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## Health warnings could reduce young people's social media use, study finds



by Stanford University Medical Center, USA

Pop-up messages that warn of the harms of social media—such as mental health consequences—have the potential to reduce young people's social media use, a new Stanford Medicine study has found. The online experiment of about 1,000 teens and young adults found that warnings also boosted people's knowledge of the risks of social media use.

The research, which will be published online Sept. 4 in *JAMA Health Forum*, was inspired by a 2024 call from then-U.S. Surgeon General Vivek Murthy, M.D., to add health warning labels to social media, in the same way that tobacco, alcohol and other risky products carry warnings. Four U.S. states have since passed legislation mandating such warnings; California's law will go into effect Jan. 1, 2027.

Warning labels are one of many tactics that could help people use social media in a healthier way, said lead study author Anna Grummon, Ph.D., assistant professor of pediatrics. But they haven't been rigorously investigated.

"We haven't known what warnings for social media should say, or if they're promising for changing behavior," Grummon said. "Sometimes, subtle changes to warnings really matter."

The study found that, of 15 messages tested, those on overall mental health harms and warnings specific to depression and anxiety resonated most with young people.

"Teens and young adults consistently reported that they felt the warning messages we tested would reduce their social media use compared with a control message," said senior study author Thomas Robinson, M.D., the Irving Schulman, M.D., Professor in Child Health.

"Our data suggest these warnings could work, so it's worth spending time to get the language just right," Grummon added.

**Negative effects of social media**

Nearly all U.S. teens and young adults use some form of social media. [Previous research](#) has linked [excessive social media use](#) to several negative outcomes, including depression, anxiety, worsened body image and sleep disruption.

Adding warnings to social media has broad support, Grummon said, noting that after the surgeon general's call in 2024, a bipartisan coalition of 42 state attorneys general petitioned Congress to enact warnings at a federal level.

In addition to the states that have passed warning laws (California, Colorado, Minnesota and New York), lawmakers in Texas, Ohio and Pennsylvania have proposed legislation. California's law has specific warning language built into the legislation; other states have not specified the warnings' wording.

The Stanford Medicine researchers tested 14 warnings and a control message, using questionnaires administered to 1,012 young people. About half were teenagers who were 13–17 years old, and half were young adults, 18–29 years old. As part of the questionnaire, they provided information about their demographics and which social media platforms they used.

The researchers developed warning messages on six health topics: social media addiction, negative body image, sleep disruption, depression, anxiety, overall mental health harms and the fact that social media has not been proven safe for young people. They devised two warnings on each topic. They also tested California's warning.

For instance, one of the messages about sleep said, "SURGEON GENERAL'S WARNING: Using social media causes sleep problems. This is bad for your health." Another message tested said, "SURGEON GENERAL'S WARNING: Social media is associated with significant mental health harms for children and young adults."

Because some social media companies have suggested they could provide their own warnings, the researchers also tested a message suggesting a screen-time break that was similar to one used on TikTok. Finally, the control message discussed seatbelt safety, a health topic that is relevant to young people but unrelated to social media use.

Participants saw the messages in random order, formatted as though they were appearing on an Instagram page. They rated each message in response to two questions: "How much does this message discourage you from wanting to use social media?" and "How much does this message increase your awareness of the harms of using social media?"

### **Mental health harm resonates**

Participants rated all the warning messages as more effective than the control message. They also rated all warnings that mentioned health effects, except the addiction warning, as more effective than the message suggesting a screen-time break.

The messages perceived as most effective were those about overall mental health harms, depression and anxiety. Although the data do not show why those messages performed best, "if I were to speculate, I would say that these are harms that resonate with people," Grummon said. "People may think, 'That's right, I can see that happening to my friends or to me,' and these are outcomes people care about."

Teens and young adults responded similarly to the warnings, the study found. The researchers had suspected the age groups might differ.

"If you're a few years older, it makes a big difference in your experience with digital media since the landscape is changing so quickly," Robinson said. "But our teen and young adult participants consistently said they felt these messages would reduce their social media use."

The California warning performed fairly well—its perceived effectiveness was on par with other health warnings, even though it is longer and more complex. It says, "The Surgeon General has warned that while social media may have benefits for some young users, social media is associated with significant mental health harms and has not been proven safe for young users."

"We talked to the people who created the bill, and they told us the rationale behind it," Robinson said. "It's not the message we would have designed, but we think we understand why it performed well, and it was meant to stand up to legal scrutiny. All these bills are in litigation, being challenged by the social media industry."

The next step is to conduct more extensive tests to see if the warnings in fact reduce social media use.

"With substances like tobacco and alcohol, we find, on average, that well-designed warning labels change behavior," Grummon said. "But social media is a totally different product from cigarettes or alcohol or sugary drinks, where you just put the warning on the product and it lives there. Social media laws are written so that these warnings are basically pop-ups. We need to find out more about how that changes behavior."

Researchers at the University of North Carolina and the University of California, Davis, also contributed to the study.

Publication details

Designing social media health warnings for teens and young adults: An online randomized experiment, *JAMA Health Forum* (2026).

**Journal information:** [JAMA Health Forum](#)

– medicalxpress.com, Sept 4, 2026