

Exhibit 7

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA**

*PEOPLE OF THE STATE OF CALIFORNIA,
et al.,*
Plaintiffs,

v.

*META PLATFORMS, INC, Instagram, LLC,
Meta Payments, Inc., Meta Platforms
Technologies, LLC., et al.,*
Defendants

IN RE: SOCIAL MEDIA ADOLESCENT
ADDICTION/PERSONAL INJURY
PRODUCTS LIABILITY LITIGATION

THIS DOCUMENT RELATES TO:
4:23-cv-05448

MDL No. 3047

Case No. 4:23-cv-05448-YGR

Judge: Hon. Yvonne Gonzalez Rogers

Magistrate Judge: Hon. Peter H. Kang

**TRIAL REPORT OF RAVI IYER, PHD
August 1, 2025**

engagement signals from its algorithms.⁴¹ The removal of engagement signals has become an integral part of Meta’s playbook for reducing harm in “risky” settings.⁴² However, such removals are often temporary or limited.

- (35) It is also feasible for Meta to make it easier for users to provide negative signals and incorporate those signals into a quality- and explicit preference-optimized algorithm. Though Meta already uses sparse negative signals within its algorithms, these signals appear to have less impact on user experiences compared to positive engagement signals and are limited by user frictions for reporting negative signals. One effort to address this is Meta’s current testing of a “dislike” button for Instagram, which, if rolled out broadly, would make negative signals more readily accessible.⁴³ In addition, Meta has previously demoted borderline content,⁴⁴ but its algorithm descriptions suggest that it applies these negative signals to a lesser degree as compared to other platforms.⁴⁵ Taken together, Meta’s use of negative signals and prior reduction of borderline content, though limited, indicate that fully implementing quality optimization is readily feasible.
- (36) Meta also has established systems to engage experts and users in the creation of these quality and user preference signals.⁴⁶ Finally, as discussed above, other companies in the broader technology industry, such as YouTube, have successfully optimized based on quality signals and explicit user preference.

II.B. Meta’s harmful algorithmic optimization is not remedied by its Teen Accounts and time management tools

- (37) Meta has launched “tools, features and resources” that it purports “help teens have safe, positive experiences, and give parents simple ways to set boundaries for their teens.”⁴⁷ Most recently, Meta has launched Teen Accounts, which have some “built-in protections” turned on by default for teenage users.⁴⁸ According to Meta, its Teen Accounts are “designed to address parents’ biggest concerns,

⁴¹ META3047MDL-207-00003134 at -134 (“Big Levers Ranking Experiment”).

⁴² Mercy Ndegwa, “An Update on Our Longstanding Work to Protect People in Ethiopia,” Meta News, November 9, 2021, <https://about.fb.com/news/2021/11/update-on-ethiopia/>; META3047MDL-207-00003134 at -134 (“Big Levers Ranking Experiment”).

⁴³ Ivan Mehta, “Instagram Tests a ‘Dislike’ Button for Comments,” TechCrunch, February 14, 2025, <https://techcrunch.com/2025/02/14/instagram-tests-a-dislike-button-for-comments/>.

⁴⁴ Josh Constine, “Facebook Will Change Algorithm to Demote ‘Borderline Content’ That Almost Violates Policies,” TechCrunch, November 15, 2018, <https://techcrunch.com/2018/11/15/facebook-borderline-content/>.

⁴⁵ Joel Kaplan, “More Speech and Fewer Mistakes,” Meta News, January 7, 2025, <https://about.fb.com/news/2025/01/meta-more-speech-fewer-mistakes/>.

⁴⁶ Monika Bickert, “Publishing Our Internal Enforcement Guidelines and Expanding Our Appeals Process,” Meta News, April 24, 2018, <https://about.fb.com/news/2018/04/comprehensive-community-standards/>; META3047MDL-004-00015029 (“Bad Experiences and Encounters Framework (BEEF) Survey”).

⁴⁷ “Our Tools, Features and Resources to Help Support Teens and Parents,” Meta Help Center, accessed July 16, 2025, <https://www.meta.com/help/policies/809291991003600/>.

⁴⁸ “Introducing Instagram Teen Accounts: Built-In Protections for Teens, Peace of Mind for Parents,” Meta News, updated June 11, 2025, <https://about.fb.com/news/2024/09/instagram-teen-accounts/>.

including who their teens are talking to online, the content they're seeing and whether their time is being well spent."⁴⁹ Rather than optimizing the algorithm for quality signals and explicit user preference, which would make it easier for youth to control their Platform usage, Teen Accounts purport to provide greater controls for both teenagers and supervising parents through time management tools (e.g., notifications to teenage users encouraging them to leave Instagram after 60 minutes of daily use) and content restrictions.⁵⁰

- (38) Despite Meta's representations, these tools are relatively ineffective as compared to the recommendations in this report. As an initial matter, such tools only work if age verification is effective.
- (39) Further, research suggests that parental supervision tools are rarely used and easily evaded, even when used.⁵¹ It is unlikely that parents are aware of these features or that they will take the time to adjust settings given how many apps a typical teenager uses. Internal studies at Meta indicate that in 2022, under 10% of Meta teens were subject to parental controls, even as parents reported a widespread desire to reduce their children's exposure to digital harms.⁵²
- (40) Meta has acknowledged that any parental and user controls are likely to be underutilized based on both its own experiences with controls as well as the experiences of other organizations.⁵³ Per a cross-industry paper that surveyed representatives from many major platforms and which cited several Meta documents, "most platforms indicated that the portion of their user base actively utilizing user controls remains within the single-percentage range."⁵⁴

⁴⁹ "Introducing Instagram Teen Accounts: Built-In Protections for Teens, Peace of Mind for Parents," Meta News, updated June 11, 2025, <https://about.fb.com/news/2024/09/instagram-teen-accounts/>.

⁵⁰ "Introducing Instagram Teen Accounts: Built-In Protections for Teens, Peace of Mind for Parents," Meta News, updated June 11, 2025, <https://about.fb.com/news/2024/09/instagram-teen-accounts/>.

⁵¹ Naomi Nix, "Meta Says its Parental Controls Protect Kids. But Hardly Anyone Uses Them," The Washington Post, updated January 30, 2024, <https://www.washingtonpost.com/technology/2024/01/30/parental-controls-tiktok-instagram-use/>; "How Kids Bypass Parental Controls in 2024: A Parent's Guide," SafeTelecom, October 8, 2024, <https://kosheros.com/blogs/news/how-kids-bypass-parental-controls-in-2024-a-parents-guide>.

⁵² Naomi Nix, "Meta Says its Parental Controls Protect Kids. But Hardly Anyone Uses Them," The Washington Post, updated January 30, 2024, <https://www.washingtonpost.com/technology/2024/01/30/parental-controls-tiktok-instagram-use/>; Michelle Faverio, Monica Anderson and Eugenie Park, "Teens, Social Media and Mental Health," Pew Research Center, April 22, 2025, <https://www.pewresearch.org/internet/2025/04/22/teens-social-media-and-mental-health/>; Tom Cunningham, Sana Pandey, Leif Sigerson, Jonathan Stray, Jeff Allen, Bonnie Barrilleaux, Ravi Iyer, Smitha Milli, Mohit Kothari, Behnam Rezaei, "What We Know About Using Non-Engagement Signals in Content Ranking," *arXiv preprint* (2024): 1–16; Deposition of Sayed Oturu, Exhibit 9.

⁵³ Tom Cunningham, Sana Pandey, Leif Sigerson, Jonathan Stray, Jeff Allen, Bonnie Barrilleaux, Ravi Iyer, Smitha Milli, Mohit Kothari, Behnam Rezaei, "What We Know About Using Non-Engagement Signals in Content Ranking," *arXiv preprint* (2024): 1–16.

⁵⁴ Tom Cunningham, Sana Pandey, Leif Sigerson, Jonathan Stray, Jeff Allen, Bonnie Barrilleaux, Ravi Iyer, Smitha Milli, Mohit Kothari, Behnam Rezaei, "What We Know About Using Non-Engagement Signals in Content Ranking," *arXiv preprint* (2024): 1–16.

- (41) In September 2024, Meta implemented additional default restrictions through Teen Accounts, and in April 2025 it claimed that “97% of teens aged 13–15 have stayed in these built-in restrictions.”⁵⁵ Additional information is needed to understand this statistic, including what percentage of all young user accounts in the U.S. have been placed into Teen Accounts, including those who misrepresent their age. It also begs the questions what restrictions, exactly, are being measured in this statistic, and how much of this percentage accounts for teens ages 13–15 who cannot change certain settings without a supervising parent’s permission, as compared to teens ages 16–17 who can change these settings without permission. Regardless of the answers to these questions, these restrictions are still not enough to address the unwanted, negative, and harmful experiences of youth, including excessive and unhealthy usage of the Platforms.
- (42) Meta attempts to address these issues by simply defining low-quality experiences (e.g., clickbait) and restricting their distribution. For example, Meta’s Sensitive Content restrictions are defaulted for teens and purport to prevent the viewing of broad categories of content that are deemed more sensitive. This approach, however, does not mitigate these issues to the same extent that optimizing the algorithm for quality signals and explicit user preference does. Attempting to define low-quality experiences and restrict their distribution cannot fully or verifiably mitigate the harms associated with Meta’s algorithms, in part because of the impossibility of fully, successfully defining what is or is not harmful content.⁵⁶ Essentially, Meta is continuing to optimize its recommendation algorithms for engagement—a strategy that leads to unwanted, negative, and harmful experiences for youth—and then trying to undo those harms with limited content definitions. It would be far more effective for Meta to instead stop optimizing its algorithms for engagement.
- (43) Across features, Meta’s Teen Accounts fail to address the root of the problem: the engagement-driven algorithms that undermine self-control and perpetuate the very behaviors these tools seek to mitigate. Teen Accounts do not substantially address the issues because, to the best of my knowledge, Teen Accounts still are subject to algorithms that are optimized for engagement rather than quality or explicit preference, and that account for the bulk of over-usage and otherwise harmful experiences associated with young users’ use of the Platforms.
- (44) The mitigations of Teen Accounts effectively leave in place powerful engagement-based algorithms that can overwhelm the self-control of youth, whose inhibition systems are still developing.⁵⁷ Accordingly, it is unrealistic to expect the protections offered by Teen Accounts to fully mitigate

⁵⁵ “We’re Introducing New Built-In Restrictions for Instagram Teen Accounts, and Expanding to Facebook and Messenger,” Meta News, April 8, 2025, <https://about.fb.com/news/2025/04/introducing-new-built-in-restrictions-instagram-teen-accounts-expanding-facebook-messenger/>.

⁵⁶ “Written Testimony of Arturo Bejar before the Subcommittee on Privacy, Technology, and the Law,” U.S. Senate Committee on the Judiciary, November 7, 2023, https://www.judiciary.senate.gov/imo/media/doc/2023-11-07_-_testimony_-_bejar.pdf.

⁵⁷ BJ Casey and Kristina Caudle, “The Teenage Brain: Self Control,” *Current Directions in Psychological Science*, vol. 22, no. 2 (2013): 82–87.

these issues, and further design changes are necessary such that powerful algorithms are no longer working against both youth and parents. Without meaningful changes to the core design of these algorithms or features (i.e., optimizing for quality signals and explicit user preference), the risks and harms faced by teens will persist, rendering these surface-level solutions largely ineffective.

on something important.⁹⁰ Meta only introduced ephemeral content on Instagram in 2016 and on Facebook in 2017, and its products existed without such content for many years.⁹¹ Several successful competitors (e.g., Twitter and Pinterest) do not have ephemeral content functionality. Accordingly, it is feasible and necessary for Meta to remove ephemeral content from its Platforms, without the ability for it to be turned back on, removing yet another design feature that encourages over-usage of its products by youth.

III.B. Meta's harmful extended use features are not remedied by its Teen Accounts and time management tools

- (61) Teen Accounts and time management tools alone are insufficient to mitigate the excessive and unhealthy usage associated with Meta's extended use features. Rather than removing and restricting these extended use features, which would make it easier for youth to control their Platform usage, Teen Accounts and time management tools, by default, rely on youth exercise of self-control. As I explained above, tools that rely on teens' biologically undeveloped self-control are unlikely to succeed. For example, by default, Meta sends notifications to teenage users encouraging them to leave Instagram after 60 minutes of daily use, but it does not actually restrict their time spent on the Platform.⁹² Such notifications do not constitute a meaningful amount of friction to impact Platform usage. Similarly, through "Sleep mode," Meta mutes notifications overnight for teen users from 10 pm to 7 am, but does not actually restrict their access to the Platform during those hours.⁹³ And while parents who have set up supervision over their teenagers' accounts can block their teenagers' access to their account based on the amount of time spent per day or for set time periods,⁹⁴ a Meta executive has acknowledged that expecting parents to manage usage of 40+ apps is unrealistic,⁹⁵ and almost all

⁹⁰ Ryan Romero, "The Role of Ephemeral Content in Creating FOMO: A Social Media Strategy," Multipost Digital, accessed July 18, 2025, <https://www.multipostdigital.com/blog/the-role-of-ephemeral-content-in-creating-fomo-a-social-media-strategy>.

⁹¹ "Introducing Instagram Stories," Instagram Blog, August 2, 2016, <https://about.instagram.com/blog/announcements/introducing-instagram-stories>; Connor Hayes, "More Ways to Share With the Facebook Camera," Meta News, March 28, 2017, <https://about.fb.com/news/2017/03/more-ways-to-share-with-the-facebook-camera/>.

⁹² "Introducing Instagram Teen Accounts: Built-In Protections for Teens, Peace of Mind for Parents," Meta News, updated June 11, 2025, <https://about.fb.com/news/2024/09/instagram-teen-accounts/>.

⁹³ "Introducing Instagram Teen Accounts: Built-In Protections for Teens, Peace of Mind for Parents," Meta News, updated June 11, 2025, <https://about.fb.com/news/2024/09/instagram-teen-accounts/>.

⁹⁴ "Introducing Instagram Teen Accounts: Built-In Protections for Teens, Peace of Mind for Parents," Meta News, updated June 11, 2025, <https://about.fb.com/news/2024/09/instagram-teen-accounts/>.

⁹⁵ Natalie Fahmy, "Meta Testifies at Ohio Statehouse in Favor of Age Verification in App Store," MSN, accessed July 21, 2025, <https://www.msn.com/en-us/news/technology/meta-testifies-at-ohio-statehouse-in-favor-of-age-verification-in-app-store/ar-AA1FFetS>.

users maintain default settings.⁹⁶ Many teens will likely figure out ways around such tools as well, especially as Instagram currently allows for the creation and maintenance of multiple accounts.

- (62) Meta does attempt to add friction into teen experiences at specific intervals as an acknowledgment that friction provides some opportunity to evaluate continued product usage. However, Meta's Teen Accounts and time management tools stop well short of the amount of friction that would actually be effective to mitigate excessive and unhealthy usage, all of which I described in Section III.A. As an example, the current friction, which reminds users that they have been spending more than an hour on Instagram, occurs much less frequently than the friction I recommend regarding autoplay (e.g., requiring the user to actively decide to watch each video by clicking play). As such, the friction that Meta has added within Teen Accounts experiences is clearly inadequate given the powerful algorithms and design choices pushing teens toward continued usage.
- (63) In conclusion, addressing the combination of engagement-based feeds and frictionless user interfaces—which present teen users with the most tempting content with as little opportunity to reflect on their consumption as possible—is necessary to mitigate unwanted, negative, and harmful experiences, including excessive and unhealthy usage, for young users. Meta has introduced some design mitigations for these issues, which shows that such mitigations are feasible. However, those mitigations have been temporary, limited in scope, and/or limited in terms of strength of implementation.

⁹⁶ “We’re Introducing New Built-In Restrictions for Instagram Teen Accounts, and Expanding to Facebook and Messenger,” Meta News, April 8, 2025, <https://about.fb.com/news/2025/04/introducing-new-built-in-restrictions-instagram-teen-accounts-expanding-facebook-messenger/>.