

Study: Breast Cancer Patients Can Outsmart Stress

With cancer comes stress. A lot of it. And that stress impacts your immune system and your ability to fight disease. What if you could learn how to cope with that stress in the comfort of your own home?

Thanks to positive data from an earlier in-person study, researchers at Sylvester Comprehensive Cancer Center are helping breast cancer patients outsmart stress for better health — the “smart” referring to Stress Management and Relaxation Training. Only this time, they are taking the training to the patients.

Through the VSMART (Video-conferenced Stress Management and Relaxation Training) [clinical research study](#), female breast cancer patients over age 50 will participate in weekly live group stress-reduction workshops. To make it even less stressful, participants in the study use electronic tablets and convenient video conferencing.

“Stress can reduce the body’s positive immune response to fighting diseases, and also can decrease the success of the flu vaccine, even in healthy people,” says [Dr. Michael Antoni](#), lead investigator. Dr. Antoni is the Behavioral Intervention Theme Leader in the [Cancer Control Research Program at Sylvester](#) and the Director of the University of Miami Center for Psycho-oncology Research.

“Our past work studied the [effect of decreasing stress on breast cancer patients](#) who attended in-person cognitive behavioral stress management groups,” he says. “This new study lets us expand the potential number of people who we can help by using everyday technology in the home.”

Does Location Matter?

Dr. Dolores Perdomo is the study's co-investigator and coordinator and an assistant professor in the Miller School of Medicine. She says the research aims to answer two primary questions.

“First, we wish to find out the differences in stress protection levels if the support group is received remotely instead of in-person. Second, we want to know if the order of support/vaccine administration makes a difference. If a breast cancer patient takes part in the group sessions *before* getting the vaccine, will the vaccine be more effective than if she took part in group sessions after a vaccination? Will her quality of life be different? We don't yet know the answers.”

To qualify, enrollees must be 50 years or older; diagnosed with non-metastatic breast cancer; have already had their cancer removed surgically or are soon to have surgery; but not yet be receiving chemotherapy or radiation therapy. Participants will take part in 10 weekly video conference support group sessions and will gain access to videos covering multiple aspects of stress management. Along the way, each participant will complete online surveys, give samples of saliva and blood, and receive the influenza vaccine.



Mind-Body, Body-Mind Relationships

The research is the latest chapter in a history of interdisciplinary studies by Dr. Antoni and others at Sylvester and the University of Miami Health System. He and

[Dr. Charles Carver](#) had researched the relationship between stress and breast cancer since the 1980s. Dr. Carver, who passed away this year, was a Distinguished Professor of Psychology and Director of the Adult Division of the Psychology Department.

Additionally, Dr. Antoni has worked closely with [Dr. Bonnie B. Blomberg](#), Professor of Microbiology/Immunology at the Miller School of Medicine, an expert in how aging, inflammation, and obesity negatively affect the immune system and vaccine responses. Their collaborative work found decreased inflammation, improved immune measures, and increased survival for breast cancer patients trained in cognitive-behavioral stress management, or CBSM.

“We developed the CBSM group based on psychological intervention principles,” says Dr. Antoni. “In our earlier work with post-surgical breast cancer patients with a median age of about 50, the women took part in 10 weekly in-person CBSM group meetings. They learned stress management coping skills. The difference between these women and similar patients in our control group who did not receive the training was measured in the short- and long-term.”

According to Dr. Antoni, women who participated were shown to have less distress and fewer depressive and anxiety symptoms over 12 months.

11 years later

The VSMART research team looked at the same women’s medical records to see if the positive impact was long-lasting.

“We found that these women had a reduced inflammatory gene expression during the first 12 months,” he says. “They had less depression, less stress, a higher quality of life and experienced longer lengths of time cancer-free at 11-year median follow-

up. Importantly greater decreases in leukocyte gene expression for inflammation and greater increases in antiviral- and antibody-making gene expression over the initial 12 months predicted a longer time until recurrence over the subsequent 11-year follow-up.”

Improving Vaccination Success

An important part of the study is the administration of the flu vaccine. Dr. Antoni says that how successful the vaccine is received indicates how well someone’s body is creating antibodies to mount an antiviral response. Systemic inflammation, however, can work against a protective antiviral immune response.

“Our white blood cells, called leukocytes, help the body fight infection and other diseases,” he says. “Too much continuous mental stress, however, can cause a surplus of certain white blood cells to have their inflammatory signaling programs activated. It’s as if our fight or flight response goes on overdrive.”

By decreasing stress regularly, doctors now believe we can keep levels of these inflammatory cells under control. Also, decreasing inflammatory signaling may improve how our bodies naturally defend us against viruses and cancerous cells. In addition, vaccines perform better if we are not under excessive stress.

“When we can maintain a less anxious, less depressed state, we create more ideal conditions for something like the flu vaccine to do its work,” says Dr. Antoni. “This is especially important in older populations undergoing treatment for breast cancer, other cancers and/or chronic diseases. Getting the flu can compromise an already weak immune system. It can mean having to delay necessary treatments, which creates additional risks for the patient.”

VSMART Enrollment Details

If you are a woman over 50-years-old and recently diagnosed with breast cancer for the first time, you can learn more about VSMART today.

Call Dr. Dolores Perdomo at 305-431-2574 or email dperdomo@med.miami.edu for details about enrollment criteria. VSMART is funded by a grant from the Florida Department of Health.

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