

AMENDED Exhibit 114

PLAINTIFFS' OMNIBUS OPPOSITION TO DEFENDANTS' MOTIONS FOR SUMMARY JUDGMENT

Case No.: 4:22-md-03047-YGR

MDL No. 3047

In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation

Well-being Research: 10,000 Foot View

Compiled by: Foundational Well-Being Research
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WHAT IS WELL-BEING?

The term well-being is used to cover numerous areas. Apple and Google have been talking about Digital Well-Being, in which they are largely talking about helping people better manage their time with technology (particularly smartphones). Within Facebook, the term is sometimes used to cover a wide range of areas - from controls around technology use to suicide/self-harm to whether Facebook is a net positive in the world.

For the purposes of our well-being work at Facebook, we are talking about **subjective well-being** – how a person evaluates their life, including life satisfaction and the extent to which they experience positive and negative affect.

- Psychologists don't have a standard definition, and there are multiple facets including quality relationships, control/autonomy, community, and learning [1,2]. Studies often measure particular facets or related concepts (e.g., depression, loneliness) and describe these as “well-being” colloquially.
- We focus on subjective well-being, which is measured with surveys. Objective indicators like education, income, and crime also influence well-being, as do individual factors such as personality and genetics. However, subjective evaluations matter: the way a person *interprets* their life circumstances influences how those circumstances impact health and longevity [3, 4], and interpretation styles are changeable via interventions [5].
- Well-being is not just feeling happy; happiness in the short-term may be pleasant but doesn't last, so well-being includes having a sense of meaning or purpose in life, which is linked to longevity and improved health [2]. This is why we don't want to optimize News Feed for kitten videos or other short-term mood boosts, but rather help people fulfill important psychological needs, such as meaningful relationships.

HOW DOES FACEBOOK AFFECT WELL-BEING?

Overall: The best research suggests that Facebook is net bad for well-being [6-8], but the negative effect is small and there are also positive uses [9-10]. The science here is still early, primarily US based, and relying on self report – we have a lot more we need to learn.

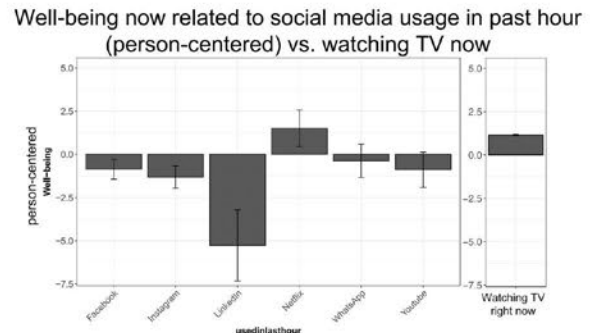
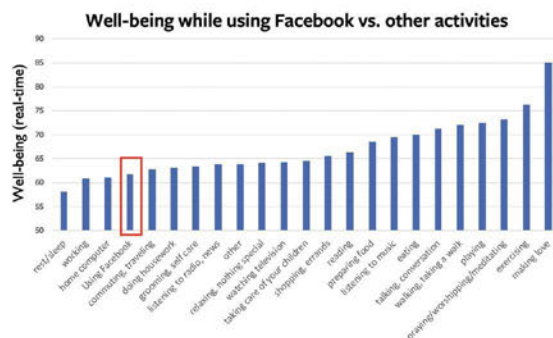
The good: When Facebook is used intentionally and to enhance **social relationships**. More broadly, Facebook is a platform where people **fulfill important needs** like belonging, support, accomplishment, and pursuing interests - uniquely powered by access to social connections.

The bad: When Facebook undermines other positive aspects of life. For example, through **spending too much time**, consuming content instead of interacting with others, losing sleep, or negatively comparing yourself to others.

Active vs. passive: Substantial research shows that the effect of Facebook use on well-being depends *how you use it*: Facebook use that fosters interpersonal relationships can be beneficial (active, one-on-one interactions with closer friends that require more effort), but Facebook use that gets in the way of relationships can be detrimental (passive consumption of posts, photos, videos, stories) [10-14]. This research informed our change in News Feed ranking to promote meaningful social interactions (MSI) rather than views/clicks/likes.

Compared to other activities: Well-being is lower while using Facebook than most other daily activities, like caring for children or cooking. It's lower than Netflix and TV, higher than LinkedIn, and similar to YouTube (see Figures) [15]. These “in the moment” estimates reflect multiple causes: A person may use an app because of their well-being (e.g., I'm lonely and open Facebook, unhappy at work and open LinkedIn, content with my family and start a movie), and app

use may influence well-being (e.g., Facebook and LinkedIn make me feel worse about myself by comparison to others). Also, people's beliefs about how social media *should* affect them might influence these results: A lot of research is conducted in the west, where there is a strong public narrative that “social media is bad for you.”



People report relatively low well-being while they're using Facebook compared to other activities. Well-being is similar on other apps; Netflix is higher and LinkedIn is lower. These effects are not causal; for example, people looking for a job could have lower well-being and thus use LinkedIn. From trackyourhappiness.org (see [15]).

HOW DOES FACEBOOK AFFECT YOUTH WELL-BEING?

Overall: Findings for teens largely mirror findings for adults; overall associations between social media use and well-being are net negative but small, explaining at most 0.4% of the variation in well-being [7]. Moderate use of digital technology is not intrinsically harmful and may be advantageous [16].

The good: Similarly as in adults, social media use to support interpersonal relationships is associated with improvements in well-being. For example, Instagram use that increases closeness between friends is related to lower anxiety and depression [17]. Teens also rated their interactions on Facebook as more meaningful than any other age group [18].

The bad: Nighttime social media use is associated with poorer mental health in teens due to displacing sleep [19]; this is the most direct relationship between social media use and teen well-being. The most vulnerable teens offline are also the most vulnerable teens online (e.g., teens from lower socioeconomic backgrounds are at greater risk for negative consequences of their time spent online [20]).

CURRENT AREAS OF FOCUS:

Well-being is a broad concept with many contributing factors. We have identified three areas of current focus based on their impact on well-being, their link to experiences on-platform, and their emphasis in the public narrative.

Problematic use (colloquially, “addiction”): Feeling that that Facebook has a serious, negative impact on one's sleep, relationships, work, or lives, combined with lack of control over Facebook use.

- Occurs for 3.1% of Facebook MAP, with 55% experiencing a milder form of unintentional use (i.e., “spending too much time on social media”) [2, 21]. More common in younger men and teens.
- “Addiction” is used colloquially but is not accepted in the clinical or academic literature. It is not clear that Facebook could ever cause a “true” addiction, though processes like reward-learning and habit-formation underlie addiction and may occur for people using Facebook [22].
- On Facebook, people experiencing problematic use spend more time overall, have more sessions, spend more time late at night, receive and respond to more notifications, and deactivate their accounts more frequently [21].

What this means: The most severe forms of problematic use are relatively rare, but negative feelings about one's Facebook use are common - particularly in younger people. This is a serious problem that we need to address. There are many aspects of Facebook that contribute to low-control or unintentional behaviors, and these could be fixed to support people using Facebook in ways that they want to, such as reducing notifications and making them more relevant, making time controls more salient, and introducing pause points into News Feed.

Social comparison: Evaluating yourself negatively with respect to others whom you perceive to be better off than you. While comparing yourself to others is normal online and offline, the type of comparison that leads to negative self-evaluations is heightened on Facebook and can be harmful for well-being [23].

- Occurs for 40% of Facebook MAP, with ~5% experiencing chronic social comparison (similar for Instagram) [2, 24]. More common in people under 30 (including teens) and women.
- On Facebook, people who experience more social comparison see a greater proportion of News Feed posts from friends (vs. Pages and other non-social content), see posts that have more feedback, as well as posts containing more positive and cheerful terms. The effect is stronger among women who see a greater proportion of other women in their News Feeds [24].

What this means: Social comparison is amplified on Facebook because of the type of information that people are exposed to - there are many salient examples of selectively positive aspects of other people's lives. Strategies to mitigate the negative effects of social comparison are important and include practicing gratitude and vulnerable sharing - we can create opportunities for these on-platform.

Loneliness: A perceived difference between the quality of friendships a person has and wants. It is not about the number of friends a person has (correlation between friend count and loneliness is low and non-linear [25]); you can be surrounded by friends and be lonely, or all alone but feel supported.

- Occurs for 36% of Facebook MAP, with 7% experiencing chronic loneliness [2, 26-27]. More common in younger adults (age 18-24), veterans, and individuals who identify as LGBTQ [27].
- Research shows that people who are already feeling lonely turn to Facebook to feel better [26], but there is also evidence that reducing Facebook use can improve loneliness [link]. People subjectively feel that Facebook can both help and hurt their feelings of loneliness [27].
- On Facebook, chronically lonely people are 2-3x as likely to engage in social comparison, describe themselves as more passive users, and believe their Facebook friends care about them less [27].

What this means: While Facebook may not be *causing* loneliness, these negative feelings are common and Facebook can help. Social connections, mental health support, and meaningful communities are all ways to help improve loneliness.

Appendix

HOW DOES WELL-BEING RELATE TO FACEBOOK'S MISSION?

Facebook's mission encompasses several facets of well-being: control ("give people the power..."), community ("...build community..."), and relationship quality ("...bring the world closer together"). Other facets are implied, including providing a sense of belonging, trust in others, and respect.

If we fulfill our mission, we by definition improve well-being in these three areas in the long-term, as long as we don't systematically undermine well-being at the same time. By focusing on understanding and measuring well-being, we can identify when our efforts to fulfill our mission may negatively impact other areas of well-being, for example, by interfering with sleep, detracting from in-person interactions, or promoting maladaptive behaviors like social comparison.

WHAT THE PRESS GETS WRONG

Most external studies have three problems [28]:

- **Cross-sectional:** They find that people who use Facebook more are, for example, lonelier, but can't tell if Facebook causes loneliness or people turn to Facebook when they're lonely to feel better. Experiments and longitudinal surveys (looking at changes in well-being) are stronger but rare.
- **Self-reported Facebook use:** People report on surveys how much they use Facebook, which is unrelated to actual time spent [29-30] and biased by other questions on the survey (like loneliness) [31].
- **Expectation effects and western focus:** Most research is done in the west, where a common narrative is that "Facebook is bad for you." Thus, in surveys and non-blind experiments (e.g., where people deactivate Facebook), the results are influenced by participants' expectations that Facebook is bad for them.

The studies with better methodology (experiments, longitudinal surveys) generally find mixed results about Facebook and well-being, but there's converging evidence that the net impact is bad, if small.

HOW DO WE DECIDE WHAT TO PRIORITIZE?

We use surveys to measure the prevalence and intensity (life-interference) of well-being issues (e.g., loneliness, social comparison), and the degree to which people think Facebook makes the issues better or worse. We prioritize issues based on these three factors (prevalence, intensity, FB's role), as well as external research on which domains are most important [32]. We are currently working on additional measurement that will allow product teams to evaluate their impact on well-being drivers (e.g., control/autonomy, supportive relationships).

WHAT PRODUCT CHANGES HAVE WE ALREADY MADE FOR WELL-BEING?

- Feed ranking changes in January 2018 to optimize for meaningful social interactions (MSI) [33]
- Tools to manage your time and mute notifications on Facebook and Instagram [34]
- Take a Break tool to see less of someone (e.g., an ex) [35]
- Suicide prevention tools (including AI for detection and report queue prioritization, resources and support developed with experts, and ability to directly connect to crisis support organizations over Messenger) [36]

RESEARCH TRANSPARENCY

- We have some of the world's experts in technology and well-being at Facebook. We publish many of our findings in peer-reviewed journals and Hard Questions blog posts, and do not censor work based on how it makes Facebook look.
- We also collaborate with the world's well-being experts, including faculty at Berkeley, Carnegie Mellon and University of Wisconsin and mental health clinicians and organizations like [Save.org](#) and the [National Suicide Prevention Lifeline](#).

WHAT WE STILL NEED TO KNOW

- **Are well-being impacts consistent internationally?** Most academic research has been done in the west, and we know that use of Facebook, sentiment about Facebook, and public/press narratives vary across the world. In addition, the importance of key drivers of well-being can vary across cultures. We need to evaluate how well-being efforts apply internationally, and what international differences we must consider.
- **How do well-being effects vary across individuals?** There are many contributing factors to someone's well-being, and Facebook use may play a bigger role for some people than others. We don't have a clear sense of whose well-being is the most affected by Facebook (for whom the positive or negative effects are strongest).
- **How much does the press narrative actually matter?** With strong expectation effects in the west, beliefs about how Facebook affects one's well-being certainly influence how people self-report these results [e.g., 37]. It is difficult to disentangle true effects from expectation effects, given that any experimental design involves participants knowing what condition they are in (e.g., deactivate Facebook vs. use Facebook as usual). Also, international experimental research is lacking, particularly in non-western countries.
- **Is Facebook causing these effects?** We need more robust research to understand how Facebook impacts people over time, and we need to better understand which negative effects (eg, loneliness) Facebook is causing vs. which negative effects show up because people are more likely to use Facebook when in that state.
- **How does Facebook compare with other apps?** We need to better understand how the impact of FB on well-being differs (or doesn't) from other apps and other interactive media. Is it possible for any inherently social app to be positive without these problem areas?
- **What is the impact of positive aspects of platform on well-being?** We know that Facebook contributes positively to people's well-being, we have to better understand those full range of positive effects, how deeply they effect people, and how the negative effects interact with/outweigh the positive effects.
- **How long-term are the effects of social media experiences on well-being?** Usually studies measure changes in well-being over the course of days to months - our own longitudinal research measures effects over 1 month. Is it unclear how long-lasting these effects are.
- **What meaningful impact on overall well-being do changes on-platform actually have?** We have built products following theoretical principles about what is beneficial for well-being, but the impact of these products on well-being outcomes over time has not been established.

COMPLETED STUDIES

[List of Social Science Research: Completed Studies and Roadmap](#)

ADDITIONAL RESEARCH ON YOUTH

[TEEN WELL-BEING AND SOCIAL MEDIA: OVERVIEW BRIEFING](#)

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