Long COVID patients report improvements following self-regulation therapy, study finds

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A new UCLA-led study suggests that some people living with long COVID may be able to alleviate certain symptoms by using short-term, self-regulating therapies.

The small-scale study, published in the *Journal of Psychosomatic Research*, recruited a group of 20 long COVID patients, many of whom had been experiencing symptoms for more than a year. Each participant underwent six sessions of biofeedback therapy, which involves the practice of breathwork and relaxation techniques paired with visual feedback to teach self-regulation of autonomic functions such as heart rate and temperature.

Clinical psychologist Dr. Natacha Emerson, the study's lead author and assistant clinical professor in the UCLA Department of Psychiatry and Biobehavioral Sciences, said her study sought to test whether biofeedback would improve both the physical symptoms associated with long COVID and the psychological distress that often accompanies untreated chronic symptoms. While biofeedback has been established for chronic somatic symptoms, this is the first study to explore its effects in long COVID.

Immediately following the six weeks of treatment, participants self-reported significant improvements in physical, depression and anxiety symptoms as well as in sleep and quality of life. The benefits were also sustained three months later without further intervention.

Study participants also reported fewer visits to their medical providers and reduced use of prescribed medications at this three-month time point.

"Our biggest hope is that we've identified a way to alleviate chronic physical symptoms that are not successfully treated by standard biomedical approaches, and that we did so with a short-term, non-pharmacological model that is easily scalable," Emerson said.

An estimated 65 million people worldwide are reported to have long COVID, which causes a constellation of physical and mental health

symptoms including brain fog, dizziness, heart palpitations, depression, anxiety and sleep issues. A patient is considered to have long COVID if they have persistent symptoms for at least three months, though many patients report ongoing symptoms lasting more than a year.

"It is important to underscore that while this behavioral intervention may help symptoms, patients with long COVID are not in control of their symptoms and are not faking or exaggerating what they report to their doctors," Emerson said. "Whether it is a racing heart rate, chronic cough, or fatigue, these are real symptoms, just not rooted in a disease process. Instead, we think the autonomic nervous system is off balance and signaling fight or flight mechanisms, similarly to what we see in panic attacks."

Emerson adds, "What is exciting is that we are restoring hope in people who feared they would be disabled long-term. And if this tool works, it is one they can practice long term and might apply to future periods of stress."

The authors said the study has several limitations including a small sample size and lack of a control group for comparison. Additionally, some patients were co-enrolled in other treatments such as acupuncture or psychotherapy, which may have contributed to overall improvements.

Emerson and colleagues hope to replicate findings through a randomized control trial, including comparing biofeedback to other treatments such as psychotherapy or pulmonary rehabilitation. Other areas of study could include the addition of brain imaging techniques or inflammation-based biomarkers such as cortisol.

More information: Natacha D. Emerson et al, An open trial of

biofeedback for long COVID, *Journal of Psychosomatic Research* (2024). DOI: 10.1016/j.jpsychores.2024.111625