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Study shows clear new evidence for mind-body connection

Impact of meditation, support groups seen at cellular level in breast cancer survivors

CALGARY — For the first time, researchers have shown that practising mindfulness meditation or being involved in a support group has a positive physical impact at the cellular level in breast cancer survivors.

A group working out of Alberta Health Services' Tom Baker Cancer Centre and the University of Calgary Department of Oncology has demonstrated that telomeres – protein complexes at the end of chromosomes – maintain their length in breast cancer survivors who practise meditation or are involved in support groups, while they shorten in a comparison group without any intervention.

Although the disease-regulating properties of telomeres aren't fully understood, shortened telomeres are associated with several disease states, as well as cell aging, while longer telomeres are thought to be protective against disease.

"We already know that psychosocial interventions like mindfulness meditation will help you feel better mentally, but now for the first time we have evidence that they can also influence key aspects of your biology," says Dr. Linda E. Carlson, PhD, principal investigator and director of research in the Psychosocial Resources Department at the Tom Baker Cancer Centre.

"It was surprising that we could see any difference in telomere length at all over the three-month period studied," says Dr. Carlson, who is also a U of C professor in the Faculty of Arts and the Cumming School of Medicine, and a member of the Southern Alberta Cancer Institute. "Further research is needed to better quantify these potential health benefits, but this is an exciting discovery that provides encouraging news."

The study was published online today in the journal *Cancer*. It can be found at: <http://onlinelibrary.wiley.com/doi/10.1002/cncr.29063/full>

A total of 88 breast cancer survivors who had completed their treatments for at least three months were involved for the duration of the study. The average age was 55 and most participants had ended treatment two years prior. To be eligible, they also had to be experiencing significant levels of emotional distress.

In the Mindfulness-Based Cancer Recovery group, participants attended eight weekly, 90-minute group sessions that provided instruction on mindfulness meditation and gentle Hatha yoga, with the goal of cultivating non-judgmental awareness of the present moment. Participants were also asked to practise meditation and yoga at home for 45 minutes daily.

In the Supportive Expressive Therapy group, participants met for 90 minutes weekly for 12 weeks and were encouraged to talk openly about their concerns and their feelings. The objectives were to build mutual support and to guide women in expressing a wide range of both difficult and positive emotions, rather than suppressing or repressing them.

The participants randomly placed in the control group attended one, six-hour stress management seminar.

All study participants had their blood analysed and telomere length measured before and after the interventions.

Scientists have shown a short-term effect of these interventions on telomere length compared to a control group, but it's not known if the effects are lasting. Dr. Carlson says another avenue for further research is to see if the psychosocial interventions have a positive impact beyond the three months of the study period.

Allison McPherson was first diagnosed with breast cancer in 2008. When she joined the study, she was placed in the mindfulness-based cancer recovery group. Today, she says that experience has been life-changing.

"I was skeptical at first and thought it was a bunch of hocus-pocus," says McPherson, who underwent a full year of chemotherapy and numerous surgeries. "But I now practise mindfulness throughout the day and it's reminded me to become less reactive and kinder toward myself and others."

Study participant Deanne David was also placed in the mindfulness group. "Being part of this made a huge difference to me," she says. "I think people involved in their own cancer journey would benefit from learning more about mindfulness and connecting with others who are going through the same things."

The research was funded by the Alberta Cancer Foundation and the Canadian Breast Cancer Research Alliance.

Calgary-area cancer patients can access information about Alberta Health Services programs in both mindfulness meditation and supportive expressive therapy, as well as other support programs at the Tom Baker Cancer Centre, by calling 403-355-3207.

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