

Engaging the Internet for Good: Avoiding the Pitfalls Across Developmental Stages

Ranjith Kasanagottu, MD

Assistant Professor, Developmental Behavioral Pediatrics

UT Southwestern

Learning Objectives



1

Analyze the latest longitudinal and meta-analytic **epidemiology** regarding **digital media harms**, specifically **addictive trajectories** and **suicidality**.



2

Apply the **5 C's framework** and age-by-age **developmental recommendations** to provide nuanced **anticipatory guidance**.



3

Integrate standardized **screening tools** (PRIUSS) and actionable **interventions** (Family Media Plans) into routine clinical workflows

Mapping the Modern Digital Terrain

Usage

90% of teens (ages 13-17) use social media. Top platforms:

YouTube (95%) **95%**

TikTok (67%) **67%**

Instagram (62%) **62%**

The Bottleneck

70% of families report allowing **zero independent device usage**, revealing a massive gap in teaching digital autonomy.



Time

7.5 Hours

The average daily screen time for youth ages 8-18.

The Psychological Impact: Media Overwhelm & Anomie



A blizzard of conflicting content creates anomie—a state of confusion where social norms are unclear, leading to feelings of isolation and disconnection.

Navigating the Misinformation Crisis

The Threat

The internet has shifted from finding information to evaluating it. Deepfakes, AI-generated content, and sophisticated algorithms constantly target student attention.



The AI Complication

Generative AI tools (like ChatGPT) can act as tutors, but over-reliance lowers critical thinking and reasoning.



The Chatbot Risk

Companion-style AI bots encourage emotional reliance, risking exposure to unsafe guidance. AI should remain task-focused, not a replacement for human relationships.

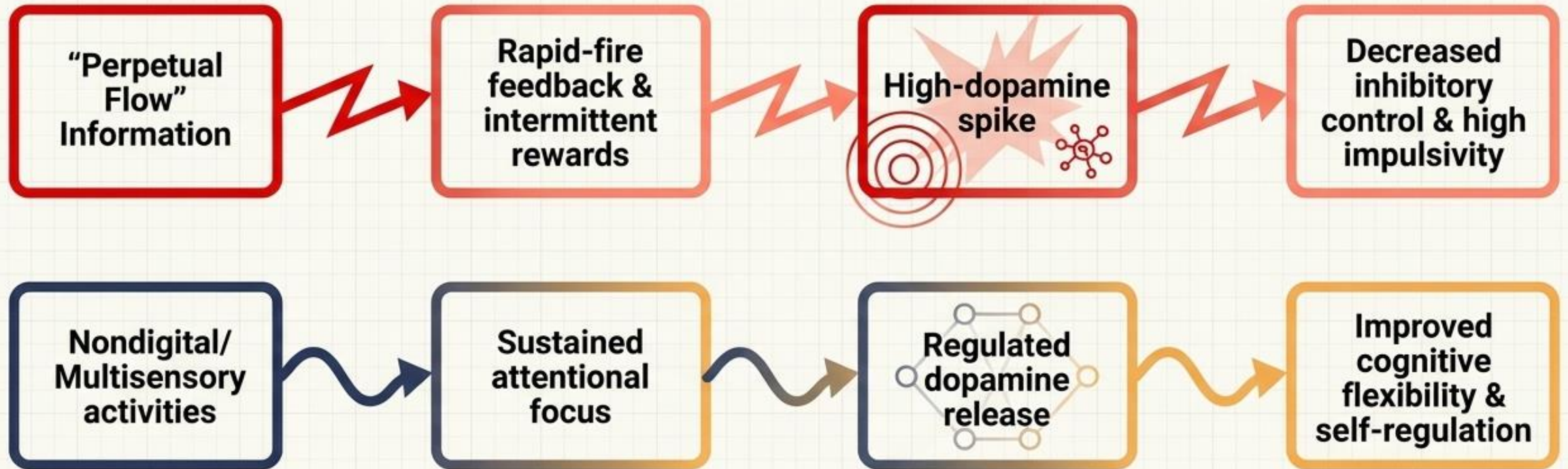
The Highly Plastic Brain



Unique Susceptibility: The high degree of neuroplasticity in childhood allows for rapid adaptation but renders the brain uniquely vulnerable to high-stimulation digital environments.

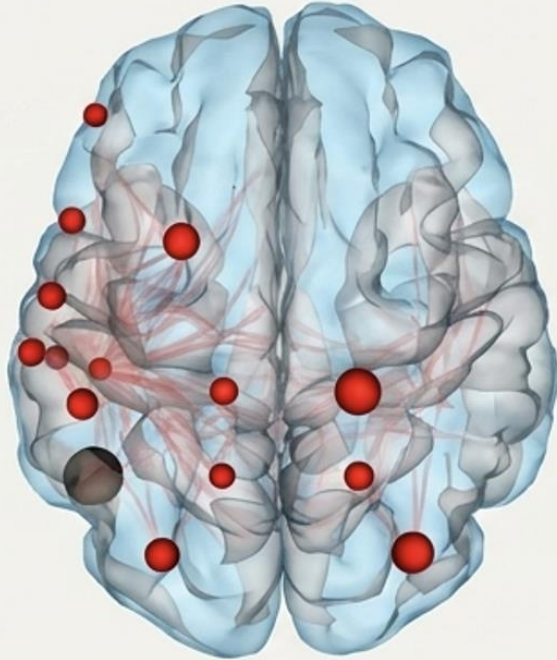
Persuasive Design: Digital platforms intentionally leverage these vulnerabilities, using intermittent rewards and rapid-fire feedback to bypass developing inhibitory controls.

The Media Activation Loop



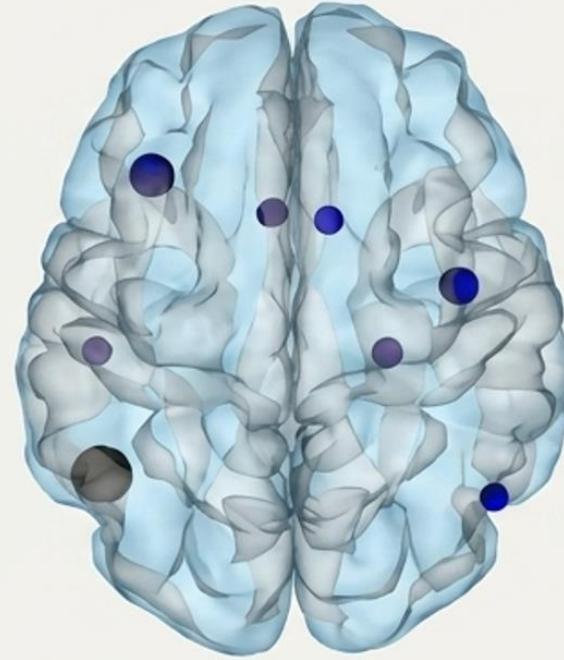
The Diverging Paths of Development

Hours Spent Reading



High density of large red nodes representing strengthened functional connectivity.

Hours Spent on Screens



Blue nodes representing negative correlations, visibly sparse and disconnected.

- Study of 8-to-12-year-olds shows a direct correlation between high screen use and lower connectivity in brain areas supporting language/reading skills.
- Children often believe they comprehend more digitally, but linguistic research proves print fosters deeper comprehension.

The Behavioral Feedback Loop

The Child: The Digital Pacifier

Using screens to soothe tantrums prevents the development of emotional self-regulation.

Result: More frequent/intense future meltdowns and difficulty transitioning off devices.



The Caregiver: Technoference

Caregiver device use during child-time breaks eye contact and relational synchrony.

Result: The child acts out to regain attention, or retreats into their own problematic media habits.



Clinical Intervention: Joint Media Engagement (co-viewing) breaks this cycle and promotes language and prosocial behaviors.

The Reality of Early Exposure

Risk Factors

Pre-existing behavioral difficulties
(Up 13% odds of harm)

Ownership of personal, unsupervised devices
(Up 21% odds per device)

~25%
of children
experience online
harm by age 8.

Clinical Correlates

Early harm is negatively associated with self-worth and positively associated with depressive symptoms at age 8.

Developmental Outcomes: 2026 Meta-Analysis

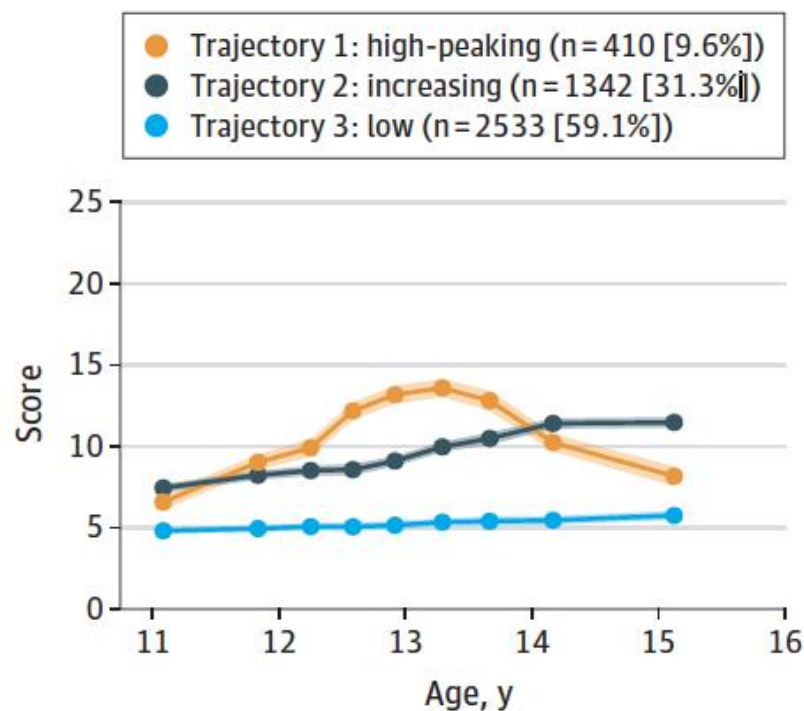
Synthesis of up to 153 longitudinal studies on digital media use in youths aged 0-18.

Social Media	Video Games
 Higher Depression, Behavioral Problems, Self- Injury, Substance Use	 Greater Aggression, Externalizing Behavior
 Lower Self-Perception, Academic Achievement	 Modestly Higher Attention, Executive Functioning

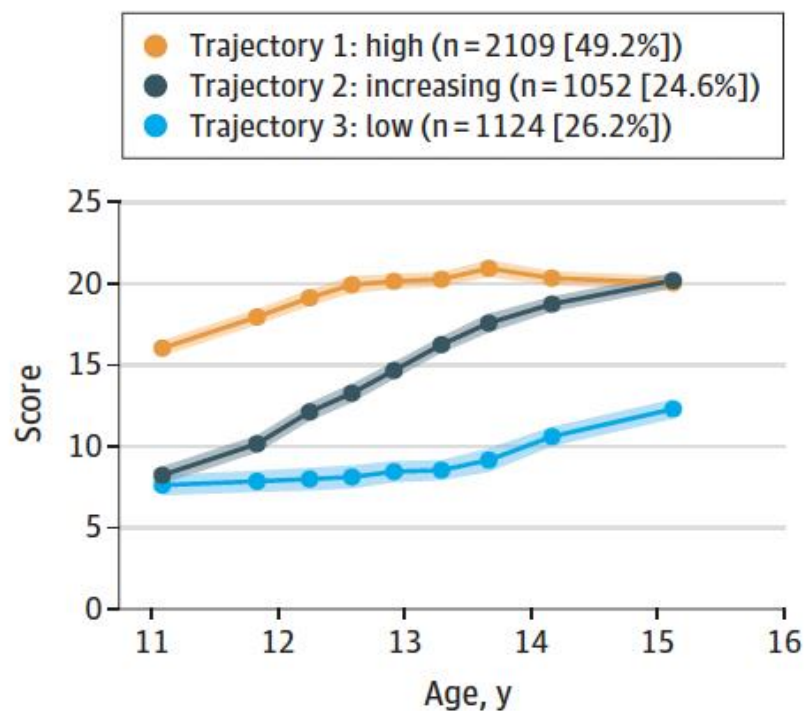
Redefining the Risk: Addictive Use Trajectories



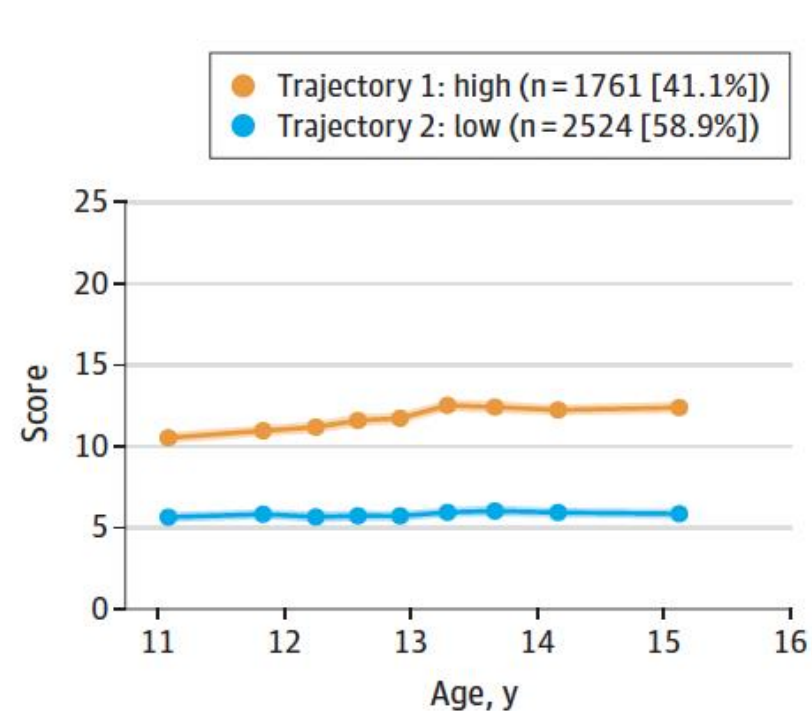
A Social media addictive use



B Mobile phone addictive use



C Video game addictive use



Source: 2025 JAMA cohort study by Xiao et al

Clinical Outcomes of Addictive Use



Social Media

Increasing Trajectory: RR **2.14** for suicidal behaviors; RR **1.46** for suicidal ideation. Higher externalizing symptoms (T-score diff **1.05**).

High-Peaking Trajectory: RR **2.39** for suicidal behaviors.

Mobile Phones

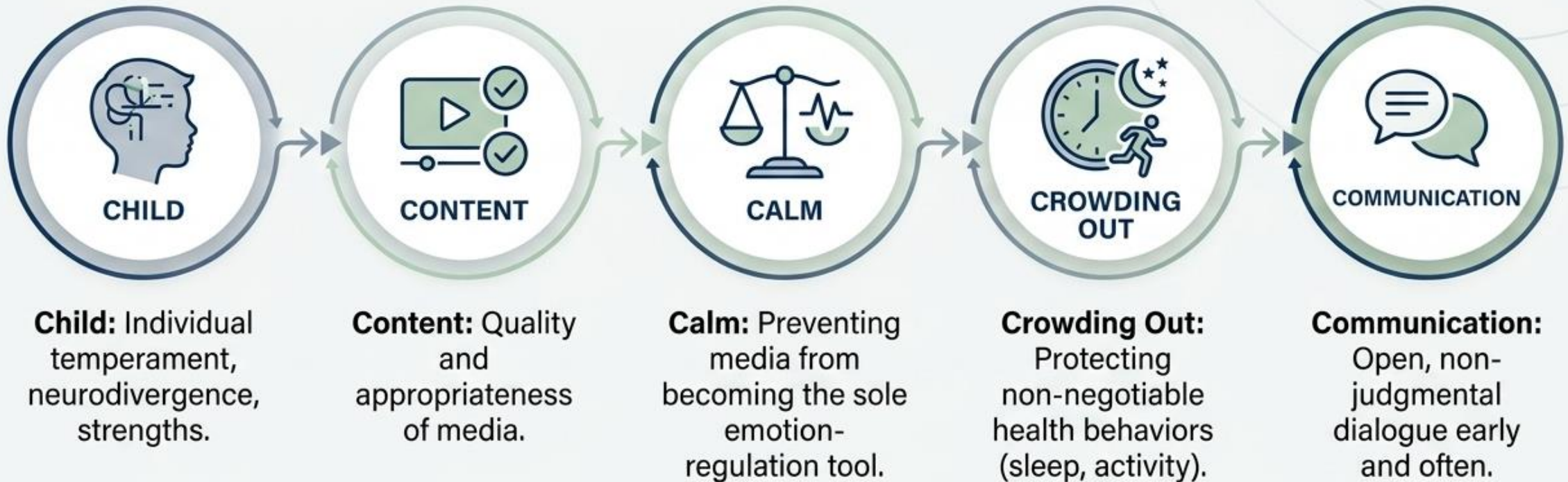
High Trajectory: RR **2.17** for suicidal behaviors.

Video Games

High Trajectory: Largest relative difference in internalizing symptoms (T-score diff **2.03**) and **higher** externalizing (T-score diff **0.94**). RR **1.54** for suicidal behaviors.

Transitioning to Practice: The 5 C's Framework

Operationalizing the AAP Center of Excellence
Guidelines across five developmental stages.



Pediatric Digital Media Guidelines

A developmental stage framework for assessing risk and applying clinical interventions.

Developmental Stage	Primary Digital Risks	Recommended Clinical Interventions
 Infants & Toddlers (0–2 Years)	• Delayed language development • Reduced parent-child interaction • Emotion dysregulation (difficulty transitioning off screens)	• Zero screen time <18 months (except family video chat). • Co-view only (18–24 mos) using high-quality programming (e.g., Sesame Street); talk about what you see. • Avoid using as a pacifier: Never use screens routinely to calm a fussy child; interferes with learning self-regulation.
 Preschoolers (2–5 Years)	• Tantrums upon device removal • Displacement of active play and reading • Exposure to ads and low-quality content	• Limit entertainment to ≤1 hour/day of educational content (e.g., PBS KIDS). • Prioritize active play and establish screen-free bedrooms. • Enforce boundaries: No screens within 1 hour of bedtime. Watch together to connect media to the real world.
 School-Age (6–12 Years)	• Cyberbullying and exposure to inappropriate content • Displacement of physical activity and sleep • Early signs of compulsive or problematic use	• Draft a Family Media Plan establishing boundaries, screen-free zones, and screen-free times. • Activate parental controls on devices, routers, and gaming platforms. • Teach digital literacy: Explain ads, privacy, and the permanence of online posts. • “Crowd in” offline activities (sports, arts, volunteering); avoid games with excessive violence or manipulative in-app purchases.
 Adolescents (13–18 Years)	• Depression, anxiety, and sleep disruption (8–10 hours needed) • Algorithmic exposure to self-harm, eating disorders, or substance use • Addictive use patterns and social isolation	• Collaboratively update the Family Media Plan as autonomy grows. • Assess maturity (via AAP PhoneReady Questionnaire) before providing a first smartphone. • Maintain open dialogue regarding FOMO, body image, and online privacy. Encourage curating positive feeds. • Monitor clinical warning signs: Declining grades, withdrawal, sleep disruption, or mood shifts.

Universal baseline for all ages: Parents must model healthy habits, never use screens as rewards or punishments, and prioritize sleep, movement, and in-person connection. Content quality matters more than screen time.

Stakeholder Roles in Digital Safety

Findings from the Moreno et al. (2013) Key Stakeholder Survey.

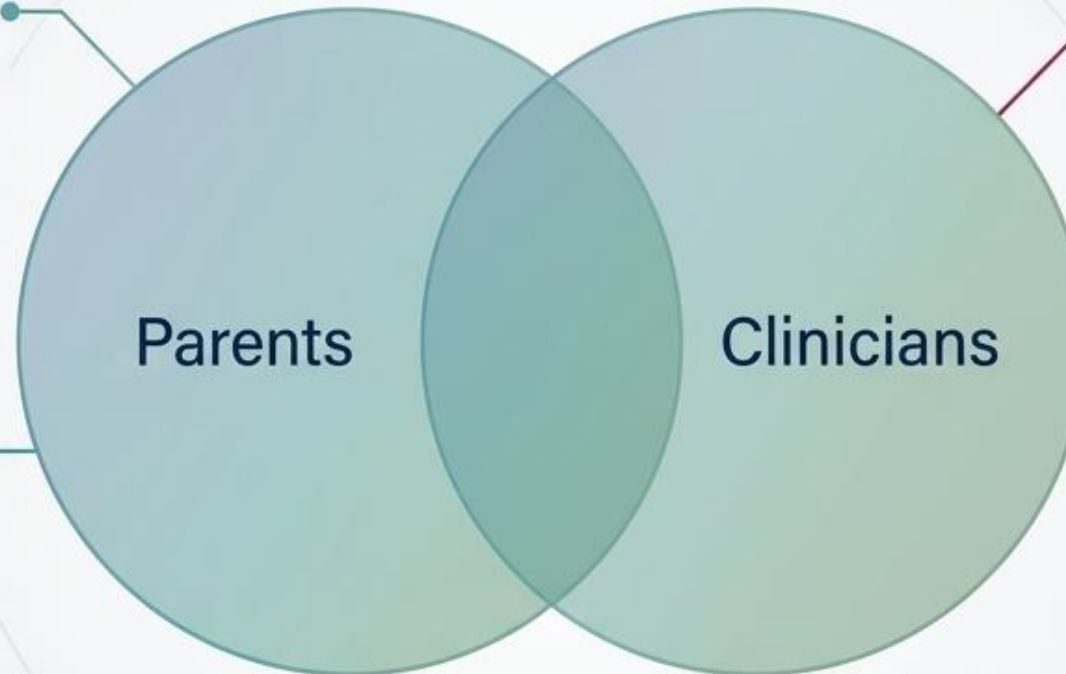


The Parent Role:

Identified universally as the primary teachers of digital safety (though currently only **40.3%** teach it regularly).

The Optimal Age: 356

stakeholders agreed the optimal mean age to begin teaching internet safety is **7.2 years** (early grade school).

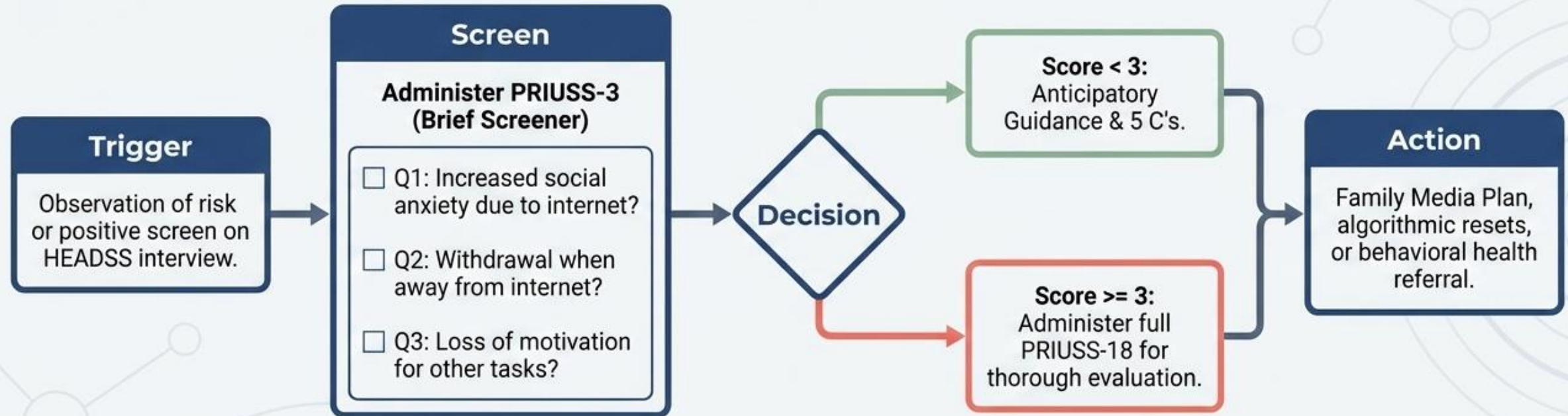


The Clinician Role:

Only **2.6%** of clinicians regularly counseled on this topic.

The Clinical Mandate: Pediatricians must bridge this gap by providing anticipatory guidance, validating the 5 C's, and supporting parents as primary educators.

Clinical Screening: The PRIUSS Pathway



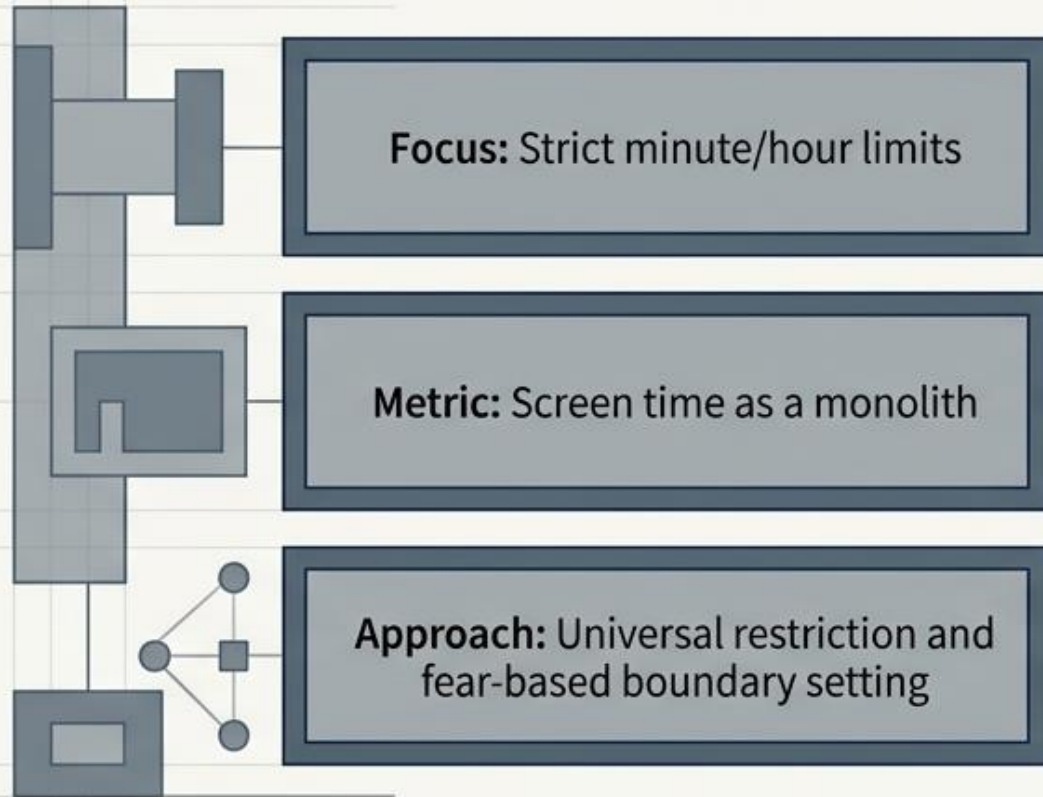
Clinical Recommendation: The PRIUSS is a screening tool with a strong evidence base for validation and assessment in both screening and longitudinal use. (Level of Evidence: Strong)

Diagnosing the Ecosystem: Identifying Low-Quality Content

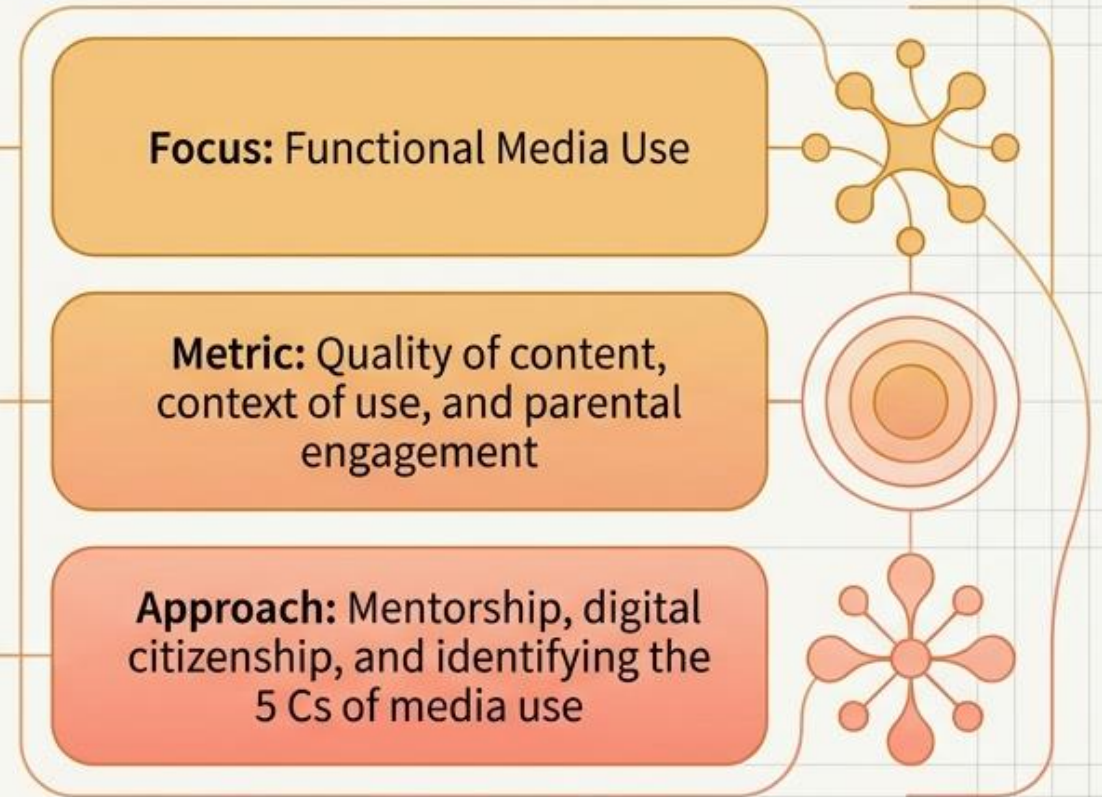
- S: Streaks** (Encourages daily, compulsive play)
- C: Creepy Content** (Violent, discriminatory, algorithmic radicalization)
- R: Rewards** (Frequent stars/tokens reinforcing play)
- E: Escape is hard** (Dark patterns preventing exit)
- E: Excessive ads** (Commercialized, popup-heavy)
- N: Nagging** (Push notifications, subscription prompts)
- O: Over-the-top** (Hyper-stimulating, attention-grabbing)
- U: Unwanted contact** (Unmoderated chat features)
- T: Toys** (Highlighting excessive consumption)



Outdated Paradigm



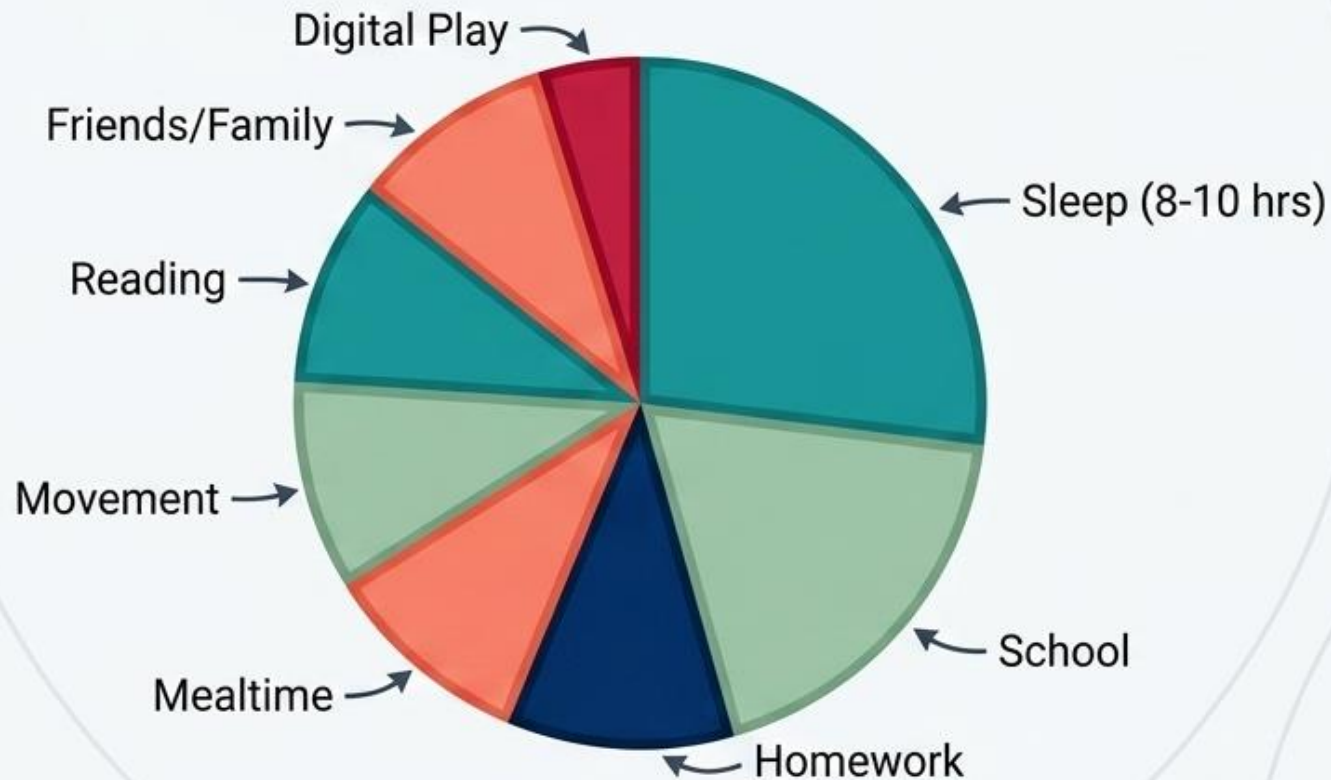
Modern Paradigm



Screen time is not inherently bad; the harm emerges when it displaces core developmental needs or utilizes manipulative, engagement-based design.

The Clinical Synthesis: Crowding in Life

The AAP 2026 guidelines emphasize that success is not just about subtracting screens; it is about crowding in life.



Transition the clinical conversation with families from "restriction" to "nourishment".

Actionable Interventions: Swaps & Plans

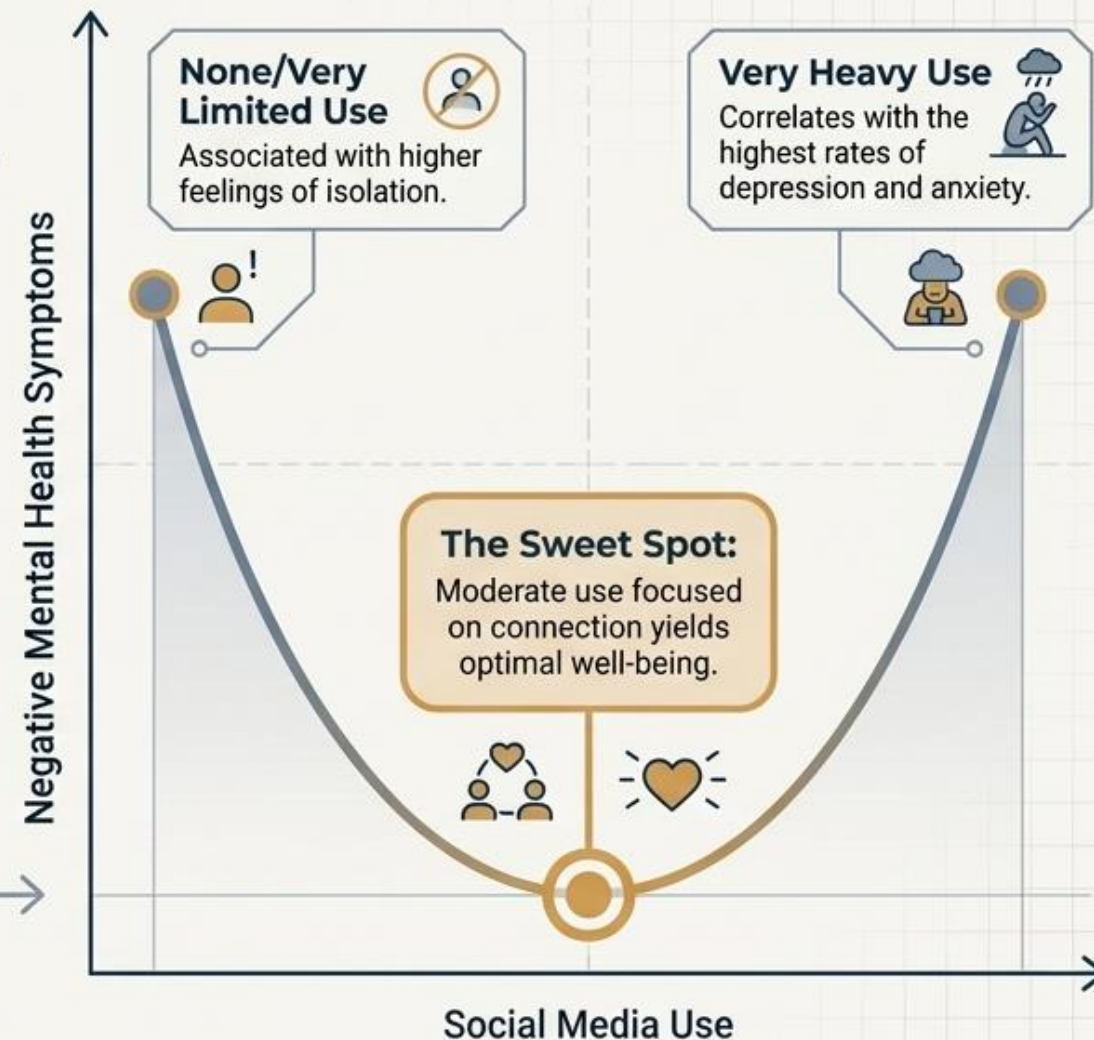
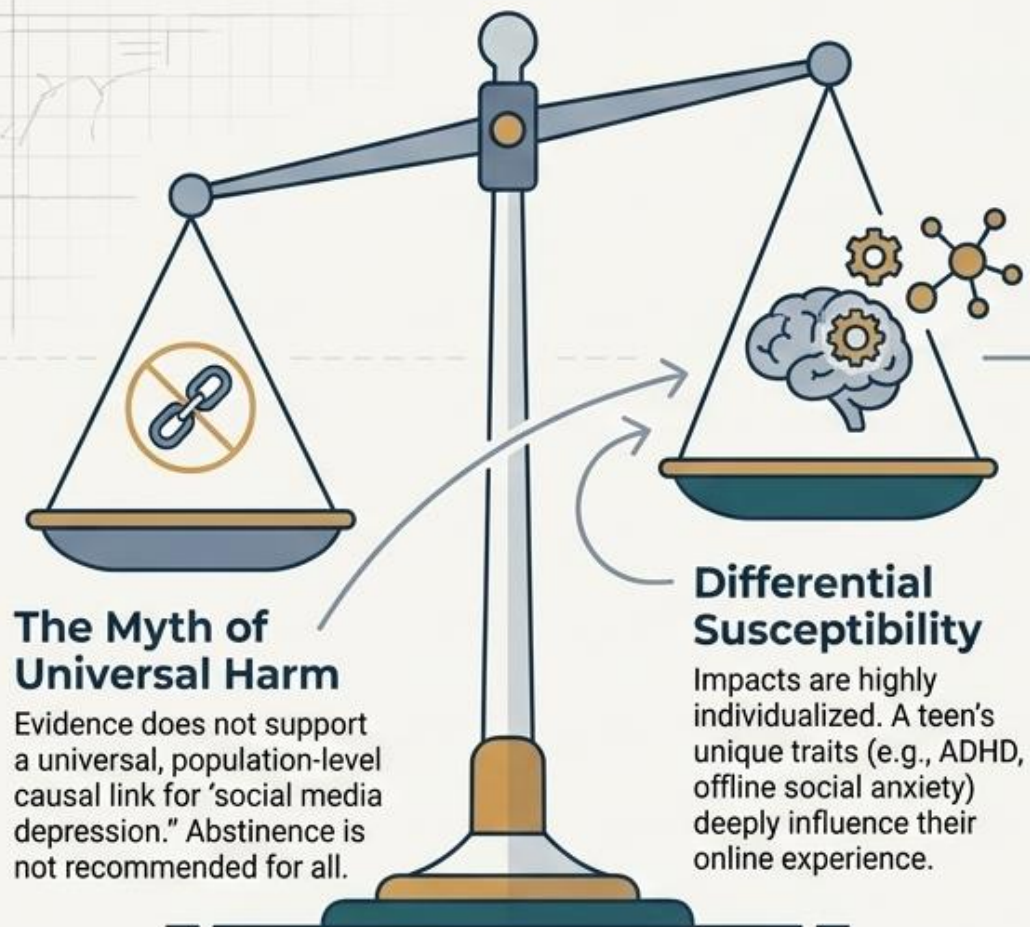


- Craft
- Book
- Board game
- Bike ride
- Playground adventure
- Nature walk

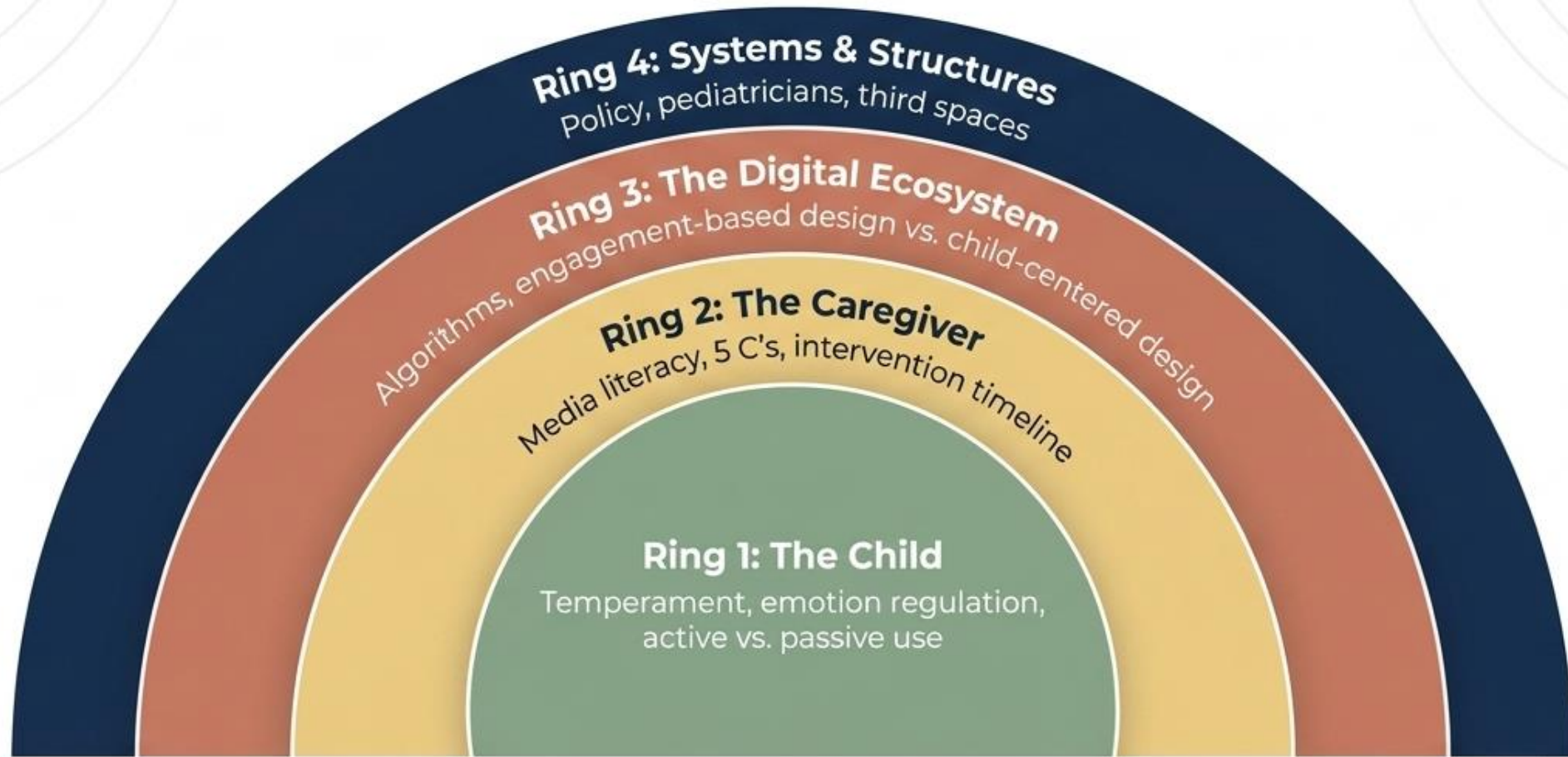
Crafting the Family Media Plan

- ✓ **Establish Screen-Free Zones:** Dining tables and bedrooms.
- ✓ **Protect Sleep:** 60-minute absolute screen curfew before bed to protect melatonin onset.
- ✓ **One Screen at a Time:** Turn off background TV to improve sustained attention.
- ✓ **Model Behavior:** Parents must check their own "technoference" and model balanced use.

The Individualized Reality of Digital Media Impacts



The Socio-Ecological Framework for Digital Well-Being



**Protecting youth from addictive trajectories
requires fortifying every layer of this ecosystem.**



Ring 1: The Child & Differential Susceptibility

Passive vs. Active Use

Passive

Mindless scrolling and pure consumption.
Strongly correlated with higher likelihood of depression symptoms.

Active

Creating, connecting, messaging, and sharing hobbies.
Correlated with neutral or positive mental health impacts.

Differential Susceptibility

Concept

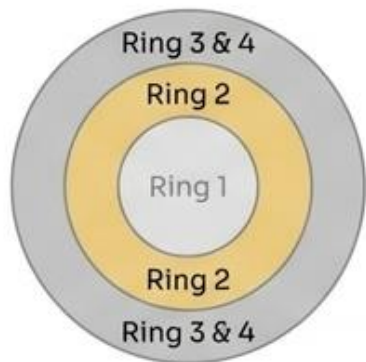
Not all adolescents use social media the same way.
Youth bring unique risks and strengths to their digital lives.

Family-Engaged Teens - 66%

Exhibit healthy boundaries supported by open communication and low parental screen use.

At-Risk Teens - 33%

Exhibit higher rates of depression and loneliness, strongly correlated with high parental screen use (up to 8 hours/day) and low communication.



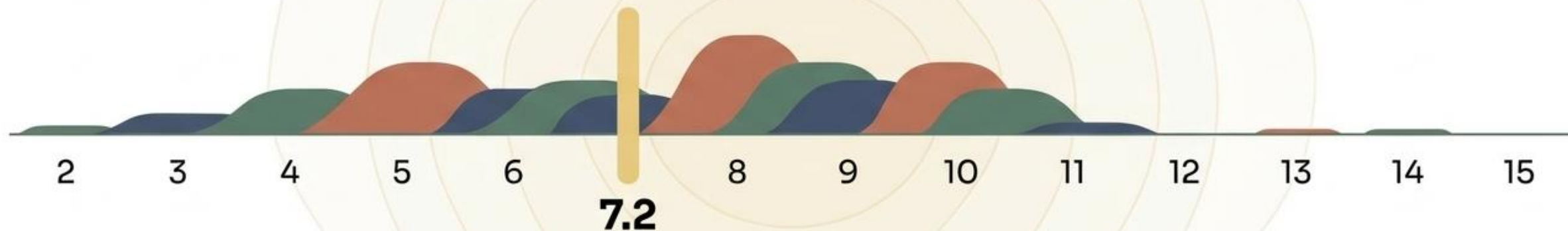
Ring 2: The Caregiver's Intervention Timeline

The Primary Educator

96% of parents, 97% of teachers, and 97% of clinicians designate the Caregiver as the individual with primary responsibility for teaching digital safety.

The Reality Gap

While 100% of parents report discussing online safety, only 75% of adolescents report hearing it, highlighting a critical gap in effective communication.



The Consensus Baseline

Teachers, pediatricians, and parents universally agree that intensive internet safety education must begin at an average age of 7.2 years old—well before the age 11 “addiction activation” spike.

The Family Action Matrix

Fostering Connection

Device-Free Zones: Physical baskets for phones during dinner to establish “us” time.

Offline Photo Albums: Printing special photos rather than posting them, giving kids agency over their image.

Non-Tech Favorites: Establishing a default offline routine (board games, nature walks).

Building Critical Thinking

The Ratings Game: Rating videos 1-5 on metrics like “I use my brain” vs. “My brain turns off.”

Scam Finder: Actively identifying spam calls, influencer bias, and too-good-to-be-true ads.

Pop-Up Whack-a-Mole: Teaching kids to hunt down and close invasive ads, building autonomy.

Setting Boundaries

Digital Disengage Challenge: Gamifying the act of putting a device down immediately when asked.

Emotion Coping Plans: Replacing the tablet with stretching, stress putty, or deep breathing during a tantrum.

Privacy Quizzes: Practicing the difference between shareable info (high scores) and private info (last name, school).

The Control Panel: Optimizing Platform Settings



Instagram Teen Accounts

Default for users under 18. Automatically private, filters sensitive content, limits messaging to followed accounts, and nudges users to close the app after 60 minutes.



Apple Screen Time

Utilize Downtime Flex for 15-minute extensions. Use Communication Safety to scan for explicit images in Messages and AirDrop.



Gaming Networks (ESRB)

Utilize platform tools to Mute, Block, and Report toxic players. Look for ESRB Privacy Certified seals to ensure the game complies with COPPA data laws.



Ring 3: The Ecosystem Design Audit

Profit-Driven / Engagement-Based Design

Autoplay & Endless Scrolls: Removes natural friction, preventing the user from evaluating if they want to disengage.

Algorithmic Feeds: Prioritizes extreme, fast-paced, or commercialized content to maximize attention capture.

Dark Patterns & Gamification: Uses intermittent behavioral reinforcers, badges, and aggressive notifications to compel immediate return.

VS

Child-Centered Design

Natural Stopping Cues: Built-in friction that requires users to actively click to advance, respecting their agency.

Vetted & Rated Content: Prioritizes cognitive development, prosocial themes, and a relaxing pace.

Safety by Default: Chat functions disabled, stringent privacy protections, and zero targeted algorithmic advertising.



Ring 4: Systems & Structures

Policy & Regulation

Enacting Universal Erasure laws allowing minors to permanently delete their digital footprint.

Demanding 'Safety by Default' frameworks from tech platforms and banning algorithmic amplification harmful content for youth accounts.

Schools & Education

Implementing consistent, evidence-based phone policies to protect distraction-free learning environments.

Integrating formal media literacy into the core academic curriculum.

Funding 'Third Spaces'

Crowding out digital media requires accessible physical alternatives.

Must invest in robust childcare, after-school programs, green spaces, libraries, and paid parental leave

The Legal Safeguards: Navigating Federal Policy

CIPA (Children's Internet Protection Act)

Requires schools to filter/block obscene content and formally educate students on appropriate online behavior and cyberbullying awareness.



COPPA (Children's Online Privacy Protection Act)

Mandates that websites obtain verified parental consent before collecting personal information from children under 13.

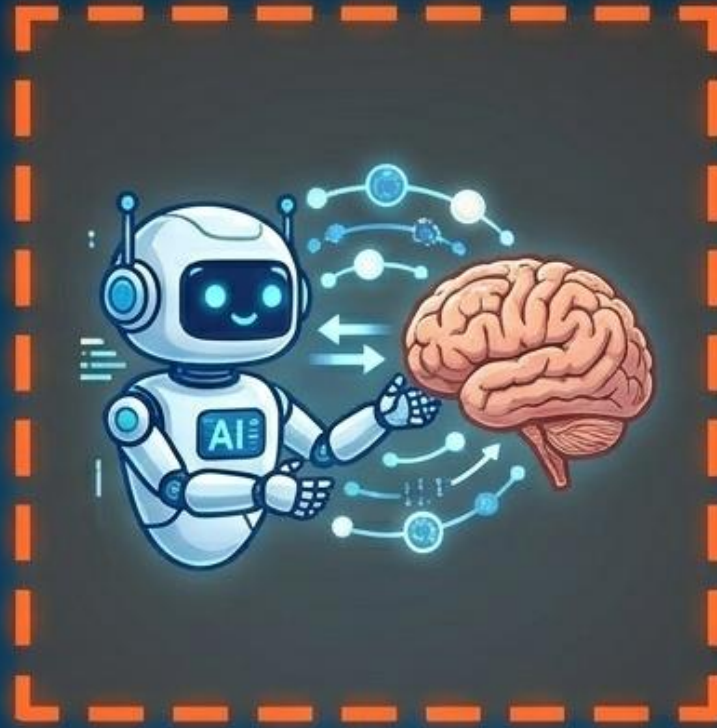
FERPA (Family Educational Rights and Privacy Act)

Strictly protects the privacy of student education records. Sharing identifiable student images online without permission violates this act.

Navigating the AI Era: Safe Sandboxing

ChatGPT Family Mode

Link parent and teen accounts to view usage history (topics and frequency, not raw messages).



Homework vs. Creative Mode



Use settings to disable creative writing assistance when AI is meant to act as a tutor, ensuring the student still does the cognitive lifting.



Algorithmic Literacy

Teach teens how recommendation algorithms (like TikTok's) learn what keeps them watching. Encourage liberal use of the Not Interested button to actively train their own algorithms.

Universal Principles for Every Age



Be a Role Model

Put your own phone down;
children mirror your habits.



Protect the Basics

Prioritize sleep, movement,
and in-person connection—
these are non-negotiable.



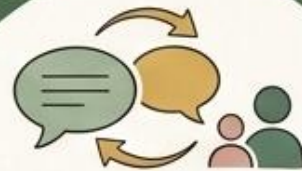
Content > Time

A creative activity is vastly
different from infinite
scrolling.



Decouple from Discipline

Never use screens as a reward
or punishment; it artificially
inflates their perceived
value.



Keep Talking

Digital guidance is an
ongoing dialogue, not a
one-time lecture.



Seek Help

Watch for signs of compulsive
use or withdrawal and consult
your pediatrician.

Conclusion & Clinical Imperatives

- ✓ **Recognize the Threat:** Addictive trajectories correlate strongly with suicidality and internalizing symptoms.
- ✓ **Screen Aggressively:** Utilize the PRIUSS-3 and integrate digital habits into the standard HEADSS assessment.
- ✓ **Guide Developmentally:** Apply the 5 C's framework tailored to the child's specific developmental vulnerabilities.
- ✓ **Empower Caregivers:** Shift the goal from enforcing arbitrary limits to creating a Family Media Plan that "crowds in" healthy behaviors.

References

- Adeyemi, V. (2025). "The Impact of Digital Technology on a Child's Cognitive and Social Development: Implications for Education." *Premier Journal of Psychology*, 2.
- American Academy of Child and Adolescent Psychiatry (AACAP). "AACAP Screenside Chats Episode 015 - Teen Screens & COVID-19." (YouTube).
- American Academy of Child and Adolescent Psychiatry (AACAP). "Internet Use in Children." *Facts for Families*, No. 59.
- American Academy of Child and Adolescent Psychiatry (AACAP). "Screen Time and Children." *Facts for Families*, No. 54.
- Arlington Public Schools. "Digital Wellness Toolkit".
- Black, K. (2024). "Teaching Information Literacy in an Age of Misinformation." *Faculty Focus*.
- Boules, F. (2025). "Screen Time Boundaries Without Meltdowns: A Family Guide".
- Cambridge Judge Business School. (2024). "How digital media impacts child development".
- Children and Screens. (2025). "The Children and Screens Guide for Child Development and Media Use: Middle Childhood Ages 6-11".
- CHOC Children's. (2026). "Updated AAP recommendations for screen time: What parents need to know." *Children's Health Hub*.
- Common Sense Media. "Social Media & Mental Health: Four Tips for Kids." (YouTube).
- "Developmental Frameworks for Digital Wellness: Guiding Children and Adolescents in the Modern Internet Landscape".
- "Digital citizenship: pre-teens and teens being responsible online." *Raising Children Network*.
- "Engaging the Internet for Good: Avoiding the Pitfalls Across Developmental Stages".
- Entertainment Software Rating Board (ESRB). "Family Gaming Guide".
- Entertainment Software Rating Board (ESRB). "Tools for Parents".
- Faix, A. I., & Fyn, A. F. (2023). "Six frames, four moves, one habit: Finding ACRL's Framework within SIFT." *College & Research Libraries News*, 84(11).
- FSR, Inc. "Top Strategies to Keep Your Students Safe Online with Technology".
- Garland Independent School District. "Digital Citizenship Guidelines Teachers".
- Gath, M., & Swit, C. (2024). "Digital media in early childhood: risk factors for online harm and psychosocial correlates." *Frontiers in Developmental Psychology*, 2.
- HealthyChildren.org (American Academy of Pediatrics). "How to Make a Family Media Plan".
- Lakeside. (2026). "How to Teach our Youth to Have Healthy Digital Citizenship".
- Legacy Health Endowment. (2020). "A Parent's Guide to Video Games, Parental Controls, and Online Safety".
- Maffeo-Spitzer, M. (2024). "How to Create a Family Media Plan." *Thrive Alliance Group*.
- MGHClayCenter. "Breaking News and Kids - Shrinking It Down." (YouTube).
- MGHClayCenter. "Shrinking It Down: Living With Technology." (YouTube).
- Michigan Medicine. "Social Media & Mental Wellness - Tips for Families of Teens and Tweens." (YouTube).

References

- **Michigan Medicine.** "Social Media: Top Setting Tips to Promote Positive Boundaries & Mental Health for Young People." (YouTube).
- **Moreno, M. A., Egan, K. G., Bare, K., Young, H. N., & Cox, E. D. (2013).** "Internet safety education for youth: stakeholder perspectives." *BMC Public Health*, 13(543).
- **Moreno, M. A., Radesky, J., Walsh, M. C., & Tomopoulos, S. (2024).** "The Family Media Plan." *Pediatrics*, 154(6).
- **Muir, T. (2023).** "Teaching Students to Identify Credible Research Sources." *Edutopia*.
- **Munzer, T., Parga-Belinkie, J., Milkovich, L. M., et al. (2026).** "Digital Ecosystems, Children, and Adolescents: Policy Statement." *Pediatrics*, 157(2).
- **Muth, N. D., Bolling, C., Hannon, T., et al. (2024).** "The Role of the Pediatrician in the Promotion of Healthy, Active Living." *Pediatrics*, 153(3).
- **National Institute of Child Health and Human Development (NICHD).** "Understanding How Digital Media Affects Child Development." *National Institutes of Health*.
- **"Navigating Youth Media Use and Digital Safety".**
- **New York City Public Schools.** "Digital Citizenship - InfoHub".
- **New York City Public Schools.** "Digital Citizenship".
- **Poth, R. D. (2024).** "Teaching Students the Cyber Safety Basics." *Edutopia*.
- **PS253.** "Digital Citizenship".
- **PublicSchoolWORKS.** "Promoting Safe Social Media Use for Students and Teachers".
- **Radesky, J. (2024).** "Understanding the New AAP Digital Media Guidelines for Screen Time and Social Media." *AAP Center of Excellence on Social Media and Youth Mental Health*.
- **Rodríguez Castillo, N. E., Mendoza Carrera, J. E., Andrade-Vásquez, M. M., & Acosta-Barreno, K. (2026).** "Media Literacy Education and Misinformation in Social Media Among Adolescents: A Systematic Review and Meta-Analysis." *Journalism and Media*, 7(2), 71.
- **Screenwise. (2026).** "The Great Digital Handover: 2026's New Rules for Teen Autonomy".
- **Society for Research in Child Development (SRCD).** "Media & Technology." *Child Policy Briefs*.
- **Tate, K. (2025).** "Teaching Students about Cyber Safety: Essential Tips for Educators." *American Public University*.
- **Teague, S., Somoray, K., Shatte, A., et al. (2026).** "Digital Media Use and Child Health and Development: A Systematic Review and Meta-Analysis." *JAMA Pediatrics*, 180(5), 510-517.
- **"The Use of Critical Thinking to Identify Fake News: A Systematic Literature Review - PMC".**
- **Vance, P. E. (2025).** "Your Guide to Video Game Safety for Safer Internet Day 2025." *ESRB Ratings*.
- **Vance, P. E. (2026).** "Safer Internet Day 2026: ESRB's Video Game Tips." *ESRB Ratings*.
- **Waterford.org.** "How to Teach Your Students the 9 Elements of Digital Citizenship"