Natural Killer Cells and Lymphocytes Increase in Women with Breast Cancer Following Massage Therapy

Maria Hernandez-Reif¹, Tiffany Field ¹, Gail Ironson², Julia Beutler³, Yanexy Vera¹, Judith Hurley⁴, Mary Ann Fletcher⁵, Saul Schanberg⁶, Cynthia Kuhn⁶ & Monica Fraser⁷

¹Touch Research Institutes, University of Miami School of Medicine
²Department of Psychology, University of Miami
³Office of Research, University of Miami
⁴Hematology/Oncology Clinics Jackson Memorial Hospital
⁵Department of Medicine EM Papper Laboratory, University of Miami
⁶Department of Pharmacology, Duke University Medical School
⁷Biotone, Inc

Summary

Fifty-eight women (mean age = 53 yrs old) with breast cancer were assigned to a massage, relaxation or standard care control group. The massage group received 30-min massages three times a week for 5 weeks by massage therapists and the relaxation group conducted progressive muscle relaxation exercises of the same duration and on the same time schedule as the massage group. The women were evaluated on the first and last days of the study for mood, pain, and anxiety. Blood and urine samples were also collected to assay immune measure profile and urinary hormone values. The massage and relaxation groups reported less depressive symptoms, anxiety and pain after their first and last sessions. However, by the end of the study, only the massage group reported being less depressed, anxious and angry and having more vigor. With respect to immune measures, Natural Killer cell numbers (NK cells) increased by 12% for the massage group. This may be of clinical significance given that NK cells fight tumors and viruses. Dopamine and serotonin levels, neurotransmitter levels associated with depression, also increased by 59% and 36% respectively, corroborating the massage group’s self-report of decreased depressive symptoms. Overall, these findings support the use of massage therapy for women with breast cancer to improve their psychological as well as their biochemical and immune profiles.

Published in: International Journal of Neuroscience, 115, 495-510.