

Mindfulness meditation can help address the teen mental health crisis, researcher says

November 14 2023, by Cynthia McCormick Hibbert



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In a paper [published in *Nature Mental Health*](#), Northeastern psychology professor Susan Whitfield-Gabrieli advises policy makers to consider turning to the low-cost, readily available practice of mindfulness

meditation to change brain activity associated with mental illness.

"We wanted to show that [lifestyle changes](#) and [behavioral interventions](#) such as mindfulness meditation and exercise actually target the same (brain) network as quite invasive therapies such as [deep brain stimulation](#), electroshock therapy and treatment with SSRIs," she says.

"And they do ways that typically don't have any [negative side effects](#) and are equitable in the sense that people can do them anywhere, anytime," says Whitfield-Gabrieli, whose EPIC Lab at Northeastern works to understand the brain basis of psychiatric disorders.

The adolescent mental health crisis

The mental health crisis is particularly acute when it comes to youth, she says.

U.S. Surgeon General Vivek Murthy issued a rare warning in December 2021 that today's [young people](#) are facing "unprecedented" challenges that have had a "devastating" effect on their mental health.

The Centers for Disease Control and Prevention's 10-year youth risk surveillance report, released in February, painted a stark picture of adolescent depression. It says that in 2021, 42% of students felt "persistently sad or hopeless," and 10% had attempted suicide.

Mental Health America, a nonprofit organization, says in a 2023 publication that 16.39% of young people ages 12 to 17 reported suffering from at least one major depressive episode in the past year.

"Even before COVID, there was an increase in self harm and suicidal ideation," Whitfield-Gabrieli says.

That doesn't mean sufferers are getting help. Mental Health America says that in 2023, "59.8% of youth with major depression did not receive any mental health treatment."

"Accessing therapy is very, very difficult," Whitfield-Gabrieli says.

The good news is that mindfulness meditation and exercise can make a big difference in teen mental health, she says.

The default mode network

Whitfield-Gabrieli says the practices work by calming a region of the brain known as the [default mode network](#), which was first identified via neural imaging.

It is "most engaged when we're thinking about ourselves or daydreaming," she says, adding people can also think of it as "mental time travel."

Overactivation of the default mode network, however, may cause problems with daily functioning, Whitfield-Gabrieli says. That's when it becomes associated with decreases in executive function, negative thought patterns and, in severe cases, psychosis.

Reminiscing becomes rumination and planning for the future turns to anxiety, she says.

"We have a hypothesis that the overactivity or the hyper connectivity or activation of this network is specifically related to psychopathology," Whitfield-Gabrieli says.

It can lead to a "locked in" and "self referential" state of being "where you get into repetitive, negative thinking," she says.

"It can be rehashing the past or it could be obsessively worrying about the future, but you get locked into this mode of repetitive, negative thinking."

Stopping the spiral of negativity

"The way mindfulness meditation works is it forces you to focus on the present," Whitfield-Gabrieli says.

She has used fMRI neurofeedback in her lab to illustrate the decrease in default mode network activity in teens using mindfulness meditation.

"We do that with teens with depression and anxiety and psychosis to help them see how they're actually modulating the networks," Whitfield-Gabrieli says.

Her paper says that other treatments such as antidepressants, ketamine and transcranial magnetic stimulation also have been shown to reduce default mode network connectivity.

But behavioral interventions such as mindfulness meditation and exercise are of particular interest "because they are scalable and suitable for early intervention and even prevention of [mental illness](#) in youth at measurable risk for developing psychiatric disorders," the article says.

"These are behavioral interventions people can do any time, anywhere," Whitfield-Gabrieli says.

Lessons for policy makers and schools

Increasing exercise and decreasing [social media use](#) may also help calm the default mode network associated with mental distress and are areas

ripe for further study, Whitfield-Gabrieli says.

In the meantime, she says [policy makers](#) should consider having mindfulness meditation incorporated as part of the school day as early as preschool.

"We've actually done a [randomized clinical trial](#) in sixth grade charter schools that shows by doing [mindfulness meditation](#) as a regular 45-minute class that we can significantly reduce self-perceived stress."

"It's a very protective mechanism," she says. "We should catch these kids before they fall."

More information: Susan Whitfield-Gabrieli et al, Tuning the default mode network with behavioral interventions to address the youth mental health crisis, *Nature Mental Health* (2023). [DOI: 10.1038/s44220-023-00122-z](#)

Provided by Northeastern University

Citation: Mindfulness meditation can help address the teen mental health crisis, researcher says (2023, November 14) retrieved 7 May 2024 from <https://medicalxpress.com/news/2023-11-mindfulness-meditation-teen-mental-health.html>

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