in which early social development occurs.

Georgene Troseth, PhD
VANDERBILT UNIVERSITY

Lay A Foundation For Future Social Health With Loving Attention And Sensitivity To Infant Needs

The young child needs the live, nurturing, attentive caregiver to meet their basic safety, security, and survival needs, to validate their developing identity, to develop secure attachments, to promote stimulation and positive development, and to promote organization, rhythms, and regularity in their life, says Luby.

The security of the infant's attachment to their caregiver leads to important outcomes like accelerated cognitive development and healthier relationships over time, says Brandon T. McDaniel, PhD, Senior Research Scientist at the Parkview Mirro Center for Research and Innovation. "This strong bond with their caregiver is really important to them developmentally. And this bond is something where they're both going to lean on their parents for a sense of security and comfort and be able to use them as this secure base to explore their world."

The way an infant is treated in all their interactions with their caregiver begins to form the way they view relationships, such as whether they are worthy of love. Beyond developing a loving attachment, the sensitivity of caregivers to the infant lays a foundation for later relational health. How do you gauge your own "sensitivity?" Ask yourself these questions:

- Am I aware of my baby's needs?
- Am I interpreting the cues that they're giving me correctly?
- Am I responding appropriately and in a timely manner?

Make Video Chatting Responsive, Short, And Frequent

There is ample evidence that video chatting with responsive family members can count as important interaction time, say many experts. "The engagement and the connection, not the platform, are important," says Rachel Barr, PhD, Professor, Department of Psychology, Georgetown University. The key premise of early childhood development is "relationships, relationships, relationships."

The responsiveness of the adults video chatting with the infant or toddler matters, says Troseth, who along with other researchers has been exploring infant video chat interactions in the wake of the COVID pandemic. "What we're finding is that families do engage in activities that build emotional connection. The things that they're doing are things like turn-taking, blowing kisses, and smiling. Infants are babbling at their grandparents. Parents and grandparents are doing things like sharing books and toys across the screen, playing hide-and-go-seek, etc. – having all kinds of interactions, like you would in the real world. We're finding out that grandparents' sensitivity to the baby – responding right at the right moment with smiles and emotional expressions – is influencing infants' emotions. And it is building the kinds of things that you could build face to face, with a supportive caregiver."

Video chats should be kept short and frequent with young children to be most beneficial, says Barr.

Spend Time With Your Child Paying Attention To Something At The Same Time

The development of key social functions begins in infancy, with “joint attention,” which refers to the ability to reference where somebody else is looking and look to that reference point. This ability develops in infants around nine months of age, says Moriah Thomason, PhD, Barakett Associate Professor and Director of Pediatric Neuroimaging, and Vice Chair for Research, Departments of Child and Adolescent Psychiatry and Population Health at New York University School of Medicine. “Later, very young children learn turn-taking, a term that we use for conversational turns, where you take a pause and you look for a reaction from somebody else. These are fundamental, but it shows you that already the very young brain is learning how to operate within a social world.”

Engaging in “joint attention” in infancy happens “all the time” – up to hundreds of times a day – even when most parents are not even aware of it, says Dimitri Christakis, MD, MPH, Chief Science Officer of Children and Screens and Director of the Center for Child Health, Behavior and Development, Seattle Children’s Research Institute, George Adkins Professor of Pediatrics, Adjunct Professor of Psychiatry, and Adjunct Professor of Health Services, University of Washington School of Medicine. Each time an infant fixes their gaze or points at an object and a parent fixes their gaze on the same thing or names the object, it counts. “It’s not just how children learn language, it’s how they build social-emotional intelligence and how they come to appreciate a caregiver’s attention and affection. It’s how they learn to love and rely on other people.”



Limit Screen Use To Joint (Together) Use With Very Young Children

If you must use screens with very young children, intentionally engaging in the media content together, interactively, should be prioritized, say several experts. This means not just watching TV or videos together but actively engaging and talking about the content with the child, says Lisa Linder, PhD, Licensed Clinical Psychologist Professor of Child and Family Development, San Diego State University. Additionally, holding or touching the children, providing extra tactile information and communication, is optimal, says Gilbert Foley, EdD, Consulting Clinical Psychologist at the New York Center for Child Development and Clinical Co- Director at the NYC Early Childhood Mental Health Training and Technical Assistance Center.

“Spend as much time as you can asking for comprehension with your kids – ‘What’s happening there? What are they doing? Why is he laughing like that? That seems mean, right?’” suggests Linder. “Get them to explain and connect with you around what they’re doing, and when they don’t understand, explain everything that you can. Kids are sponges. Help them connect what they’re seeing to real life and to their own experiences. The more that you do this, the more that they’ll begin to see the digital world as a shared world.”

Reduce “Secondhand” Screen Time Like Background TV



Even secondhand screen time, like a TV on in the background, can impact infants and toddlers, with research showing that young children show less focused attention during toy play and lower-quality parent-child interactions, says Heather Kirkorian, PhD, Laura M. Secord Chair in Early Childhood Development School of Human Ecology, University of Wisconsin-Madison. “It’s a distracting presence that’s not necessarily obvious. It has these subtle effects that disrupt our attention in ways that can accumulate over time.”

Understand The Impacts To Young Children Of Your Own Media Use

Parent use of media and devices in front of infants and children, even if within the context of “normal” and everyday use, can lead to interruptions and distractions that affect the responsiveness of the parent to child cues and thus the relational health of the child, says McDaniel. McDaniel coined a term “technoference” for when parent media use interferes with face-to-face interactions and is a leading researcher on parent technoference and its impacts on children.

Parental technoference can occur intentionally (e.g., feeling overwhelmed by parenting and turning to phone use) or unintentionally (e.g., checking one’s phone while near one’s child). Regardless of the reason or intentions, the device use can cause distraction and interruptions in the moment that may make a parent delayed in responding to a baby’s cues, or more likely to misinterpret the meaning of their baby’s cues. While parent distraction is not new, “the difference is that we now have mini ‘supercomputers’ in our pockets that have been designed to capture our attention and keep us absorbed in that use,” says McDaniel.



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Brandon T. McDaniel, PhD

PARKVIEW MIRRO CENTER FOR
RESEARCH AND INNOVATION

Make Time For Undivided Attention

The simplest and most effective way to help your infant or young child develop socially is to ensure they have regular times with their caregiver’s undivided attention, says McDaniel. “Create intentional times of connection with your child, whether that’s going to be during the work day at specific times or whether that will be afterward at other times of the day, just have times with some undivided attention.”



Tips for Supporting Behavioral Development

Behavioral development in the early childhood years is a gradual process of learning and adapting behaviors with increasing complexity, balancing the child's internal experiences with the world around them. Learning to recognize one's own emotions, developing the tools to self-regulate emotions and behavior, and building resilience for difficult moments are key behavioral development tasks in early childhood that can be affected by overuse of screens. Increasingly, successfully managing transition time from screen time to non-screen time is part of this development. Below are tips to support optimal behavioral development in your infant or young child around screen use.

- ▶ **Spend 1:1 Time Co-Regulating**
- ▶ **Understand Your Tech Use Can Affect Your Child's Behavior**
- ▶ **Allow Kids To Make Mistakes**
- ▶ **Teach How To Recognize And Cope With Emotions For Behavioral Development**
- ▶ **Avoid Using Devices As Emotional Regulators**
- ▶ **Understand Children Learn Good And Bad Behaviors From Media**
- ▶ **Allow Kids To Engage In Developmentally Appropriate Risk-Taking And Exploration**
- ▶ **Reward Your Child's Healthy Behavior**
- ▶ **Let Kids Find Their Way Out Of Boredom**
- ▶ **Encourage Lots Of Interactive Play**

Spend 1:1 Time Co-Regulating

While an important social-emotional task in the first five years is the development of independent self-regulation skills, “they can’t do it all by themselves,” says Gilbert Foley, EdD, Consulting Clinical Psychologist at the New York Center for Child Development and Clinical Co-Director at the NYC Early Childhood Mental Health Training and Technical Assistance Center. “It’s so important as parents to serve as a co-regulator for your child. Early on, they need you to help with structure, with touch, and then eventually with language.”

If children have insufficient time interacting with caring individuals, they might not have enough experiences that will allow them to develop the independent self-regulation skills they need, says Georgene Troseth, PhD, Professor of Psychology and Human Development, Peabody College, Vanderbilt University.

Understand Your Tech Use Can Affect Your Child’s Behavior

Recent studies have shown that as parents engage in more of their own device use and technoference, the child might react with more behavior problems over time, says Brandon T. McDaniel, PhD, Senior Research Scientist at the Parkview Mirro Center for Research and Innovation. Even infants who experience technoference from parents may display negative emotional reactions and negative affect like crying or increased bids for the parent’s attention, he notes.

Allow Kids To Make Mistakes

Resilience is an important component of the ability to self-regulate, and learning how to persevere or learn from mistakes is an important step. Children should be able to make mistakes in their play, because that’s how they learn and build their resilience, says Louise Dorrat, MEd, BTeach, ADip. SocSc., Early Childhood Consultant.



It’s so important as parents to serve as a co-regulator for your child. Early on, they need you to help with structure, with touch, and then eventually with language.”

Gilbert Foley, EdD

NEW YORK CENTER FOR CHILD DEVELOPMENT

Teach How To Recognize And Cope With Emotions For Behavioral Development

Emotion and behavior regulation are important first tasks of early childhood from infancy to preschool. This regulation manifests as a measure of being able to control one's own emotions or behavior and parents and caregivers should work from the beginning of life to help young children develop these skills.

For toddlers and preschoolers ages two and up, Sarah Coyne, PhD, Professor, Human Development, School of Family Life at Brigham Young University recommends using strategies like John Gottman's Emotion Coaching, which caregivers can use to help children label the emotion they are feeling, validate the feeling, and then work to figure out what tools can be used to deal with that emotion. Developing these skills in early childhood pays dividends later on in childhood behavior.

Avoid Using Devices As Emotional Regulators

Parents are increasingly using screens as an external emotion regulator, as in many instances the use of a tablet or other device seems to help calm a child down in the moment. Beware the lure of using devices for emotional regulation, say many experts. "What a screen essentially does is it provides a distraction from an emotional experience. And what children instead need to do is they need to learn how to process and regulate an emotion, which is not something a screen is going to provide," says Joan Luby, MD, Samuel and Mae S. Ludwig Professor of Child Psychiatry, Washington University School of Medicine. "That's something that requires another human being. If the child doesn't get exposure to that skill, they will be very impaired in their ability to actually experience and process emotions. And they will essentially be emotionally delayed and at risk for many other poor emotional outcomes."



Understand Children Learn Good And Bad Behaviors From Media

Children can learn behaviors from the content they see, says Kate Blocker, Director of Research and Programs for Children and Screens. Some media teach behaviors that are positive and pro-social, particularly with programs thoughtfully created to be such, but others can teach antisocial behaviors, as well.

Landmark shows based on child developmental principles like Sesame Street or the Electric Company, as well as some newer content, have been shown by research to promote learning and prosocial behavior, says Dimitri Christakis, MD, MPH, Chief Science Officer of Children and Screens and George Adkins Professor of Pediatrics, Adjunct Professor of Psychiatry, and Adjunct Professor of Health Services, University of Washington School of Medicine.

Allow Kids To Engage In Developmentally Appropriate Risk-Taking And Exploration

Developmentally appropriate risk-taking is very important, says Foley. Yet children often hear “It’s not safe!” in preschool years, instead of giving the child an opportunity to explore or take a small risk, such as getting on a chair and retrieving something and feeling a sense of mastery, he notes. “The operative word is developmentally appropriate risk-taking. We’ve become so conscious of liability, but I think we’re depriving children of naturalistic opportunities to learn. If we didn’t have developmentally appropriate risk-taking, we probably would never leave the nest.”



Reward Your Child’s Healthy Behavior

Children are highly attuned to approval and rewards from caregivers. Make sure to reward healthy behavior and not inadvertently reward behavior you don’t wish to see again, says Heather Kirkorian, PhD, Laura M. Second Chair in Early Childhood Development School of Human Ecology, University of Wisconsin-Madison.

Not holding boundaries or giving a child extra attention as a result of negative behavior, such as a tantrum, are common ways that parents accidentally reward bad behavior, says Kate Blocker, Director of Research and Programs at Children and Screens. “It can be challenging to avoid these pitfalls, especially

in the heat of the moment, but establishing a plan for reinforcing positive behavior and ignoring or redirecting negative behavior can help. Consistency is key.”

How you reward your child will be unique to their likes and how your family operates, but experts agree: don’t use screens themselves as either rewards or punishments. Of course, if your child is displaying unhealthy screen use, you may decide you need to reduce screen time, but it should not be framed as a punishment for bad behavior, says Blocker.

Make sure to reward healthy behavior and not inadvertently reward behavior you don’t wish to see again.

Heather Kirkorian, PhD

SCHOOL OF HUMAN ECOLOGY UNIVERSITY OF WISCONSIN-MADISON

Let Kids Find Their Way Out Of Boredom

Being bored is an inherently uncomfortable experience that parents may feel they need to solve for their children whenever they seem to be in a state of boredom. However, many experts agree that allowing kids to be bored can allow them to learn how to generate their own way out of a dissatisfactory state. “Let them find a way to engage that default mode network [areas of the brain that activate during resting or non-focused states]; let them engage in mind wandering. Even for infants, instead of trying to occupy them every single moment, let them be bored, let them explore,” says Darya Zabelina, PhD, Associate Professor of Psychology at the University of Arkansas.

Most parents are familiar with that experience of a child coming to you and saying, “I’m bored,” says James Danckert, Professor of Cognitive Neuroscience, University of Waterloo. “What they’re really saying is, ‘I’m bored and I want you to fix it for me.’ And so as the dutiful parent, we trot out options. ‘Go read a book. Go play with your Lego. Go outside. Go play basketball. Do something with your brother.’ At every turn point, the child says, ‘Nah, I don’t want to do that. Nah, I don’t want to do that.’ What they’re telling us is they’ve seen the options, too, and they just don’t think those options are going to work right now. And that’s the essential conundrum of boredom. Wanting, but failing, to engage with the world.”

“Boredom for children is a gift because it creates opportunities to find activities that really answer something in you as an individual,” says Rebecca Parlakian, MEd, Senior Director of Programs, Zero to Three. “Children have their own preferences - they’ll find something.”

Being able to find a way out of this state of boredom has been shown to have a relationship with skills of behavioral self-control that relate to goal initiation, says Danckert. Children who have no ability to independently leave the state of boredom may end up becoming “boredom prone” and have other difficulties with goal initiation and launching into independent activity in general.

Encourage Lots Of Interactive Play

Interactive real-world play is important to child development for many reasons. Behaviorally, play teaches self-regulation skills because of its unpredictable nature, says Foley. “Children really need to have experience with real objects in the real world and real people. It really teaches regulation because you don’t know what’s going to happen - you start, you stop, you go fast, you go slow, you change loudness - all of that modulation and grading gives practice in regulation.” Real world play time is decreasing among today’s young children, partially because of increased time on screens, he says .



“We really want to build skills so children can manage screens. We want to give them tools so they eventually can manage all of this independently. And this means engaging in interactive play, allowing them to engage in independent, interactive play through games and all kinds of things. Build on what children love doing that draws them in - music, arts, sports, playing outside, all of those things,” says Stephanie Jones, PhD, Gerald S. Lesser Professor of Child Development and Education, Harvard Graduate School of Education.



Tips for Choosing and Using Quality Media Content For Preschoolers

Children and Screens and many other experts recommend no screen time for children under two years of age beyond video chatting. As toddlers develop past the age of 18 months to two years old, research shows some limited use of high quality media content can be beneficial for child learning and development. See below for important considerations in selecting and using media with your preschool-age child.

- ▶ **Consider Age And Developmental Appropriateness Of Content To Your Specific Child**
- ▶ **Evaluate App Quality For Preschoolers Using These Criteria**
- ▶ **Choose High Quality Learning Content Integrated Into Narratives**
- ▶ **Shortcut: Choose Content That Isn't Profit-Oriented**
- ▶ **Beware Self-Described 'Educational' Content For Young Children**
- ▶ **Engaging Content Is Not Necessarily Quality Content**
- ▶ **Find And Discuss Content That Promotes Socioemotional Development**
- ▶ **Beware Of Advertising Even In Quality Content**
- ▶ **Make Sure Content Is Age-Appropriate And Nonviolent**
- ▶ **Reading Ebooks? Skip The Ones With Extra Features**
- ▶ **Provide Interactive Reading Experiences Over Passive Screen-Based Storytelling**
- ▶ **Whichever Content You Choose - Talk And Ask Questions Afterwards**
- ▶ **Viewing Content Repetitively Helps Learning**
- ▶ **Beware The Algorithm Autoplay**



Consider Age And Developmental Appropriateness Of Content To Your Specific Child

“This is a major principle in pediatrics: children are not small grown-ups. Their abilities and capacities evolve with age and experience. There are a lot of things that we as humans have decided are important to wait to do: for example, driving a car, drinking alcohol, getting married. These are all framed around the idea of ‘Are we ready?’” says John Hutton, MD, MS, FAAP, Associate Professor in the Division of General and Community Pediatrics at the University of Texas Southwestern Medical Center. This concept of readiness should always be kept in mind when looking at any type of digital media that a parent is considering letting a child use, he says.

The exact age when a young child will be ready for the introduction of media will vary, but experts encourage parents to use their own intimate knowledge of their individual child to assess for signs of readiness. There’s a lot of data and evidence that the most important thing to consider is the nature of the specific child who will be experiencing certain content, says Ellen Wartella, PhD, Sheik Hamad bin Kalifa Al-thani Professor of Communication Studies, Professor of Psychology, Professor of Human Development and Social Policy, Professor of Medical Social Sciences, Director of the Center on Media and Human Development, Northwestern University.

One indicator of readiness in a preschooler is a demonstrated ability to self-regulate and cope with life’s “tiny dramas,” says Jenny Radesky, MD, Associate Professor of Pediatrics, Division Director of Developmental Behavioral Pediatrics, University of Michigan Medical School and Co-Medical Director of the American Academy of Pediatrics’ Center of Excellence on Social Media and Youth Mental Health. Overcoming a “tiny drama,” a moment when a child encounters difficulty or upset, with an ability to self-calm, find a solution or repair, shows a child’s self-regulation skills are developing. Parents should use their own autonomy and intentionality to assess a child’s readiness for a device, not marketing pressure, notes Radesky.



Children are not small grown-ups. Their abilities and capacities evolve with age and experience.

John Hutton, MD, MS, FAAP
UNIVERSITY OF TEXAS
SOUTHWESTERN MEDICAL CENTER

Evaluate App Quality For Preschoolers Using These Criteria

If allowing preschool-aged children access to the world of digital apps, make sure to choose higher-quality ones instead of ones that just look fun or engaging. Also note that “just because an app costs money doesn’t mean it’s a better app than a free one,” says Roberta Golinkoff, PhD, Unidel H. Rodney Sharp Chair and Professor, School of Education, University of Delaware.

How do you evaluate a “good quality” app? Look for these qualities, says Golinkoff and Kathy Hirsh-Pasek, PhD, Lefkowitz Faculty Fellow in Psychology at Temple University and Senior Fellow at the Brookings Institution:

- **Active** – not passive
- **Engaging** – not distracting
- **Meaningful to the child** – not disjointing and relevant to the child’s life and level of understanding
- **Socially interactive** – encourages engagement with other people
- **Iterative** – changes each time a child interacts with it beyond just getting a grade or a hand clapping
- **Joyful to experience** – is pleasurable for the child



Choose High Quality Learning Content Integrated Into Narratives

It can be hard to know what experts mean when recommending that parents only let young children use “high quality” digital media. Rebecca Dore, PhD, Director of Research at the Crane Center for Early Childhood Research and Policy, The Ohio State University suggests that the best quality educational content introduces children to new concepts and embeds information in meaningful narrative structures. “Children learn more from media when the educational content is integral to the narrative. For example, in one study, my colleagues and I collaborated with an educational app development company to create a space adventure game to teach new vocabulary. This game introduces new vocabulary words in the context of the story, and then the child has to answer questions using their knowledge of the words to move the plot line forward. And indeed, we found that children did learn new vocabulary from this game, both in an immediate test in the lab context, and after playing the game over a few weeks in their classroom.”

Higher quality narrative content also will contain examples of sentences and more complex language that may be helpful to children developing these language skills, says Dore.

Shortcut: Choose Content That Isn't Profit-Oriented



Busy parents often feel overwhelmed in trying to determine content quality, says Jenny Radesky, MD, Associate Professor of Pediatrics, Division Director of Developmental Behavioral Pediatrics, University of Michigan Medical School and Co-Medical Director of the American Academy of Pediatrics' Center of Excellence on Social Media and Youth Mental Health. While it's still recommended to check content closely for young children, the "quick answer" is to go with content produced by a nonprofit like PBS Kids or Sesame Street, which has been shown in many studies to not be associated with developmental delays and in fact can promote learning. "If your child's going to watch media in their early years, go with these nonprofits. They're not trying to make money off your kids' eyeballs," she says.

If there's lots of ads or any purchase pressure in an app for children, this is a red flag of a media that is prioritizing monetization rather than well-being or learning, says Radesky.

Much ad-free media now requires some level of purchase, unfortunately. "If you can afford to do it, ad-free content is helpful because often the advertisements just distract from the lesson. They can disrupt learning and have other kinds of effects that take away from the potential benefit," notes Heather Kirkorian, PhD, Laura M. Secord Chair in Early Childhood Development School of Human Ecology, University of Wisconsin-Madison.

Beware Self-Described 'Educational' Content For Young Children

It's a "primordial" and very healthy desire and even instinct of parents to try to optimize their children's cognitive, social, emotional, and financial development, says Dimitri Christakis, MD, MPH, Chief Science Officer of Children and Screens and George Adkins Professor of Pediatrics, Adjunct Professor of Psychiatry, and Adjunct Professor of Health Services, University of Washington School of Medicine. As a result, parents are prone and even vulnerable to products and services that promise to help in that regard, he says.

Any content creator or company can self-label their product or media as 'educational' with little oversight as to whether those claims are valid. "What is labeled as educational may not always be educational. Don't take it at face value," says Sarah Kucker, PhD, Assistant Professor of Psychology, Southern Methodist University. "If you look at YouTube and it says 'this is educational,' take it a step further and actually look at what the elements are" that might make it educational – or not, she suggests.

Consider that parents can look at labels for foods to determine their nutrient profile and health for young children in a standardized way that are subject to regulation, but that they can't for children's apps and programs that make claims of educational benefit, warns Christakis. "We just give industry a pass... We've developed metrics around kindergarten readiness, around numeracy, around literacy. We use those tools all the time in other arenas. We just don't apply them for apps."

When in doubt, cross-check a media choice with a trusted reviewer, such as Common Sense Media, who can provide reviews and ratings for many popular children's shows and apps, suggests Kucker.

Engaging Content Is Not Necessarily Quality Content

Shows or apps aimed at children may be flashy and fun, but when making choices between different media options, it is helpful to think about whether those engaging elements actually help focus children's attention on the educational content, says Dore.

Think about whether the child is excited about engaging with media simply because it's novel or attention-getting or because it's actually providing them real learning opportunities that help with information retention, says Kucker. Is the child meaningfully engaged? Are they thinking about how or why they are interacting with it rather than just responding to cues? Just because a child is excited about something doesn't mean it's helping them.

Assess educational content for uses of interactivity that support the lesson. "If the content just seems like a lot of salient stuff, lots of movement and sound effects, things happening really quickly, then it might just be capturing and holding their attention without really engaging their imagination or their learning," says Kirkorian. Ask yourself - does it have a clear educational goal? Is it free of really distracting disruptive information and does it use interactivity in ways that support the lesson, she suggests.

Find And Discuss Content That Promotes Socioemotional Development

Some content is designed to promote socioemotional development, such as Daniel Tiger, says Georgene Troseth, PhD, Professor of Psychology and Human Development, Peabody College, Vanderbilt University. A few recent studies showed toddlers and young preschoolers exhibited more empathy and emotion recognition after watching the program for two weeks, particularly if parents discussed the show with the children afterwards, she notes. "It matters whether parents are involved in joint engagement, or active mediation, of their children's screen use compared to children using it by themselves."

Preschoolers who played the Daniel Tiger app for a month, or played the app and watched the program, then used Daniel's emotion regulation strategies in the real world, exhibited more emotion knowledge compared to a control group, says Troseth.

Beware Of Advertising Even In Quality Content

Some media content may tick the right boxes for quality assessment but still may be full of advertising and marketing. Proceed with caution in allowing small children to view this content - you will likely need to cope with an aftermath of a child wanting the products that have been sold to them in the meantime, says Susan Linn, EdD, Lecturer in Psychiatry, Harvard Medical School, Research Associate, Boston Children's Hospital.

"If you can afford to do it, ad-free content is helpful because often the advertisements just distract from the lesson, they can disrupt learning and have other kinds of effects that take away from the potential benefit," says Kirkorian.

Make Sure Content Is Age-Appropriate And Nonviolent

Young children cannot regulate their response to the content they view as well as older children and adults, says Kim West, LCSW-C, child and family therapist, sleep coach trainer, and author. “They can’t watch an action movie with violence and just shut it off and walk away and be able to go to sleep quickly. So be careful of what they’re watching.”

Early exposure to content with violence, aggression, or lack of empathic behavior is perhaps the most concerning when it comes to content, says Joan Luby, MD, Samuel and Mae S. Ludwig Professor of Child Psychiatry, Washington University School of Medicine.



Reading Ebooks? Skip The Ones With Extra Features

The research is clear on ebooks, says Kirkorian. Studies show that very simple ebooks that look a lot like print books but on a screen are similar to print books in beneficial effects with child learning, but that ebooks with lots of games, animations, and other “bells and whistles” tend to distract children from the story. “Look for content that focuses on a lesson or a story without a lot of distracting things,” she advises.

Literacy skills expert Naomi Baron, PhD, Professor Emerita of Linguistics at American University agrees. “Many of the e-books and apps that are out there are full of bells and whistles that have nothing to do with the story, and those kinds of electronic books don’t tend to foster comprehension of what is being read.”



Many of the e-books and apps that are out there are full of bells and whistles that have nothing to do with the story, and those kinds of electronic books don’t tend to foster comprehension of what is being read.

Naomi Baron, PhD
AMERICAN UNIVERSITY



Passive screen viewing doesn't engage attention as much as interactive storytelling

Tzipi Horowitz-Kraus

TECHNION-ISRAEL INSTITUTE OF TECHNOLOGY

KENNEDY KRIEGER INSTITUTE

Provide Interactive Reading Experiences Over Passive Screen-Based Storytelling



Children listening to stories are engaging their attention systems. However, “passive screen viewing doesn’t engage attention as much as interactive storytelling,” says Tzipi Horowitz-Kraus, Associate Professor, Faculty of Education in Science and Technology, Faculty of Biomedical Engineering, Technion-Israel Institute of Technology; Associate Professor, Neuropsychology Department, Kennedy Krieger Institute.

Horowitz-Kraus cites recent research demonstrating that the inhibitory part of executive function (the ability to control/inhibit responses), as well as some markers related to visual attention (the ability to attend the visual system to relevant stimuli), were extremely and significantly improved in children following dialogic (interactive) reading training. The same research indicated that children listening to stories via a screen showed no effect or improvement on these aspects of the attention network.

Other recent research using functional MRI looked at measuring children’s brain function during an activity. Researchers tested two conditions: a person telling a story to a child via a screen with pages and audio recording and another condition where the children were watching a movie. Both conditions were matched for difficulty of content and illustration level. “We were very surprised to see that when children were watching basically something that was similar to a book reading, pictures with audio, they engaged their attention system and their visual system much more, as opposed to a condition of watching a video,” says Horowitz-Kraus.

Even though watching a video is more triggering and stimulating to the visual system, it is nevertheless less engaging as found by the functional MRI. Horowitz-Kraus posits that the nature of video watching keeps the young brain passive as opposed to the imagination and attention allocation demanded by listening to a story.

Whichever Content You Choose - Talk And Ask Questions Afterwards

What matters even more than whether content is on screens versus print is what conversations the caregiver has with the young child while reading the book together, says Baron. “In the reading community, people talk about the importance of ‘dialogic reading,’ which basically means when you’re reading to younger kids, and that’s toddlers and preschoolers, and probably primary school kids, it’s important not just to read the words on the page, but to talk about what’s happening, to relate what’s happening to experiences that your child has.”

In these conversations, emphasize questions about what’s happening in the book or show and how it might relate to other happenings in the child’s life, she suggests. Try not to ask questions that only have a yes/no answer but more “who/what/where/why/when” questions that invite more thinking and engagement.

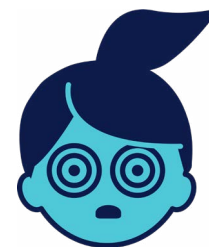
Viewing Content Repetitively Helps Learning

While it may seem tedious to parents when children watch the same content over and over again, children learn better from seeing the same media content repeatedly. Dore cites a study that children’s comprehension and learning from a Blue’s Clues episode kept improving when they watched the same episode every day for a week. “Allowing children to engage with the same content multiple times can actually enhance their understanding and learning,” she says.

Educational videos lend themselves well to the repetition that can enhance learning in young children, says Kirkorian. “You can watch it over and over again as opposed to a real-life demonstration. If the goal is to help kids learn something from a video that you couldn’t teach them with something real, show them something they would never experience in their real lives, such as animals that don’t live in their environment, for example.”

Beware The Algorithm Autoplay

Exercise caution and oversight even after selecting the most developmentally-appropriate content for your child, as the algorithms of the platform hosting the content may start autoplaying completely different - and potentially harmful - content afterwards, cautions Luby. “The thing that worries me most is that a lot of young children, even by engaging with what parents think are developmentally appropriate platforms like Disney, somehow end up through algorithms where they’re actually seeing inappropriate content or violent content.”





Tips for Parenting Around Media Use in Early Childhood - Limits, Modeling, Routines

- ▶ Resist Using Media And Digital Devices For Emotional Regulation/Calming
- ▶ Make Media Times And Places Predictable And Limited
- ▶ Keep Screens Out Of Bedrooms And Bedtime Routines
- ▶ Be Emotionally Available And Connected At Bedtime
- ▶ Ease Transitions From Screen Time To Non-Screen Time
- ▶ Allow For Meaningful Stopping Points Over Time-Only Limits
- ▶ Give Kids Attractive Alternatives To Screens
- ▶ Fit Screen Time Into A Balanced And Healthy Day
- ▶ Be Consistent In Routines And Relationships
- ▶ Allow Yourself A Parenting Break
- ▶ Co-View And Interactively Engage With Young Children And Their Media Content
- ▶ Connect Media Content To The Child's Real World Experiences
- ▶ Pay Attention To Content Quality For Young Children
- ▶ Model How To Regulate Emotions
- ▶ Monitor For Red Flags Of Screen Use Impacts On Behavior And Health
- ▶ Limit And Explain Parent/Caregiver Device Use In Front Of Infants And Children
- ▶ Use Picture Books In Your Daily Routine
- ▶ Face Your Own Struggles With Your Media Use - And Model Finding Solutions
- ▶ Parent Mindfully vvvAround Young Children And AI

Resist Using Media And Digital Devices For Emotional Regulation/Calming

Recent research indicates that the frequent use of mobile devices as a calming mechanism for young children may displace their opportunities for learning emotion-regulation strategies over time. In doing so, “the child doesn’t have to struggle and develop their emotion regulation and their behavior regulation,” says Georgene Troseth, PhD, Professor of Psychology and Human Development, Peabody College, Vanderbilt University. It can be very tempting in the moment to use a device to help calm a child down, but this shortcuts the child learning how to do it themselves and can have behavioral implications in the long run.

Jenny Radesky, MD, Associate Professor of Pediatrics, Division Director of Developmental Behavioral Pediatrics, University of Michigan Medical School and Co-Medical Director of the American Academy of Pediatrics’ Center of Excellence on Social Media and Youth Mental Health and others conducted a longitudinal study funded by the NIH that followed three to five year-olds over a period of time with check-in points. At each time point, parents were asked “How likely are you to use media like a mobile device to calm your child down when they’re upset?” The results indicated that the preschool-age kids who were more emotionally reactive were given media more to calm down.

Yet the study also found the more media the children were given to calm down, the worse emotional reactivity they had over time, she says. “This was a hint to us that [using media to calm children down] may work in the moment to just make that affect go away. When you’re a parent and your child is just screaming at you and turning red in the face, you can understand how reinforcing it must be to just quell that immediately with a YouTube video or a bubble-popping app. But you’re not addressing the underlying emotion that led to that behavioral reaction,” she says.



When you’re a parent and your child is just screaming at you and turning red in the face, you can understand how reinforcing it must be to just quell that immediately with a YouTube video or a bubble-popping app. But you’re not addressing the underlying emotion that led to that behavioral reaction.

Jenny Radesky, MD

UNIVERSITY OF MICHIGAN MEDICAL SCHOOL
AMERICAN ACADEMY OF PEDIATRICS’ CENTER OF EXCELLENCE
ON SOCIAL MEDIA AND YOUTH MENTAL HEALTH



The research is clear - media devices should be kept out of children's bedrooms to the extent possible.

Heather Kirkorian, PhD

SCHOOL OF HUMAN ECOLOGY UNIVERSITY OF WISCONSIN-MADISON

Make Media Times And Places Predictable And Limited

Experts agree that setting up screen-free times and places in the home help create and manage young children's expectations around device use.

Making media use times very predictable is an effective way to deal with young children who may be constantly begging for media time, says Lisa Linder, PhD, Licensed Clinical Psychologist Professor of Child and Family Development, San Diego State University. "Children aren't able at this age to effectively manage or gauge time, and they do really well with clear and consistent boundaries." Linder suggests planning "show time" or "media time" that is consistently at the same time of day for the same amount of time.

Common places to make "zero screens" zones include family mealtimes and other times that are ripe for more personal connection time. "My personal favorite times of the day for no screens to be present include: at the dinner table, in the car while riding around town, and before bed, because those are your optimal times for conversation," says Angie Neal, MS, Speech Language Pathologist Policy Advisor for Speech-Language Pathology and Early Literacy at the South Carolina Department of Education.

Keep Screens Out Of Bedrooms And Bedtime Routines

The research is clear - media devices should be kept out of children's bedrooms to the extent possible, says Heather Kirkorian, PhD, Laura M. Secord Chair in Early Childhood Development, School of Human Ecology, University of Wisconsin-Madison.

"If your child has a TV in their bedroom, I would absolutely recommend you to remove it... This also means tablets," says Kim West, LCSW-C, child and family therapist, sleep coach trainer, and author. "If you're willing, remove the TV from your own bedroom, then share with your child that you want them to learn how to put themselves to sleep without the TV and that you're going to learn along with them."

Quality sleep is critical for immune health, mental health, and children's learning, says West. Some of the effects of screen time at bedtime can include:

- Delayed bedtimes
- Taking longer to get to sleep - including increased battles between parent and child at bedtime
- Reduced sleep quality
- Less total sleep time

Be Emotionally Available And Connected At Bedtime

Research has shown that parents' emotional availability at bedtime promotes feelings of safety and security, and as a result better-regulated sleep, says West. What does being emotionally available mean? In addition to not bringing your phone or tablet into a child's room, it means really giving your child focused attention for 20 minutes or so, she says. This can include reading a book, playing a puzzle or another quiet, soothing activity. Engage with the characters and help the child connect it to real life in conversation. Most of all, make sure you have as much loving touch as possible to soothe and comfort children.



Ease Transitions From Screen Time To Non-Screen Time

Most parents tend to abruptly end screen time for children by saying "OK time to be done" or "Turn off your screen now - stop," says Sarah Coyne, PhD, Professor, Human Development, School of Family Life, Brigham Young University. Sudden stops like these often result in pushback, either through tantrums or arguing and pleading for more screen time.

Like any other transition with young children, screen time to offscreen time transitions benefit from a series of reminders and dialogue preparing them for the transition. In some families this can include setting a time and sticking to it. "What works effectively is to give them a, 'Hey, we're going to finish in about ten minutes. I'd love for you to finish up your game. How long do you have in your episode? Let's finish that,'" says Coyne.

Always give transitional warnings when the time is almost up instead of suddenly shutting it down, says Linder. When giving transitional warnings, make eye contact and "plug in" to the child so that you can help manage their emotional response to the end of media time. Linder provides this example of transitional preparation with follow-through: "It's going to be 5 more minutes. Okay? More media, and then we're going to go to dinner. Okay, Five more minutes. I don't want any yelling or screaming or we're not going to get media tomorrow. Five more minutes." When the five minutes are up, you calmly and consistently follow through on the time you promised to end the media.

Allow For Meaningful Stopping Points Over Time-Only Limits

Having basic screen time limits is good, but when stopping media time, choose meaningful ending points to make these transitions more successful, says Kirkorian. Meaningful ending points include the end of an episode or once an achievement is reached in an app or digital game, she notes. "Having that meaningful transition point is more likely to result in a smooth transition than just cutting things off at a certain time point."

Give Kids Attractive Alternatives To Screens

Make sure children are given interesting and attractive activity options, especially at transition points away from screens, says Kirkorian, to make transitioning away from the constant stimulation more successful. “Just telling kids to turn the TV off, or take the tablet away without giving them some cool other options to do, that’s going to be less successful than saying ‘Now would you like to do this great thing or that great thing?’”



Parents inevitably need to use their own screens during the day for various adult purposes. During these times, make sure that a child has appropriate toys or other interactive play materials set up so that the infant or toddler is better able to manage having your focus somewhere else, says Brandon T. McDaniel, PhD, Senior Research Scientist at the Parkview Mirro Center for Research and Innovation.

Fit Screen Time Into A Balanced And Healthy Day

Young children can develop dependencies on screens, and those dependencies only deepen with time, says Dimitri Christakis, MD, MPH, Chief Science Officer of Children and Screens and George Adkins Professor of Pediatrics, Adjunct Professor of Psychiatry, and Adjunct Professor of Health Services, University of Washington School of Medicine. Much as we instill a healthy diet around food choices, the same should be done for media choices and media usage, he notes. Kirkorian agrees – much as a healthy diet has a balance of different types of foods that you may want more or less of on the plate, we can think of a child’s day the same way, she says. Screen time for children older than two fits in along

with important screen-free times like sleep, social time, and physical activity.

“Make sure that media is an addition to a well-rounded life instead of the primary focus,” says Rebecca Dore, PhD, Director of Research at the Crane Center for Early Childhood Research and Policy, The Ohio State University. “For language development, this means ensuring that children have opportunities to engage in meaningful social interactions and hear rich language in their environment. Foster a balanced environment that combines interactive play, social engagement and thoughtful media use.”



Make sure that media is an addition to a well-rounded life instead of the primary focus.

Rebecca Dore, PhD

THE OHIO STATE UNIVERSITY

Be Consistent In Routines And Relationships

Infants and young children thrive with consistent routines. “If kids know what to expect in the day, they know when screen time is allowed, where screen time is allowed, and when and where it’s not - and it’s consistent and predictable, that’s one of your best tools that you have,” says Kirkorian.

“Create a screen use schedule. Habits are formed during the preschool years, so this is a great time to start those rituals and routines and habits. Routines help us all feel calmer and more reassured,” notes West. West notes research that suggests a one-hour maximum of screen time for children until they’re 10 years of age.

Consistency in relationships, as well as habits and routines, matters immensely as well, says Joan Luby, MD, Samuel and Mae S. Ludwig Professor of Child Psychiatry, Washington University School of Medicine. “Children need at least one nurturing and supportive, reliable caregiver. And they need consistency in the relationship with that caregiver. That’s perhaps the most important.”



Reduce Media In The “Background”

The research is pretty clear that background TV and videos can be harmful for infants and young children, says Kirkorian. It may seem that no one is paying attention to it, but it is having an effect. Though it’s near impossible to fully cut out background TV, she urges awareness and carving out some specific times of day that do not have any screens on in the household.



Consistency in relationships, as well as habits and routines, matters immensely.”

Joan Luby, MD

WASHINGTON UNIVERSITY SCHOOL OF MEDICINE

Allow Yourself A Parenting Break

“I encourage parents to forgive themselves and take a break every day. I genuinely believe we become better parents when we have a break once in a while,” says Kirkorian. “For older preschoolers that might involve a little bit of screen time. As long as that’s a small slice of the pie throughout the day, it’s okay to take a break - especially if it’s high quality educational content for young kids.” After the break is over, you still have an opportunity to talk to them about what they saw and spark a conversation about what they did, what they saw, what the characters did, how they felt, and what they learned.

It’s healthy for children to develop independence from parents, and you don’t have to be available to your children 100% of the time, says Courtney Blackwell, PhD, EdM, Research Assistant Professor, Department of Medical Social Sciences, Feinberg School of Medicine, Northwestern University. It’s also important for parents to feel relevant at work and other parts of their lives.

Co-View And Interactively Engage With Young Children And Their Media Content

If you do allow screen time for your young child, maximize the benefits of media time you do allow for young children ages 2-5 years old by co-viewing their media with them, says Christakis. This is important not only for the purpose of engaging them while watching and making sure they understand the essential messaging of the whole, but “it’s equally important that you can leverage those messages when the program is over, when you can revisit the show with them and reinforce the messages, whether that’s letters, numbers, or behavior,” he says.

Research shows that co-viewing can improve the parent child relationship, and it can also facilitate and foster sociability, says Blackwell.

Create joint attention (watching/paying attention to the same thing together) and opportunities for interaction and two-way communication when co-viewing, says Gilbert Foley, EdD, Consulting Clinical Psychologist at the New York Center for Child Development and Clinical Co-Director at the NYC Early Childhood Mental Health Training and Technical Assistance Center. Hold and touch your child while doing so to create more sensory connection while doing so, he advises.

A live social partner helps children learn from media more effectively says Sarah Kucker, PhD, Assistant Professor of Psychology, Southern Methodist University. “When you’re co-using, don’t just co-view, don’t just sit next to a child, but actually engage with them.”

Connect Media Content To The Child’s Real World Experiences

Reciprocal interactive engagement around media content should focus on comprehension, as well as relating what they see to real life and the child’s own experiences, says Linder. Helpful comprehension questions can include queries about both plot, motivations, and interpretation, such as:

- What’s happening there?
- What are they doing?
- Why is he laughing like that?
- That seems mean, right?

If the child doesn’t understand what’s happening, explain everything you can in a way that relates to their own life. “The more that you do this, the more that they’ll begin to see the digital world as a shared world,” says Linder.

This interactive time around media helps make media a prompt instead of a substitute for in-person interactions, says Dore.

Pay Attention To Content Quality For Young Children

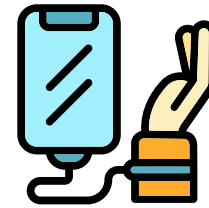
Use the content quality criteria contained in this guide to ensure that any media content a young child uses is providing educational and learning benefit instead of harm.

Model How To Regulate Emotions

Helping children develop independent emotional regulation skills is an important parental task of the early childhood years. Beyond avoiding an overreliance on tablets or media as a calming device, model for children how you calm yourself and problem solve during your own frustrating daily setbacks to help them develop these skills.

Talk out loud as you calmly face a stressful situation, such as a traffic jam or being late for an important appointment. Hearing the words you use to calm down and having a model for strategies to calm down teaches children how to calm themselves down, says Neal.

For preschool age children, you can help them learn to name the emotion they are feeling and work through strategies to cope with it, says Neal. “We can name the emotion. Ask them if they are sad or frustrated or disappointed? Once they pick the word that matches their emotion, give them strategies to express those emotions, as well as strategies for how to get back to neutral so that they are ready and available to learn.”



Monitor For Red Flags Of Screen Use Impacts On Behavior And Health

If allowing screen use in early childhood, watch for some “red flags” that may help let you know that digital media use is causing negative impacts to their health and/or development. These can include:

- Becoming very angry or upset when asked to turn off or put away screens
- Being unable to calm themselves without a screen
- Increasingly poor social interactions
- Irritability when they’re not on a screen
- Spending time off of the screen thinking about how to get back on the screen
- Negative impacts on sleep, eating, achievement of developmental milestones, or on their education/performance at school



We need to be mindful of exactly how we, the adults... are setting up the model for how kids might understand how screens play a role in their own lives.

Stephanie Jones

HARVARD GRADUATE SCHOOL OF EDUCATION



Limit And Explain Parent/Caregiver Device Use In Front Of Infants And Children

When parents pick up their own phone or tablet in front of their infant or young child, the attentional link is cut, and indicates to the child that the most important thing in the room is our tablet, phone, or computer, says Hirsh-Pasek. “That’s what we’re teaching our children.”

Researchers have found behavioral impacts to children from this “technoference”. Effects of parental technoference extend to infants as well, with negative emotional reactions like crying or increased bids for parent attention. You may view your own media use in front of an infant or a toddler as something they don’t really notice, but researchers are finding that they are noticing, and it can have potential negative effects, says McDaniel.

While there’s no “magic number” of the amount of time on media in front of children that is acceptable or unacceptable, “we should be trying to find a balance and give our babies more attention than we’re giving our devices, especially since very early on, they can’t regulate their own emotions and behavior. They need that co-regulation, that interaction and being held and soothed by their parent or caregiver to be able to learn those things over time,” he says.

Holding your phone and “just quickly checking” for email or texts signals to your children what you think is acceptable and workable behavior, says Stephanie Jones, PhD, Gerald S. Lesser Professor of Child Development and Education, Harvard Graduate School of Education. “We need to be mindful of exactly how we, the adults who are the cornerstone of all of this, are setting up the model for how kids might understand how screens play a role in their own lives.”

Explain why you are using your media if you must use it in front of children, says Kucker and other experts. “Be transparent about it.” Tell the child you need to see the time, or see if Grandma called, then go back to playing interactively.

Use Picture Books In Your Daily Routine

Research shows that reading old-fashioned “picture books” regularly, even ones that the child may have well-memorized, is not only a great way to develop the brain, but is wonderful for parent-child bonding and child soothing, especially at bedtime, says West. “Your baby’s not only learning some of the elements of reading, like turning the pages and distinguishing words, but by reading picture books, you’re also helping that neural connection and their ability to eventually learn to read all by themselves. And this engagement that you have with your child while you’re reading a picture book fosters that closeness, and that interaction that helps with security, bedtime cues, and healthy sleep routines.”



Face Your Own Struggles With Your Media Use - And Model Finding Solutions

Many parents find themselves in a struggle with managing their personal media use. If you find yourself in this situation, try to figure out why it has become a habit, because “the reason really matters,” says McDaniel. He notes that while your media use may be filling a need, you may want to assess whether the use is effectively filling that need. If it is not, then you may want to search for another more effective way to fill that need.

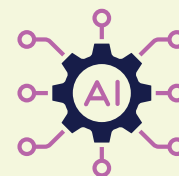


If you feel you absolutely need the phone to de-stress or self-regulate, “do what you need to do to calm down and become emotionally available for your child,” says McDaniel. However, he cautions that if you truly investigate your media use for this purpose, you may sometimes find that it isn’t quite solving the problem as you had hoped.

Preschool age children understand what a screen is, and they know that they sometimes like to use screens for longer than they intended to, says Lara Wolfers, PhD, Faculty of Psychology, University of Basel.

If you are feeling stress or guilt around your own media use and want to change, it’s important to verbalize and explain this to your child. Explaining the reasons for your behavior, as well as coming up with a plan on how to change, can help teach your child early on to be mindful and also model the ability to change to more healthful behaviors.

Parent Mindfully Around Young Children And AI



Talk about what AI is and is not - early and often

While young children aren’t typing in queries to ChatGPT, they are nonetheless interacting with AI in other forms. These interactions require guidance to help them understand the distinction between humans and technologies that mimic human behavior, say experts. Young kids around three years of age sometimes think that AI-enabled voice devices in the home are a human inside a smart speaker talking to them, for example, says Ying Xu, PhD, Assistant Professor of Education at the Harvard Graduate School of Education. “At the preschool age, children naturally form their own conceptions of what constitutes a human or a technology, though these ideas are sometimes inaccurate. Providing explicit instruction can help them develop a more accurate and deeper understanding of what AI entails,” she says.

These conversations should start as early as possible, says Judith Danovitch, PhD, Professor of Psychological and Brain Sciences, University of Louisville. “Adults should say things like, ‘I’m going to use AI to solve this kind of problem because it’s really good at solving that kind of problem,’ or, ‘I’m not using it because it’s probably not going to give me the right answer.’ Children learn a great deal from modeling and from parent-child conversations. We should start these at home very young, a lot younger than I think we do right now.” For example, this could include being polite to Siri or Alexa.

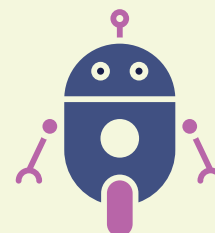
Parent Mindfully Around Young Children And AI (continued)

Don't Worry Your Child Will Be Left Behind

Don't fall prey to the idea that somehow your young child is going to "fall behind" in a technological world if they do not use media in the first years. Giving them foundational developmental skills is all they need for later prowess, including with technology. "The thing I tell parents is, your child doesn't need a tablet. They're not going to be left behind if they don't have a tablet. They're so easy to use. It's not like they're learning new tech skills by swiping and downloading stuff," says Radesky.

Address AI As A Social Partner

The increased use of AI companions as social partners by adults and children may end up impacting in-person social development. Without clear signals from product developers about the nature of what they are interacting with, young children can get confused, says Xu. "We see a lot of AI products label or frame the product as your friend and your companion that will be always listening and be with you. This is tricky because it confuses children from the product perspective that they actually don't get a clear signal who they're interacting with." Until AI product developers are more clear about labeling what the product is and what it provides, parents and caregivers should take care to guide children to understand AI tools and their limitations as social partners.



Monitor Young Children Chatbot Interactions

Young children are interacting with chatbots like Amazon Echo in the home, as well as kid versions designed specifically for young children. Parents and caregivers should evaluate and monitor the use of these technologies carefully, says Xu. Consider:

- Can the chatbot understand the young child's questions?
- Is the content provided by the chatbot accurate and suitable for children?
- Can a chatbot convey the information in a manner that children can understand?

Monitor the information provided by the chatbot and if necessary, rephrase or supplement it based on the child's needs, says Xu.

This guide/tip sheet was created based on content shared in Children and Screens' #AskTheExperts webinars and "Screen Deep" podcast episodes from 2020-2025.

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