Written Testimony
of
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Protecting Our Children Online
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Members of the Kansas House Education, thank you for the opportunity to testify today on the online dangers facing our children and teens. I am Dr. Mitch Prinstein, Chief of Psychology at the American Psychological Association (APA). APA Services, Inc. is the companion organization of the American Psychological Association, which is the nation's largest scientific and professional nonprofit organization representing the discipline and profession of psychology, as well as over 173,000 members and affiliates who are clinicians, researchers, educators, consultants, and students in psychological science. Through the application of psychological science and practice, our association's mission is to use psychological science and information to benefit society and improve lives.

I am grateful you have joined policymakers from across the country in drawing attentional attention to youth and the online environment. Our youth are struggling in many ways, largely due to our society's failure to adequately attend to child and adolescent mental health. The testimony below represents one largely adapted from my testimony before the Senate Judiciary Committee in February of 2023 and again in September 2025. Unfortunately, very little few regulations or guardrails have been implemented in the last two years, yet new risks have emerged.

My testimony is broken down into the following sections to help inform the Committee about the complexities of the challenges before us and to help shape policy solutions:

Overview

We are seeing the repercussions of our underinvestment and lack of focus on children's mental health. Depression rates for teens doubled between 2009 and 2019 and suicide is the second leading cause of death for U.S. youth, up 4% since 2020, with one in five teens considering suicide during the pandemic and eating disorder emergency room admissions for girls 12 to 17 years old doubling since 2019 [1]. Furthermore, since the start of the pandemic, over 167,000 children have lost a parent or caregiver to the virus [2]. This kind of profound loss can have significant impacts on the mental health of children, leading to anxiety, depression, trauma, and stress-related conditions [3]. Faced with such data, in December 2021, the U.S. Surgeon General issued an advisory calling for a unified national response to the mental health challenges young people are facing [4]. The rarity of such advisories further underscores the need for action to help stem the mental health crisis of children and adolescents.

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[1] Radhakrishnan, L. (2022). Pediatric Emergency Department Visits Associated with Mental Health Conditions Before and During the COVID-19 Pandemic — United States, January 2019–January 2022. MMWR. Morbidity and Mortality Weekly Report, 71(8). https://doi.org/10.15585/mmwr.mm7108e2; Curtin, S. (2022). Vital Statistics Rapid Release Provisional Numbers and Rates of Suicide by Month and Demographic Characteristics: United States, 2021. https://www.cdc.gov/nchs/data/vsrr/vsrr024.pdf; Daly, M. (2021). Prevalence of Depression Among Adolescents in the U.S. From 2009 to 2019: Analysis of Trends by Sex, Race/Ethnicity, and Income. Journal of Adolescent Health. https://doi.org/10.1016/j.jadohealth.2021.08.026; Suicide. (n.d.). National Institute of Mental Health (NIMH). Retrieved February 10, 2023, from https://www.nimh.nih.gov/health/statistics/suicide#%3A~%3Atext%3DSuicide%20is%20a%20Leading%20Cause%20of%20Death%20in%20the%20United%20States%2C-According%20to%20the%26text%3DSuicide%20was%20the%20second%20leading%2Cages%20of%2035%20and%2044; Yard, E. (2021). Emergency Department Visits for Suspected Suicide Attempts Among Persons Aged 12–25 Years Before and During the COVID-19 Pandemic — United States, January 2019–May 2021. MMWR. Morbidity and Mortality Weekly Report, 70(70(24);888–894). https://doi.org/10.15585/mmwr.mm7024e1.

[2] Hidden Pain: Children Who Lost a Parent or Caregiver to COVID-19 and What the Nation Can Do To Help Them | COVID Collaborative. (n.d.). Www.covidcollaborative.us. https://www.covidcollaborative.us/initiatives/hidden-pain.

[3] Almeida, I. L. L., Rego, J. F., Teixeira, A. C. G., & Moreira, M. R. (2021). Social isolation and its impact on child and adolescent development: a systematic review. Revista paulista de pediatria : orgao oficial da Sociedade de Pediatria de Sao Paulo, 40, e2020385. https://doi.org/10.1590/1984-0462/2022/40/2020385.

[4] Richtel, M. (2021, December 7). Surgeon General Warns of Youth Mental Health Crisis. The New York Times. https://www.nytimes.com/2021/12/07/science/pandemic-adolescents-depression-anxiety.html#:~:text=The%20United%20States%20surgeon%20general.

There are many reasons why youth are experiencing this crisis today, and it is likely that there are simultaneous contributors to the outcomes presented above. Today, we are here to talk about whether youths' engagement with technology (i.e., now including social media, AI, and smart devices), may be a relevant factor. Many psychological scientists, including myself and my colleagues, have been asking this same question for years. We seek to understand how this new context in which youths' social interactions occur may be related to development, including potential benefits or risks that may be conferred by the online environment. As the discipline with expertise on all of human behavior, our work has been broad in scope; and to date, our focus has been on the adolescent period, during which more complex and mature behaviors are developed through intricate and precise interactions among neural, biological, social, contextual, and social systems. Today, although this remains a relatively nascent body of research, I would like to share what we know so far, so policymakers, educators, parents, caregivers, and youth can learn from what we are beginning to discover and make choices that will ensure the safety of youth.

In this testimony, I outline emerging research with findings that have begun to suggest possible benefits, and as well as possible adverse effects of technology on adolescent development. I also present legislative and regulatory solutions that if enacted, would represent positive steps towards learning more about, and hopefully solving this problem. I am calling for new legislation and regulations that increase research funding and provide education on how children can use technology without experiencing the most harmful impacts; legislation that creates a requirement that social media and AI companies protect the well-being of child users; legislation that prohibits problematic business practices and prevents companies from tricking and manipulating users; and bills that provide more leverage for government regulators to clamp down on known harmful impacts while building internal expertise to prepare to tackle newly discovered harms. APA supported these efforts in the past and commits to work to see these proposals enacted because, as I present below, scientific data are beginning to suggest areas of serious concern that must not be allowed to continue unchecked.

In 2023, I cautioned that causal data were largely unavailable to address many of the questions regarding technology and youth mental health. Today, emerging causal data (i.e., from

randomized clinical trials), albeit imperfect, has begun to demonstrate that young people randomly selected to withdraw from social media platforms show improvements in mental health as compared to those randomly selected to use these platforms as usual.[5] Since 2023, numerous tragic examples of youth who have ended their lives due to interactions or even explicit instructions received within online platforms also have proliferated. The time to act is now.

It also is important to acknowledge that technology may not affect all youth in the same way, and new research is helping to better explicate what specific features and functions may present benefit or risk.[6] Extensive research has demonstrated that the amount of screentime alone is not consistently associated with negative psychological outcomes among youth [7]. A more appropriate question is: what specific online *behaviors, features, or content* may be associated with benefit or risk to which youth. This is the focus of the most recent work among psychological scientists, yielding some comforting, but also some worrying results. In short, research now has adequately demonstrated that it is not merely the content conveyed within social media and AI platforms that presents possible risk, but specifically the architecture of the platforms themselves (e.g., including likes, comments, notifications, beauty-filters, AI-generated content, and algorithmically promoted suggested content) that is responsible for harms to youth well-being.[8]

But first, to understand the role of technology in youths' development, it is necessary to understand the role of social interactions more generally at this critical developmental stage.

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[5] *see* meta-analysis by Burnell, K., Meter, D. J., Andrade, F. C., Slocum, A. N., & George, M. J. (2025). The effects of social media restriction: Meta-analytic evidence from randomized controlled trials. SSM-Mental Health, 7, 100459.

[6] Maheux, A. J., Burnell, K., Maza, M. T., Fox, K. A., Telzer, E. H., & Prinstein, M. J. (2025). Annual Research Review: Adolescent social media use is not a monolith: toward the study of specific social media components and individual differences. Journal of Child Psychology and Psychiatry, 66(4), 440-459; American Psychological Association. (2024, April). *Potential risks of content, features, and functions: The science of how social media affects youth*. https://www.apa.org/topics/social-media-internet/youth-social-media-2024.

[7] Odgers CL, Jensen MR. Annual Research Review: Adolescent mental health in the digital age: facts, fears, and future directions. J Child Psychol Psychiatry. 2020;61(3):336-348. doi:10.1111/jcpp.13190.

[8] Maheux, A. J., Burnell, K., Maza, M. T., Fox, K. A., Telzer, E. H., & Prinstein, M. J. (2025). Annual Research Review: Adolescent social media use is not a monolith: toward the study of specific social media components and individual differences. Journal of Child Psychology and Psychiatry, 66(4), 440-459; e.g., Sherman, L. E., Greenfield, P. M., Hernandez, L. M., & Dapretto, M. (2018). Peer influence via Instagram: Effects on brain and behavior in adolescence and young adulthood. Child development, 89(1), 37-47.

Children's interactions with peers are not merely for fun. It is within the social context that most children's education occurs; thus, peer interactions significantly affect cognitive development. The peer context also is the milieu in which children learn social rules, norms, and expectations; develop emotional competence and morality; and in which all of children's behaviors are consistently reinforced (or corrected), thus influencing long-term behavioral development. Indeed, numerous studies have revealed that children's interactions with peers have enduring effects on their occupational status, salary, relationship success, emotional development, mental health, and even on physical health and mortality over 40 years later [9]. These effects are stronger than the effects of children's IQ, socioeconomic status, and educational attainment. These enduring effects likely occur because of remarkably powerful and reciprocal interactions between youths' social experiences and their biological development. Children's brains and peripheral nervous systems influence how they interact with peers, and in turn, those experiences change the development of their brain structures, neural pathways, and even how their nervous system responds to stress throughout their lives.

Our brains, our bodies, and our society have been evolving together to shape human development for millennia, influencing our communities, our culture, and our society. Within the last twenty years, the advent of portable technology and social media platforms is changing what took 60,000 years to evolve. We are just beginning to understand how this may impact youth development.

This is not only true for social interactions among school-aged children and adolescents, but also among young children. Extensive research has demonstrated that human-human interaction is the most foundational cornerstone for healthy brain, language, cognitive, and socioemotional development among infants and toddlers.[10] This is especially true during the first 3-4 years of life when the brain is undergoing the most profound growth and organization of our

[9] For a review, see; Prinstein, M. J., & Giletta, M. (2020). Future Directions in Peer Relations Research. Journal of Clinical Child & Adolescent Psychology, 49(4), 556–572. https://doi.org/10.1080/15374416.2020.1756299.

[10] Fearon, R.M.P., Groh, A.M., Bakermans-Kranenburg, M.J., van IJzendoorn, M.H. and Roisman, G.I. (2016). Attachment and Developmental Psychopathology†. In Developmental Psychopathology, D. Cicchetti (Ed.). https://doi.org/10.1002/9781119125556.devpsy108; Grusec, J. E., & Hastings, P. D. (Eds.). (2015). Handbook of socialization: Theory and research. Guilford Press.

lifetimes. This process of brain growth is dependent on subtle and nuanced responses that young children receive verbally and nonverbally from humans, most often their caregivers – importantly, in ways that cannot be adequately mimicked by technology (e.g., AI chatbots) at the current time.

I will first discuss the potential effects of technology use on youth mental health. This will include an outline of five main issues emerging from the research, including the risks of pre-adulthood use of social media and AI, the ramifications that come from unmonitored (and "liked") content online, the potential effects of digital stress, the encouragement of social comparisons, and research demonstrating benefits of technology use among youth. In the following section, I will discuss the psychological effects of opportunities lost while youth spend time online. Last, I will discuss phone use in schools, potential solutions and policy recommendations.

Technology Use and Youth Mental Health

Pre-adulthood use of technology may be particularly concerning. There is reason to be significantly concerned about the age at which many youth begin using technology and social media. Developmental neuroscientists have revealed that there are two highly critical periods for adaptive neural development. Aberrations in our brain growth during these periods may have lifetime implications. One of these is the first year of life. The second begins at the outset of puberty and lasts until early adulthood (i.e., from approximately 10 to 25 years old). This latter period is highly relevant, as this is when a great number of youths are offered relatively unfettered access to devices and unrestricted or unsupervised use of social media and other online platforms [11]. Within the age range of 10-25 years, change occurs gradually and steadily; thus risks likely are greater towards the beginning of this range and become attenuated as youth mature. Herein, this period is referred to as "pre-adulthood."

At the outset of puberty, adolescents' brains begin developing in a specific, pre-determined sequence. Generally, sub-cortical areas shared with many mammalian species mature before areas at the top layer of the brain, which is responsible for many of our more human capabilities, such

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[11] Vogels, E. A., Gelles-Watnick, R., & Massarat, N. (2022, August 10). Teens, social media and technology 2022. Pew Research Center. https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/.

as premeditation, reflection, and inhibition. Among these initial areas developing among most youth, typically starting at the ages of 10-12 years old, are regions associated with our craving for "social rewards," such as visibility, attention, and positive feedback from peers. In contrast, regions involved in our ability to inhibit our behavior, and resist temptations (i.e., the prefrontal cortex) do not fully develop until early adulthood (i.e., approximately 10-15 years later). In other words, when it comes to youths' cravings for social attention, they are "all gas pedal with no brakes." Adolescence is thus a developmentally vulnerable period during which youth may be especially motivated to pursue social rewards, and not yet fully capable of restraining themselves.

Research suggests that technology use may exploit this biological vulnerability among youth. Data reveal that social media stimuli, such as receiving "likes" or followers activates the social reward regions of the brain [12]. In other words, these features of social media capitalize on youths' biologically based need for social rewards before they are able to regulate themselves from over-use. Similarly, AI chatbots sycophantic nature likely increases youth engagement by activating this same neural circuitry. This has at least four significant implications for youth mental health.

Social Media and Loneliness. Although ostensibly social media platforms are built to foster interpersonal contacts and connections, they are not designed primarily to foster meaningful and mutually rewarding relationships that confer psychological benefits. Relationships are most beneficial to youths' psychological development when they are characterized by support, emotional intimacy, disclosure, positive regard, reliable alliance (e.g., "having each other's backs"), and trust [13]. It is possible to use social media to foster exactly these types of relationship qualities, such as through direct messaging features. However, these are not the functions that are highlighted on most platforms. More typically, users are directed towards the number of "likes," followers, or reposts they received, often without immediate access to the identity of those who

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[12] Sherman, L. E., Hernandez, L. M., Greenfield, P. M., & Dapretto, M. (2018). What the brain 'Likes': neural correlates of providing feedback on social media. Social cognitive and affective neuroscience, 13(7), 699–707. https://doi.org/10.1093/scan/nsy051.

[13] Furman, W., Bukowski, W. M., Newcomb, A. F., & Hartup, W. W. (1996). The company they keep: Friendship in childhood and adolescence. Cambridge studies in social and emotional development. In W. Bukowski., A. Newcomb & W. Hartup (Eds), The measurement of friendship perceptions: Conceptual and methodological, (41-65).

engaged with their profile or content. In other words, platforms are more apt to motivate users towards one's metrics than people themselves, which has led many youth to upload curated or filtered content to portray themselves most favorably. Note that these features of social media, and the resulting behaviors of those who use social media create the exact opposite qualities needed for successful and adaptive relationships (i.e., disingenuous, anonymous, depersonalized). In other words, social media offers the "empty calories of social interaction," that appear to help satiate our biological and psychological needs, but do not contain any of the healthy ingredients necessary to reap benefits. Anecdotally, teens' behavior reflects this issue – the "Finsta" phenomenon reflects digital natives' attempt to find more honest and intimate relationships with one another, but without experience in doing so first offline. Scientific data also support this claim; research reveals that in the hours following social media use, teens paradoxically report *increases* rather than decreases in loneliness [14].

Heightened Risk for Negative Peer Influence. Adolescents frequently are exposed to content online depicting illegal, immoral, dangerous, and unethical behavior. The architecture of many social media platforms allows users to like, repost, or comment on this content. Emerging data suggest that these features of social media present a significant risk to adolescents' mental health. Specifically, data reveal that social media may change adolescents' susceptibility to maladaptive behavior through both biological and psychological pathways. Research examining adolescents' brains while on a simulated social media site, for example, revealed that when exposed to illegal, dangerous imagery, activation of the prefrontal cortex was observed suggesting healthy inhibition towards maladaptive behaviors. However, when these same images were shown with icons indicating that they were "liked" on social media, there was a significant decrease in activation of the brain's imbibition center, suggesting that the "likes" may reduce youths' inhibition (i.e., perhaps increasing their proclivity) towards dangerous and illegal behavior.[15] This is evidence that platform features are changing how youths' brains respond to images in ways that confer risk for the development of maladaptive behavior.

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[14] Armstrong-Carter, E., Garrett, S. L., Nick, E. A., Prinstein, M. J., & Telzer, E. H. (2022). Momentary links between adolescents' social media use and social experiences and motivations: Individual differences by peer susceptibility. Developmental Psychology. Advance online publication. https://doi.org/10.1037/dev0001503.
[15] See for example, Sherman, L. E., Hernandez, L. M., Greenfield, P. M., & Dapretto, M. (2018). What the brain 'Likes': neural correlates of providing feedback on social media. Social cognitive and affective neuroscience, 13(7), 699–707. https://doi.org/10.1093/scan/nsy051.

There also is evidence that these features of social media may promote a psychological affinity for dangerous and risk-taking behavior. For instance, a study of young high school students revealed that adolescents' exposure to "liked" posts depicting alcohol use was associated with changes in teens' perceptions of their peers' acceptance of alcohol use, which in turn predicted these same teens' early engagement in heavy episodic drinking (i.e., five or more drinks on a single occasion) [16]. Related research has demonstrated that individuals are more likely to "like" a post that they see others have "liked" before them, and this may increase the likelihood of exposure to similarly themed-posts, via AI-derived algorithms [17]. These findings illustrate clear and powerful ways that the features embedded in social media platforms may have an important and highly concerning effect on youth mental health. Note, it is also possible that these same processes can be used to influence peers towards positive behaviors; however, this has not been adequately investigated.

Risks for Addictive Social Media Use. Youths' biological vulnerabilities also have significant implications for "problematic social media use" or addictive behaviors; note that the regions of the brain activated by social media use overlap considerably with the regions involved in addictions to illegal and dangerous substances [18]. As noted above, the developing brain is built to increase a desire for social rewards (that social media delivers abundantly), without the ability to show the capacities of inhibition and restraint capable among adults. This suggests that youth may be at risk for extraordinarily frequent uses of social media. Several bodies of research reveal that this indeed may be a very significant concern. For instance, data suggest that almost half of

[16] Nesi J, Rothenberg WA, Hussong AM, Jackson KM. Friends' Alcohol-Related Social Networking Site Activity Predicts Escalations in Adolescent Drinking: Mediation by Peer Norms. J Adolesc Health. 2017;60(6):641-647. doi:10.1016/j.jadohealth.2017.01.009.

[17] Egebark J, Ekström M. Liking what others "Like": using Facebook to identify determinants of conformity. Exp Econ. 2017;21(4):1-22. doi:10.1007/s10683-017-9552-1.

[18] De-Sola Gutiérrez, J., Rodríguez de Fonseca, F., & Rubio, G. (2016). Cell-Phone Addiction: A Review. Frontiers in Psychiatry, 7(175). https://doi.org/10.3389/fpsyt.2016.00175; Griffiths, M. D., Kuss, D. J., & Demetrovics, Z. (2014). Social networking addiction: An overview of preliminary findings. In K. P. Rosenberg & L. Curtiss Feder (Eds.), Behavioral addictions: Criteria, evidence, and treatment (pp. 119–141). Elsevier Academic Press. https://doi.org/10.1016/B978-0-12-407724-9.00006-9; Kirby, B., Dapore, A., Ash, C., Malley, K., & West, R. (2020). Smartphone pathology, agency and reward processing. Lecture Notes in Information Systems and Organisation, 321-329. https://doi.org/10.1007/978-3-030-60073-0_37.

all adolescents report that they use social media "almost constantly" [19]. Research also has compared social media use to diagnostic criteria for substance use dependencies, revealing that many adolescents report an inability to stop using social media, even when they want to, remarkable efforts to maintain access to social media, the use of social media to regulate their emotions, a need for increasing social media use to achieve the same level of pleasure (i.e., tolerance symptoms), withdrawal symptoms following abstinence, an significant impairment in their daily educational, social, work routines. A recent study revealed that over 54% of 11– 13-year-old youth reported at least one of these symptoms of problematic social media use [20]. About 85% of youth report spending more time than intended online and 61% reporting failing when trying to stop or reduce their use of social media [21].

Alterations in Brain Development. Youths' biological vulnerability to technology and social media, and their resulting frequent use of these platforms, also has the potential to alter youths' neural development since our brains develop in response to the environment we live in. Recent studies have revealed that technology and social media use is associated with changes in structural brain development (i.e., changing the size and physical characteristics of the brain). In addition, research with my own colleagues at the University of North Carolina at Chapel Hill recently has revealed that technology and social media use also is associated with changes in how the brain works). Our data has revealed that youth indeed spend a remarkable amount of time using their devices [22]. Objective data measured by teens' phones themselves indicated that the average number of times that youth in sixth grade picked up their phones was over 100, with some interrupting daily activities to pick up their phones over 400 times a day. On average, adolescents also reported an average of 8.2 hours of time on their devices each day, with some logging double

[19] Vogels, E. A., Gelles-Watnick, R., & Massarat, N. (2022, August 10). Teens, social media and technology 2022. Pew Research Center. https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/.
[20] Boer M, Stevens GWJM, Finkenauer C, van den Eijnden RJJM. The course of problematic social media use in young adolescents: A latent class growth analysis. Child Dev. 2022;93(2):e168-e187. doi:10.1111/cdev.13712
[21] The Common Sense Census: Media Use by Tweens and Teens. (2021). https://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf.
[22] Armstrong-Carter, E., Garrett, S. L., Nick, E. A., Prinstein, M. J., & Telzer, E. H. (2022). Momentary links between adolescents' social media use and social experiences and motivations: Individual differences by peer susceptibility. *Developmental psychology*.

this amount [23]. The phone "apps" adolescents picked up their devices to use most often were popular social media platforms. Our research using annual fMRI brain scans revealed that more frequent uses of adolescents' devices (i.e., predominantly for social media) was associated with changes in how their brains developed. More phone "pickups" were associated with unique development of brain regions. In short, results found that high social media users may have promoted brain development in a way that may make adolescents more inclined to focus on social rewards (e.g., attention from peers) and altered self-control [24].

Youth's Exposure to Unmonitored, Manufactured, or Deceptive Content Poses Potential Risks. There are several domains of problematic content online that many youth are exposed to. Research demonstrates that this also likely contributes to mental health difficulties among children and adolescents. One domain pertains to content that actively showcases and promotes engagement in psychologically disordered behavior, such as sites that discuss eating disordered behaviors (i.e., "pro-Anna" sites that encourage fasting, laxative use, excessive exercise) and pro-cutting sites depicting nonsuicidal self-injury [25]. Research indicates that this content has proliferated on social media sites, not only depicting these behaviors, but teaching young people how to engage in each, how to conceal these behaviors from adults, actively encouraging users to engage in these behaviors, and socially sanctioning those who express a desire for less risky behavior [26]. Moreover, in some cases this content is not removed nor are trigger warnings included to protect vulnerable youth from the effects that exposure to this content can have on their own behavior. This underscores the need for platforms to deploy tools to filter content, display warnings, and create reporting structures to mitigate these harms.

A second area of concern regarding online content pertains to the frequency of online discrimination and cyberbullying, including youths' posts that encourage their peers to attempt suicide. Research demonstrates that online victimization, harassment, and discrimination against

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[23] Maza MT, Fox KA, Kwon S-J, et al. Association of habitual checking behaviors on social media with longitudinal functional brain development. JAMA Pediatr. 2023;177(2):160-167. doi:10.1001/jamapediatrics.2022.4924.

[24] See above.

[25] Lewis, S. P., Heath, N. L., St Denis, J. M., & Noble, R. (2011). The scope of nonsuicidal self-injury on YouTube. Pediatrics, 127(3), e552–e557. https://doi.org/10.1542/peds.2010-2317.

[26] Whitlock JL, Powers JL, Eckenrode J. The virtual cutting edge: the internet and adolescent self-injury. Dev Psychol. 2006 May;42(3):407-17. doi: 10.1037/0012-1649.42.3.407. PMID: 16756433.

racial, ethnic, gender, and sexual minorities is frequent online and often targeted at young people [27]. LGBTQ+ youth experience a heightened level of bullying, threats, and self-harm on social media. One in three young LGBTQ+ people have said that they had been sexually harassed online, four times as often as other young people [28]. Brain scans of adults and youths reveal that online harassment activates the same regions of the brain that respond to physical pain and trigger a cascade of reactions that replicate physical assault and create physical and mental health damage [29]. Moreover, research has revealed that online discrimination often is harsher and more severe than offline discriminatory experiences. Results reveal that the effects of online discrimination and bullying on youths' risk for depression and anxiety are significant above and beyond the effects of experiences that these same youth experience offline. The permanence, potential for worldwide dissemination, anonymity, and the like, repost, and comment features afforded on most social media platforms seem to contribute to youths' mental health difficulties. As with other forms of harassment and associated harms, new policies and processes are needed to blunt the impact of these harms.

AI Chatbots offers new areas of concern by exposing youth to deceptive content often designed to simulate human relationships in potentially damaging ways that are unique and perhaps even more concerning than the risks conferred by social media use. Unlike social media, AI often is invisible. Many of us do not know when we are engaged with AI, when we are interacting with a chatbot rather than a human, or when AI is working "behind the scenes" to alter the interactions we are having. Second, AI has proliferated so rapidly that most parents have no idea, or personal experience with the AI platforms or chatbots engaging with their children. Without a frame of reference for understanding AI, children often navigate these relationships with little to no supervision.

[27] Moreno, M. A., Chassiakos, Y. R., Cross, C., Hill, D., Ameenuddin, N., Radesky, J., Hutchinson, J., Boyd, R., Mendelson, R., Smith, J., Swanson, W. S., & Media, C. C. (2016). Media use in school-aged children and adolescents. Pediatrics, 138(5). https://doi.org/10.1542/peds.2016-2592; Tynes, B. M., Giang, M. T., Williams, D. R., & Thompson, G. N. (2008). Online racial discrimination and psychological adjustment among adolescents. Journal of Adolescent Health, 43(6), 565-569. https://doi.org/10.1016/j.jadohealth.2008.08.021.

[28] Out Online: The Experiences of LGBT Youth on the Internet. (2013). GLSEN. https://www.glsen.org/news/out-online-experiences-lgbt-youth-internet.

[29] Cannon, D. S., Tiffany, S. T., Coon, H., Scholand, M. B., McMahon, W. M., & Leppert, M. F. (2007). The PHQ-9 as a brief assessment of lifetime major depression. Psychological Assessment, 19(2), 247-251. https://doi.org/10.1037/1040-3590.19.2.247.

Evidence suggests that relationships with AI chatbots can be obsequious, deceptive, factually inaccurate, yet disproportionally powerful for teens.[30] Capitalizing on neural vulnerabilities described above, adolescents' extended engagement with AI chatbots is fueled by incessant agreement, positive feedback, and reinforcement of adolescents' own ideas. Among those who are biologically programmed to have increased craving for social rewards (i.e., attention and endorsement among peers) the obsequious nature of chatbots fuels teens to remain engaged for as long as possible. This is especially concerning in that for many teens, this creates a cycle. Adolescents who may lack skills for successful human relationships retreat to the "safety" of a bot, depriving them of skill building needed to improve with humans, experience human rejection and retreat to bots, and so on. This cycle is particularly concerning given the prevalence of AI companionship apps, which preliminary data suggest account for over 40% of the AI apps children use.[31] While some research with adults suggests AI companions can reduce loneliness in the short term, other longitudinal work indicates that while loneliness may prompt their use, it ultimately exacerbates these feelings over time. Cross-sectional research with adolescents consistently shows a positive association between using AI for companionship and greater loneliness, as well as worse overall mental health.[32]

The harms of AI also include the misuse of private data and an individual's likeness. For instance, confidential health data and intimate disclosures shared with chatbots are actively collected to build detailed psychological profiles for unintended purposes, such as hyper-targeted advertising or political manipulation.[33] In addition to misusing private data, generative AI makes

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[30] Cheng, M., Yu, S., Lee, C., Khadpe, P., Ibrahim, L., & Jurafsky, D. (2025). Social sycophancy: A broader understanding of LLM sycophancy. arXiv preprint arXiv:2505.13995.

[31] Maheux, A. J., Akre-Bhide, S., Boeldt, D., Flannery, J. E., Richardson, Z., Burnell, K., Telzer, E. H., & Kollins, S. H. (2025). *Generative AI app use among US youth* [Unpublished manuscript]. Department of Psychology and Neuroscience, University of North Carolina at Chapel Hill.

[32] Maheux, A. J., Maes, C., & Buck, B. (2025). *GenAI in the lives of young adults: Exploring motivations and mental health* [Unpublished manuscript]. Department of Psychology and Neuroscience, University of North Carolina at Chapel Hill.

[33] Harris, K. R. (2021). Video on demand: What deepfakes do and how they harm. Synthese, 199, 13373–13391. https://doi.org/10.1007/s11229-021-03379-y; Thiel, D., Stroebel, M., & Portnoff, R. (2023). Generative ML and CSAM: Implications and mitigations. Stanford Digital Repository. Available at https://purl.stanford.edu/jv206yg3793. https://doi.org/10.25740/jv206yg3793; Christensen, L. S., Moritz, D., & Pearson, A. (2021). Psychological perspectives of virtual child sexual abuse material. Sexuality & Culture, 25, 1353–1365. https://doi.org/10.1007/s12119-021-09820-1.

it terrifyingly easy to weaponize an individual's very likeness. The non-consensual creation of "deepfakes," particularly for use in synthetic pornography, inflicts profound and lasting psychological trauma. Victims report overwhelming feelings of humiliation, violation, and a complete loss of control over their identity. This is not a future threat; it is a clear and present danger disproportionately targeted at women and children. The technology has advanced to the point where only a single photograph, such as one from a social media profile, is needed to create such abusive content, making every young person online a potential target.

The Potential Effects of Digital Stress. Social media and AI platforms frequently include a variety of features designed to maintain users' engagement online, or encourage users to return to the app. Psychological theory and research have begun to reveal that this has become a significant source of stress. This is highly relevant since stress is one of the strongest predictors of children's and adolescents' mental health difficulties, including suicidal behavior. "Digital stress," is characterized by a youth's a) connection overload (i.e., notification and implicit social requirements to participate on social media platforms), b) the fear of missing out on conversations and other social interactions taking place exclusively online, c) the need to remain constantly available to others online, and d) approval anxiety (i.e., concerns about the response to one's own posts) are each notable factors influencing the way youth think about their connection to online platforms [34]. Nearly half of all young people participating in online platforms report experiencing digital stress. Research demonstrates that higher levels of digital stress are associated with greater increases in depressive symptoms among adolescents [35].

Social Media Encourages Social Comparisons. The quantitative nature of social media, combined with the use of visual stimuli, creates a fertile ground for social comparisons. Adolescence, a period defined by psychologists as a process of identity development via reflected appraisal processes (i.e., evaluating oneself based on feedback from peers) are especially likely to

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[34] Steele, R. G., Hall, J. A., & Christofferson, J. L. (2020). Conceptualizing Digital Stress in Adolescents and Young Adults: Toward the Development of an Empirically Based Model. Clinical child and family psychology review, 23(1), 15–26. https://doi.org/10.1007/s10567-019-00300-5.

[35] Nick, E. A., Kilic, Z., Nesi, J., Telzer, E. H., Lindquist, K. A., & Prinstein, M. J. (2022). Adolescent Digital Stress: Frequencies, Correlates, and Longitudinal Association With Depressive Symptoms. The Journal of adolescent health : official publication of the Society for Adolescent Medicine, 70(2), 336–339. https://doi.org/10.1016/j.jadohealth.2021.08.025.

engage with social media in ways that allow them to compare their appearance, friends, social activities with others with what they see online, especially when those in their own social network are commenting and "liking" these same posts. The opportunity for constant feedback, commentary, quantitative metrics of approval, and 24-hour social engagement is unprecedented among our species. Research suggests that these social comparison processes, and youths' tendency to seek positive feedback or status (i.e., more "likes," followers, online praise) is associated with a risk for depressive symptoms [36]. In addition, psychological science demonstrates that exposure to this online content is associated with lower self-image and distorted body perceptions among young people. This exposure creates strong risk factors for eating disorders, unhealthy weight-management behaviors, and depression [37]. As with other impacts of online platforms, evidence indicates that these body image issues are particularly prevalent in LGBTQ+ youth. Leaving these youth more predisposed to eating disorders, depression, bullying, substance abuse and other mental health harms.

Potentially Beneficial Effects of Social Media Use. It is important to acknowledge that research on social media use and adolescent development is relatively new, as are many social media platforms. In addition, there has been remarkably little funding designated for research on this topic. Consequently, the long-term effects of social media use on youth development is relatively uncharted. For instance, above I discussed some of the potential effects of technology social media use on brain development. Yet, it is unknown whether adolescent brain development, known for its plasticity, may "correct" some of the alternations in brain structure or function, whether compensatory neural processes may develop, or whether these alterations may confer unknown future strengths.

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In addition, there is some research demonstrating that social media use is linked with positive outcomes that may benefit psychological development among youth. Perhaps most notably, psychological research suggests that young people form and maintain friendships online. These relationships often afford opportunities to interact with a more diverse peer group than offline, and the relationships are close and meaningful and provide important support to youth in times of stress [38]. The buffering effects of social support from peers has been well documented in the psychological literature [39]. This may be especially important for youth with marginalized identities, including racial, ethnic, sexual, and gender minorities. Digital platforms provide an important space for self-discovery and expression for LGBTQ+ youth.

Research also suggests that during the COVID-19 lockdown from 2020-2021, the use of one-on-one (i.e., direct messaging) on social media and sharing funny content reduced stress among youth . There also is some evidence that youth are more likely to engage in civic activism online than off [40].

A growing area of research has also focused on the use of youths' interest in online activities as an opportunity for digital-based intervention [41]. Adolescents report high levels of comfort with, and a preference for, online communication, especially when discussing mental health. Studies also show that adolescents commonly use the internet for mental health information

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https://www.pewresearch.org/internet/2018/11/28/teens-friendships-and-online-groups/; Charmaraman L, Hodes R, Richer AM. Young Sexual Minority Adolescent Experiences of Self-expression and Isolation on Social Media: Cross-sectional Survey Study. JMIR Ment Health. 2021;8(9):e26207. doi:10.2196/26207; Massing-Schaffer M, Nesi J, Telzer EH, Lindquist KA, Prinstein MJ. Adolescent Peer Experiences and Prospective Suicidal Ideation: The Protective Role of Online-Only Friendships. J Clin Child Adolesc Psychol. 2022;51(1):49-60. doi:10.1080/15374416.2020.1750019; Marciano L, Ostroumova M, Schulz PJ, Camerini A-L. Digital Media Use and Adolescents' Mental Health During the Covid-19 Pandemic: A Systematic Review and Meta-Analysis. Front Public Health. 2021;9:793868. doi:10.3389/fpubh.2021.793868; Baskin-Sommers A, Simmons C, Conley M, et al. Adolescent civic engagement: Lessons from Black Lives Matter. Proc Natl Acad Sci USA. 2021;118(41). doi:10.1073/pnas.2109860118.
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[42]. These elements, taken together, present the possibility that digital modes of treatment and other health interventions may be particularly effective for young people.

Research into the field of digital mental health interventions is growing and the existing information is heavily skewed toward more established modalities (e.g., telehealth, online/web-based interventions). Evidence supports the use of videoconferencing as an effective form of treatment for youth mental health across a range of problems [43]. While many computerized programs and internet-based treatment programs were found to be of moderate to high quality, a systematic review of the literature found that the inclusion of a therapist or clinician improved outcomes in adolescents with depression and anxiety over those that were self-paced [44]. Young people with a history of suicidal ideation often prefer to initially seek and receive healthcare online [45]. Even when individuals have strong support systems offline, they may struggle to access that support in times of need [46]. Early indications that online support may be appealing because of its immediate nature and because the interactions are among peers with shared experience and experiential knowledge [47]. As indicated in our recent health advisory on the use of generative AI

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chatbots and wellness applications for mental health, it is crucial for young people to have access to in-person screenings and clinician support. [48]

Psychological Effects of Lost Opportunities While Youth Are Online

Every hour youth spend online is an hour that is not being spent on alternative ("in real life") activities. In some cases, this may protect adolescents' exposure to peer contexts in which substance use and sexually risky behaviors occur. However, youths' online activities also may preclude engagement in activities necessary for successful maturation and psychological adaptation. Perhaps most concerning is the extent to which research has demonstrated that technology and social media use is interfering with youths' sleep.

Research has supported the link between technology use and sleep in several ways. Perhaps most compelling are data from meta-analyses (i.e., a statistical integration of findings from across an entire body of research) indicating that 60% of adolescents report using technology in the hour before bedtime, and more screen time is associated with poorer sleep health and failure to meet sleep duration requirements set by the American Academy of Sleep Medicine, partly due to delayed melatonin release, delayed bedtimes, and increases in overstimulation and difficulty disengaging from online social interactions. Interventions to reduce nighttime screen use are successful in increasing sleep duration [49].

This has critical implications for adolescent development. Research suggests that insufficient sleep is associated with poor school performance, difficulties with attention, stress regulation, and increased risk for automobile accidents. Neuroscientific research has demonstrated that inconsistent sleep schedules are associated with changes in structural brain development in

young people: The good, the bad and the unknown. PLOS ONE, 12(8), e0181722. https://doi.org/10.1371/journal.pone.0181722; Thoits, P. A. (2011). Mechanisms Linking Social Ties and Support to Physical and Mental Health. Journal of Health and Social Behavior, 52(2), 145–161. https://doi.org/10.1177/0022146510395592.

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adolescent years. In other words, youths' preoccupation with technology may deleteriously affect the size of their brains [50].

Last, it is critical to note that the problems of youths' use of technology due to missed developmental opportunities are expanding. Adolescents' use of AI technologies, and perhaps especially chatbots, has expanded dramatically over the past 2-3 years 22. Over half of all US adolescents over the age of 13 now use generative AI, and between 10-20% under 13 years (i.e., for whom the platforms are supposed to be restricted) use generative AI on their devices, despite the use of parental controls or the use of monitoring apps. Consequently, and highly concerning, emerging research suggests that children and adolescents are more likely to divulge information to AI than to trusted adults and are more likely to trust information received from AI than from their own parents and teachers. [51]

Phone Use in Schools

More data are needed to understand precisely which policies (e.g., bell-to-bell, use of pouches, screen-free school zones, etc) are most likely to attenuate the potential risks and magnify the potential benefits of phone use in schools. The scientific literature offers several preliminary findings. First, we know that youth use personal smart devices in school, and they use it quite often. Recent data suggest that youth aged 16-17 years spend an average of 20 or more minutes of each hour during the school day on their devices; and during this time they are predominantly using social media and generative/companion AI platforms. [52]

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[50] Achterberg M, Becht A, van der Cruijsen R, et al. Longitudinal associations between social media use, mental well-being and structural brain development across adolescence. Dev Cogn Neurosci. 2022;54:101088. doi:10.1016/j.dcn.2022.101088.

[51] Maes, C., Maheux, A. J., & Telzer, E. H. (2024). A longitudinal investigation of adolescent social media use and mental health. *Computers in Human Behavior*, *156*, 108223. https://doi.org/10.1016/j.chb.2024.108223; Masten, A. S., & Cicchetti, D. (2025). Developmental considerations and practical recommendations for parents and early childhood educators. In *Stanford University, Social Science Research Council, & The Jacobs Foundation, Understanding and supporting children's learning in the first eight years of life* (pp. 1–9). https://publicscholarship.stanford.edu/sites/default/files/2025-01/Developmental%20Considerations%20and%20Practical%20Recommendations%20for%20Parents%20and%20Early%20Childhood%20Educator.pdf.

[52] Burnell, K., Maheux, A. J., Shapiro, H., Flannery, J. E., Telzer, E. H., & Kollins, S. H. (2025). Smartphone Engagement During School Hours Among US Youths. JAMA Network Open, 8(8), e2523991-e2523991.

Second, we know that device use likely obstructs learning. Early studies show that when youth are engaging in schoolwork, they often are doing so alongside the use of social media platforms, a phenomenon called "media multitasking"[53]. Research clearly demonstrates that most humans cannot multitask, but rather are rapidly task-shifting – a process associated with poorer memory and comprehension among youth[54]. Evidence shows that these phenomena only worsen with heavier use of social media, with more common symptoms such as mind wandering and higher levels of impulsivity among young adults who use social media more frequently[55].

Third, we know that device use in school does not only affect the device owner, but also others. One study not surprisingly demonstrated that those using a device for Internet scrolling during class scored more poorly on academic testing. More surprising, however, was that device use was also associated with lower grades among the students sitting behind the device owner.[56] Secondhand screentime effects thus have the potential to detrimentally affect academic progress for an entire classroom.

Potential Solutions and Policy Implications

[53] Jeong, S.-H., & Hwang, Y. (2012). Does Multitasking Increase or Decrease Persuasion? Effects of Multitasking on Comprehension and Counterarguing. Journal of Communication, 62(4), 571–587. https://doi.org/10.1111/j.1460-2466.2012.01659.x; van der Schuur, W. A., Baumgartner, S. E., Sumter, S. R., & Valkenburg, P. M. (2015). The consequences of media multitasking for youth: A review. Computers in Human Behavior, 53, 204–215. https://doi.org/10.1016/j.chb.2015.06.035; L. Mark Carrier, Larry D. Rosen, Nancy A. Cheever, Alex F. Lim, Causes, effects, and practicalities of everyday multitasking, Developmental Review (2015), doi: 10.1016/j.dr.2014.12.005.

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The internet and the introduction of social media and AI platforms have literally changed our species through new forms of social interaction, new rules for discourse, the rapid spread of information, and concomitant changes in the types of relationships that previously had defined the human race for millennia. This is an extraordinarily high priority area for additional scientific research; however, this work has been woefully underfunded. Currently, government agencies lack both the direction, expertise, and dedicated funding to adequately research both the positive and negative impacts of online platforms. Tech companies responsible for these platforms employ dozens of researchers focused on designing products and observing how users engage with them. Governments must match or exceed this commitment to ensure the public has an adequate understanding of how these platforms work and how users, especially children, are using these platforms and their impact. The research that is needed should be longitudinal to allow for long-term follow-up. Research should capture the experience of diverse samples, utilize the benefits of technology to capture objective measures of behavior, include technology (e.g., fMRI) to study biopsychosocial effects, and importantly, should make use of the data available to technology companies to fully understand the effects of these platforms and protect the common good. This effort must be paired with required increases in transparency and access to data for researchers to further understand online activity. New transparency and reporting requirements should ensure user privacy, while creating new mechanisms for researchers and policymakers to understand how these online spaces operate.

Such research also might address the role of algorithms and AI chatbot sycophancy on users' experience. This requires access to data for independent researchers to understand how algorithms work [57]. Social media companies employing algorithms to display content to users should take steps to provide explanations on how these technologies work and how they might drive or reward certain types of posts or behavior. Data from algorithms, along with internal research, should also be made public to allow researchers and policymakers to achieve a greater understanding of the impacts of social media on users, particularly children. Government agencies

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[57] Epps-Darling, A., Bouyer, R. T., & Cramer, H. (2020, October). Artist gender representation in music streaming. In Proceedings of the 21st International Society for Music Information Retrieval Conference (Montréal, Canada) (ISMIR 2020). ISMIR (pp. 248-254); Bravo, D. Y., Jefferies, J., Epps, A., & Hill, N. E. (2019). When things go viral: Youth's discrimination exposure in the world of social media. In Handbook of Children and Prejudice (pp. 269-287). Springer, Cham. https://doi.org/10.1007/978-3-030-12228-7_15.

should prioritize research into the impacts of technology and provide private researchers with grants and other support to ensure findings relating to these platforms are made broadly available.

There is much more policymakers and government agencies can do to provide education around how best to use online platforms to mitigate harmful impacts. A coalition of more than 150 organizations, led by APA, called on the Surgeon General to create and distribute resources dedicated to teaching children and caregivers about online social media use [58]. There is a clear need for an education campaign that enhances the public's understanding of the potential harms posed by social media and encourages caregivers and children to educate themselves with evidence-informed suggestions for its appropriate use. At the same time, it is important to acknowledge social media's potential to provide children with a healthy space for convening and companionship. While we recognize the need for additional research in this area, the very real harms of technology are impacting our children today, and more must be done to communicate and mitigate the impacts of online social media or AI use. Educating young users and their caregivers about how best to use the platforms to mitigate negative impacts is an essential intervention that can start today. A public education campaign should include information about the specific dangers social media poses to adolescents, how parents and caregivers can best navigate learning more about these dangers, how best to communicate the risks with their children, and ultimately how to educate their children on the best methods for using social media in a safe way.

APA also advocates for policymakers and government agencies to require social media and generative AI companies to do more to combat this issue. Platforms can create and provide new tools aimed at mitigating the harms associated with platform use. Requiring companies to provide children and their caregivers with options to make changes to their settings, or use dafety-by-default settings can promote mental health by protecting their information, disabling features that are particularly addictive, and opting out of algorithm processes that serve up problematic or harmful content. Technology companies can also be required to set defaults to address harms to young users.

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[58] (2023). Apaservices.org. https://www.apaservices.org/advocacy/news/surgeon-general-dangers-social-media

Warnings on harmful content should also be considered to reduce exposure of young people to content that may negatively impact their mental health or well-being and companies should be held accountable for the proliferation of this content. Social medial and AI companies should acknowledge known impacts of their platforms, providing warnings and resources to parents and caregivers of young users, develop plans to mitigate known harms, and determine whether these warnings and plans were effective, with iterative updates based on these findings. Social media and AI platforms must work to prevent and mitigate harmful content, such as promotion of self-harm, suicide, eating disorders, substance use and sexual exploitation. Independent audits can assess risks and determine whether platforms are taking meaningful steps to prevent damage and these must be paired with enforcement actions and accountability mechanisms for when platforms fail to effectively mitigate harms to children.

As discussed throughout this testimony, more must be done to specifically protect those children belonging to traditionally marginalized and minoritized communities. Mental health and other harms can disproportionately fall on LGBTQ+ youth, and resources should be dedicated to ensuring a reduction in these harms. More must be required of platforms to discourage and prevent cyberbullying and other forms of online hate and discrimination. Reporting structures should be more robust to allow for instances to be tracked and discouraged. Reforms to platform user experience should be prioritized to ensure members of these communities are protected from disproportionate harm.

APA is heartened by the focus on mental health in these Committees, and eager to work with this committee and its members to develop legislation and enact the bills cited above. Your actions now can make all the difference in how our young people interact with and are impacted by online spaces. Together, psychology, other scientific disciplines, parents, caregivers, teachers, tech companies, and policymakers can work to solve this serious problem. APA is a ready partner and looks forward to working with the committee to put in place critical changes to our current system that improve the lives of our children and the flourishing of online spaces.