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A new pilot study by investigators at Memorial Sloan Kettering Cancer Center (MSKCC) found that [breast cancer](#) patients can be treated safely with a “dose-dense” regimen of standard chemotherapy agents and the antibody trastuzumab (Herceptin®), a drug that has previously been shown to cause cardiac toxicity. While previous reports evaluating the cardiac effects of breast cancer treatments including trastuzumab and anthracyclines have shown an acceptable safety margin, the new study demonstrates an even lower risk of cardiac toxicity when standard doses of these drugs are administered more frequently over time — a treatment plan called “dose-dense,” which has previously been shown to be a more effective anti-cancer approach.

The researchers used a dose-dense regimen of doxorubicin (Adriamycin®) and cyclophosphamide (Cytoxan® or Neosar®) followed by paclitaxel (Taxol®) and found that the regimen - when given every two weeks instead of three — pairs safely with trastuzumab, a drug that is used to treat breast cancer in women whose tumors contain the protein receptor called HER2.

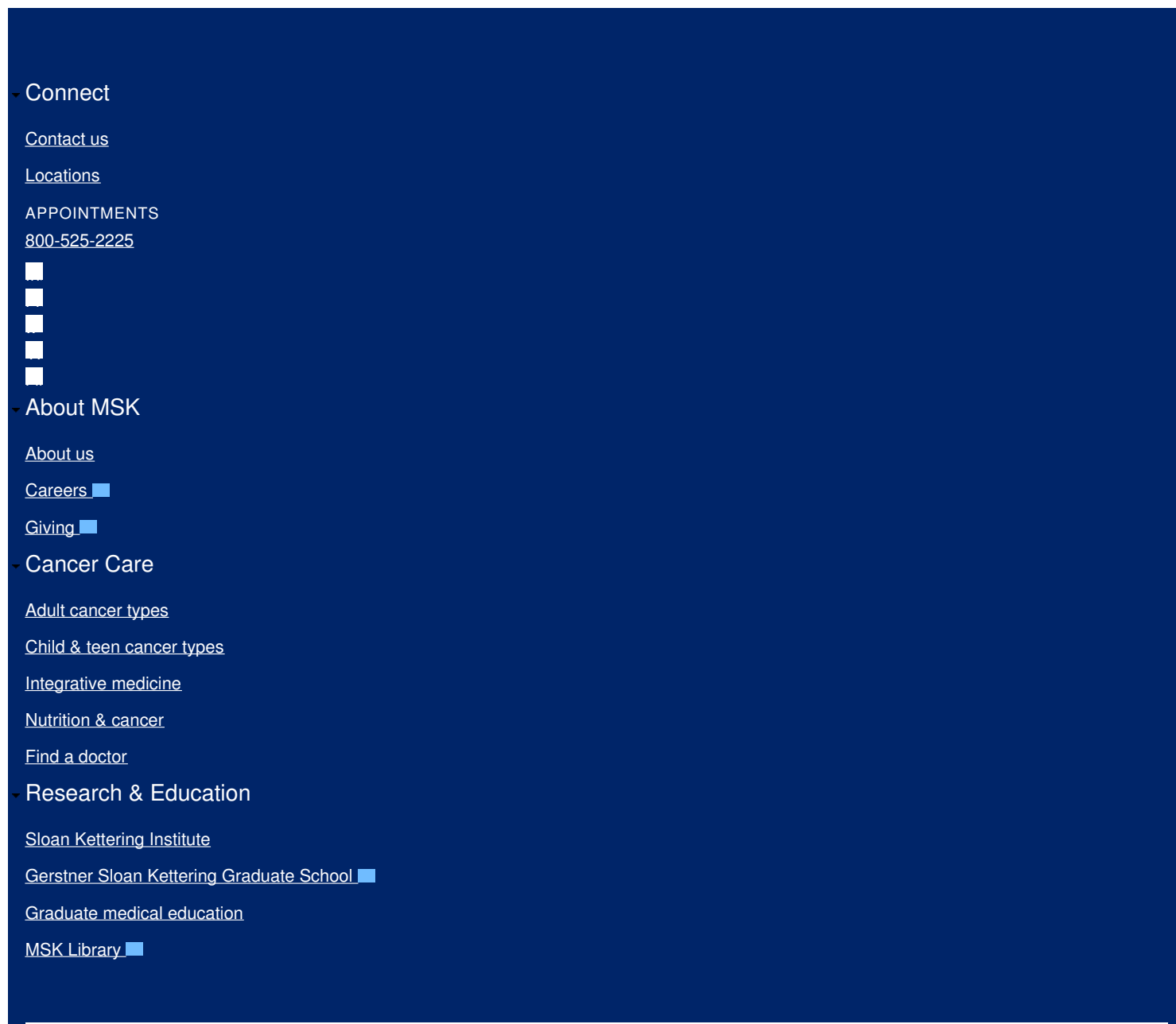
Cardiac Effects Associated with Breast Cancer Treatment Appear Lower with
Dose-Dense Delivery of Conventional Chemotherapy

According to the findings, only 1.4 percent (one patient) of the 70 early-stage breast cancer patients treated with this regimen experienced congestive heart failure after 28 months of follow-up. This rate of cardiac toxicity is lower than the 4 percent threshold that is generally considered acceptable, and still lower than what was found in larger, previously published trials evaluating conventionally scheduled treatment with the use of trastuzumab.

The study's authors concluded that this dose-dense regimen combined with trastuzumab is a safe and effective way to treat women with early-stage HER2-positive breast cancer in the adjuvant setting and there is no need to forgo the use of this regimen because trastuzumab is also being administered.

[Chau Dang, MD](#), a medical oncologist on the Breast Cancer Medicine Service at MSKCC, led the study, and [Clifford Hudis, MD](#), Chief of the Breast Cancer Medicine Service at MSKCC, is the paper's senior author.

The study will be published in the March 10, 2008, issue of the *Journal of Clinical Oncology* and was supported by grants from Genentech and Amgen. [\[PubMed Abstract\]](#)



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