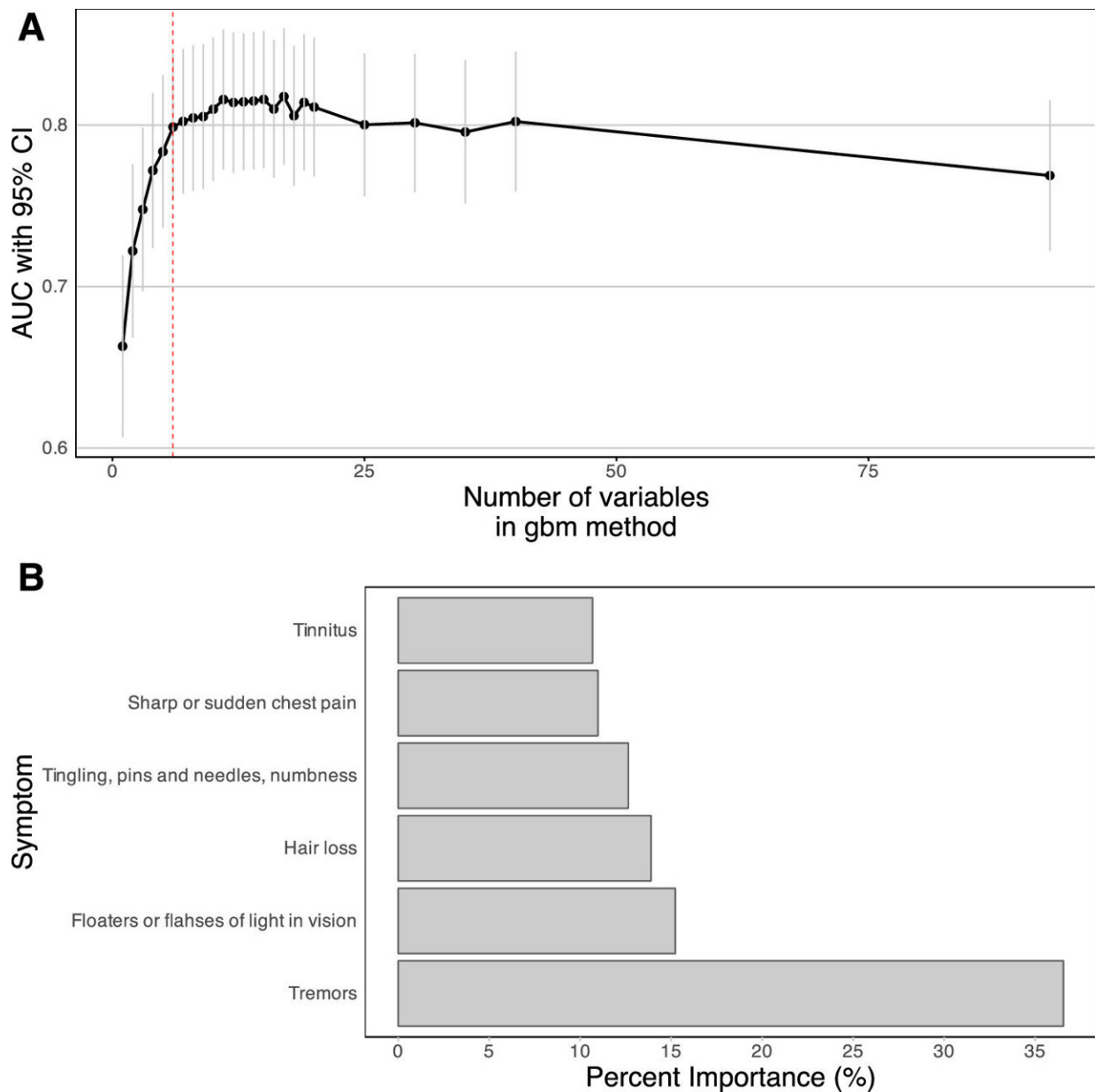


# Internal tremors: Adding to the list of long COVID symptoms

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Most important symptoms for differentiating between participants with and without internal tremors. Credit: *The American Journal of Medicine* (2024). DOI: 10.1016/j.amjmed.2024.07.008

Long COVID has a laundry list of symptoms—and a lesser-known but troubling one is the sensation of having internal tremors, often with no outward evidence that this is happening. In a new, Yale-based long COVID study, more than one-third of participants report experiencing this strange symptom, which feels as if tremors are occurring inside their bodies.

Long COVID remains one of the most poorly understood aspects of the SARS-CoV-2 pandemic. Since shortly after the pandemic began in 2020, [health professionals](#) have had to come to terms with the fact that some patients who overcome their initial COVID-19 infection never completely recover. People with long COVID have developed a variety of symptoms that range from gastrointestinal issues to chronic fatigue.

Now, researchers at Yale School of Medicine have added this symptom to the list. According to their study, a subset of people with long COVID appear to develop "internal tremors"—a twitching or vibrating sensation that is not visible to the naked eye and is not linked to physical spasms. The [study](#) was published July 26 in the *American Journal of Medicine*.

"Many patients [who had this symptom] were being dismissed because doctors hadn't heard of this before—and many patients wondered if anyone else had experienced it," says Harlan Krumholz MD, SM.

Krumholz is the Harold H. Hines Jr. Professor of Medicine at Yale School of Medicine (YSM), director of the Yale New Haven Hospital Center for Outcomes Research and Evaluation, and professor of public

health ([health policy](#)) at the Yale School of Public Health. Krumholz hopes this study will "make people feel less alone."

## When COVID became a lingering ailment

Krumholz and his research team focus on [cardiovascular disease](#), but in the pandemic they used their skills to help combat SARS-CoV-2. As long COVID established itself as an ongoing health problem for many people, Krumholz and his team, working with immunologist Akiko Iwasaki, Ph.D., Sterling Professor of Immunobiology at Yale School of Medicine, turned their attention to long COVID.

While talking with patients with long COVID, they noticed that some would bring up what he calls a "very unusual syndrome."

"They had the sensation as if their muscles were in the midst of having tremors," he says, or as if just under their skin, "their nerves were vibrating."

Neurological conditions such as Parkinson's can cause tremors. However, in long COVID patients who complained of this symptom, Krumholz says there was not any discernible shaking, nor were spasms under the skin detectable in any way.

Krumholz hadn't heard of anything like this happening before. In fact, in their research the team found fewer than 10 other scientific studies that described something similar, says Tianna Zhou, MD, a first-year resident at Brigham and Women's Hospital in Boston who worked on the project as a student at Yale School of Medicine, and is first author of the current study.

The novelty of the symptom, as well as its largely not being visible, helped explain to Krumholz why physicians had largely ignored it when

their patients brought it up.

To see how widespread internal tremors really are, Krumholz and Iwasaki and their teams surveyed 423 members of a long COVID research study group centered at Yale, asking questions about their health and [life experiences](#). All participants had COVID-19 between May 2022 and June 2023.

## Internal tremors are a disturbing symptom

A total of 37%—158 [survey respondents](#)—said they had experienced internal tremors, a surprising number since "it's not a symptom that seems to be commonly reported," says Zhou. The sensations ranged from bothersome to intolerable, with "most people just finding it extraordinarily distracting," says Krumholz.

Interestingly, the 158 people with internal tremors had worse health overall, were more financially strained, and were more likely to face uncertain housing than long COVID patients who didn't have the tremors.

Even though the sensation is usually not visible to others, "it's not trivial," Krumholz says. "These are people who are suffering substantially, and a part of what contributes to their suffering is this [symptom](#)."

The survey found that people with internal tremors were more likely to list nervous system conditions, as well as symptoms such as dizziness and heart rate issues as part of their long COVID experience. However, what is behind the [sensation](#) is still unknown.

Despite the umbrella term that is used for it, long COVID is "not really one disease," says Krumholz. Internal tremors may be an indication one

of the subtypes of this condition, with implications for treatment.

Krumholz hopes that identifying the various symptoms of long COVID will help researchers identify causes and pinpoint a broad range of therapies for patients for whom effects of the virus continue to linger and whose lives have been severely affected as a result.

**More information:** Tianna Zhou et al, Internal tremors and vibrations in long COVID: a cross-sectional study, *The American Journal of Medicine* (2024). [DOI: 10.1016/j.amjmed.2024.07.008](https://doi.org/10.1016/j.amjmed.2024.07.008)

Provided by Yale University

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