

# Mindfulness-based stress reduction diminishes chemo brain

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Participation in a mindfulness-based stress reduction program yields robust and sustained improvement in cancer-related cognitive impairment, a prevalent and potentially debilitating condition that affects attention, memory and executive function in survivors, according to a new study from the Regenstrief Institute and Indiana University School of Medicine.

Although cancer-related [cognitive impairment](#), sometimes referred to as chemo brain or post-cancer cognitive fuzziness, is common among survivors—disrupting social relationships, work ability, self-confidence, and quality of life—clinicians have few treatment options to offer. Cognitive deficits have been seen to persist for more than a decade following cancer treatment for many survivors.

"Randomized Controlled Pilot Trial of Mindfulness-based Stress Reduction for Breast and Colorectal Cancer Survivors: Effects on Cancer-related Cognitive Impairment," published online in advance of print in the *Journal of Cancer Survivorship*, is the first [randomized clinical trial](#) to evaluate the effects of mindfulness-based [stress reduction](#), known as MBSR, on fatigued breast and colorectal cancer survivors, the majority of whom had been treated with chemotherapy.

In the study, MBSR participants reported significantly greater improvement in the ability to pay attention, and also made fewer mistakes on difficult cognitive tasks than those in the control group, which received patient education materials and supportive counseling.

Both groups attended eight weeks of two-hour classes led by skilled facilitators.

Retention rates in the trial exceeded 95 percent, strongly suggesting that participants found the program to be worthwhile. Previous studies by the Regenstrief-IU research group have found MBSR to have a positive impact on post-cancer fatigue, depression and sleep disturbance.

Mindfulness training is thought to improve cognitive functioning through mechanisms of focused attention and non-reactive coping with one's internal experiences, such as thoughts, feelings, and bodily sensations. Programs in MBSR include a variety of meditation and yoga practices and other elements. These programs typically range in cost between \$200 and \$800 for an eight-week program, and are widely available in communities and over the Internet.

Those who participated in the MBSR arm of the Regenstrief-IU study reported significant engagement with high rates of self-reported home practice of mindfulness techniques during the study. The majority continued to practice mindfulness throughout the six-month period following conclusion of the program.

"More people than ever are surviving cancer due to the development of targeted and effective treatments," said Shelley Johns, Psy.D., the clinical health psychologist and health services researcher who led the Regenstrief-IU study. "Yet many cancer survivors are living with difficult and persistent side effects of these treatments, which can be incapacitating.

"Mindfulness meditation practices enable cancer survivors to better manage cancer-related cognitive impairment, reported by approximately 35 percent of [cancer survivors](#) who have completed treatment," said Dr. Johns, who is a Regenstrief Institute investigator and assistant professor

of medicine in the IU School of Medicine. "MBSR provides a creative solution for survivors whose social and occupational functioning may have been negatively impacted by cognitive difficulties."

While some oncologists provide patients with information on cancer-related cognitive impairment, the majority of clinicians do not address this symptom due to lack of evidence-based treatments for the condition according to Dr. Johns.

Provided by Indiana University

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