

Acupuncture May Improve Breast Cancer-Related Cognitive Difficulties

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Acupuncture May Help Improve Perceived Breast Cancer-Related Cognitive Difficulties Over Usual Care

Real and sham acupuncture were more effective at improving breast cancer survivors’ perceived cognitive impairment compared with usual care, while real acupuncture was superior to sham acupuncture in improving objective cognitive function, according to results from the randomized [ENHANCE](#) phase II clinical trial presented at the [San Antonio Breast Cancer Symposium](#) (SABCS), held December 9-12, 2025.

More than 40% of [breast cancer](#) survivors experience cancer-related cognitive difficulties, which are sometimes referred to as “brain fog” or “chemo-brain,” according to [Jun J. Mao, MD, MSCE](#), the Laurance S. Rockefeller chair in integrative medicine and chief of integrative medicine and wellness service at Memorial Sloan Kettering Cancer Center. “Cancer-related cognitive difficulties can make performing daily tasks more difficult and can reduce overall quality of life,” Mao explained. “Unfortunately, there are very few treatments that are backed by evidence for this problem.”

Previously, Mao and his colleagues found that [insomnia was associated with cognitive difficulties](#) in over 1,000 breast cancer survivors and that, in a [prior trial](#), acupuncture improved insomnia and may improve cognitive function compared with cognitive behavioral therapy for insomnia (CBT-I). To further test the effectiveness of acupuncture in improving cognitive function for breast cancer patients, the researchers designed a three-arm study comparing real acupuncture to sham acupuncture and usual care given at the physician’s discretion. Sham acupuncture is designed to mimic the experience of real acupuncture with a similar overall relaxing experience, but there are a few key differences: Sham acupuncture uses locations on the body that are not considered classic acupuncture points, and the needles do not penetrate the skin.

“Acupuncture should be seen as a complex intervention that involves both the needling and the care being delivered,” Mao explained. “Just believing you’re receiving a helpful treatment and engaging in relaxation by lying down for 20-30 minutes can have potential therapeutic benefits

even if the needles aren't inserted or aren't placed in specific therapeutic points. By comparing real acupuncture to sham acupuncture, and not just to usual care, we were able to better understand whether the benefits were due to the acupuncture technique itself or to the overall experience."

The clinical trial enrolled 260 women with a history of stage 0-3 breast cancer who completed treatment, showed no signs of cancer, and self-reported moderate or greater cancer-related cognitive difficulties and insomnia. Participants were randomly assigned to receive real acupuncture (129), sham acupuncture (70), or usual care (61). Real or sham acupuncture treatments were delivered once weekly for 10 weeks, and cognitive function was evaluated at baseline, 10 weeks, and 26 weeks.

Perceived cognitive function was measured using the Functional Assessment of Cancer Therapy - Cognitive Function (FACT-Cog PCI), a validated patient-reported outcome that asks patients to complete a survey about how they feel their memory, attention, and ability to perform daily tasks have been affected. Objective cognitive function was measured via the Hopkins Verbal Learning Test-Revised (HVLT), which measures memory, learning, or attention performance using standardized tasks.

"These two measures capture different aspects of cognition and often don't align," Mao said. "In our study, among participants who reported moderate to severe cognitive difficulties and met eligibility for enrollment, only 30% met the criteria for objective cognitive impairment as measured by the HVLT. This mismatch highlights the importance of using both tools together as they provide a more complete picture."

After 10 weeks, those in the real acupuncture and sham acupuncture arms showed clinically meaningful improvement in perceived cognitive impairment as measured by FACT-Cog PCI scores: a 10.3-point improvement and 10.5-point improvement, respectively, compared with a 4.8-point improvement in the usual care group. Real acupuncture also showed a twofold improvement at reducing perceived cognitive impairment compared with usual care at both 10 weeks and 26 weeks, while the difference between real and sham acupuncture was not significant at either point.

"The fact that real and sham acupuncture produced similar effects in improving perceived cognitive function may be because sham acupuncture, although not stimulating the body in the same way, still offers benefits like personal attention, relaxation, and a sense of being cared for, all of which can improve how people feel," Mao explained.

While real acupuncture improved HVLT scores, sham acupuncture had no difference on objective cognition function. At week 10, real acupuncture was significantly better than sham acupuncture with a 4-point difference in HVLT scores. Overall, real acupuncture and usual care showed similar results at improving objective cognitive function. However, in the subset of patients who were found to have impaired objective cognitive function at baseline, real acupuncture was associated with a promising trend in improving memory compared with usual care and sham acupuncture.

“Previous research using brain scans in people with memory issues or with pain suggests that real acupuncture may more effectively stimulate specific areas of the brain involved in memory, attention, and learning,” Mao explained. “While our study also shows that acupuncture needling may have potential benefit for improving objective cognitive function for those with some impairment, future studies are needed to specifically verify this.”

Adverse events were mostly mild and limited to the real acupuncture arm with bruising being the most common (3.1% of participants). Outside of acupuncture, the study also found that insomnia was significantly linked to objective cognitive performance and that sleep fragmentation—the number of awakenings and awakening time—was significantly associated with worse performance on objective cognitive tests.

“Cognitive difficulties for women with breast cancer are complex and involve finding ways to address both the distress associated with perceived cognitive abilities as well as objective function,” Mao said. “While this trial showed that acupuncture’s ability to improve a patient’s perceived cognitive difficulty is likely due to the process of receiving acupuncture care rather than specific needling techniques, it is still reasonable for women with breast cancer to try a course of acupuncture to see if it can help improve their sense of cognitive difficulty. It may also benefit objective cognitive function, but we hope future trials with larger samples of patients with objective cognitive impairment will provide more conclusive evidence.”

Limitations of this study include a small sample of patients who met the criteria for objective cognitive impairment at baseline. The trial was also conducted at a single, large, urban academic cancer center with participants limited to female breast cancer survivors, so results may not be generalizable to male survivors, survivors with other cancer types, or survivors in community or rural settings. The trial was conducted during the COVID-19 pandemic, which may have introduced other variables related to a patient’s stress and care.

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