

# Immune function marker does not predict benefit of trastuzumab in HER-2+ breast cancer

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A marker of immune function that predicts for better outcomes in patients treated with chemotherapy for triple negative breast cancer is also linked to improved prognosis in patients treated with chemotherapy for HER2-positive breast cancer. But that marker—the quantity of tumor-infiltrating lymphocytes (S-TILs) in a biopsy—appears irrelevant when trastuzumab is used.

And since [trastuzumab](#), and not chemotherapy alone, is the standard of care for the HER2-positive sub-class of breast cancer, there is no need to test for these lymphocytes in HER2-positive patients in order to predict outcome, say researchers from Mayo Clinic in Florida.

These findings, presented at the [2014 San Antonio Breast Cancer Symposium](#), don't mean that [immune function](#) in this class of cancer isn't important—just that it is likely more complicated than measuring the number of these lymphocytes, says the study's lead author, Edith A. Perez, M.D., deputy director at large, Mayo Clinic Cancer Center, and director of the Breast Cancer Translational Genomics Program at Mayo Clinic in Florida.

"Researchers are really interested in the different components of the immune system as a predictor of the natural history of breast cancer and benefit from different therapies, but it may be that when trastuzumab is used, it is the function of the immune system and not the number of

lymphocytes that is important," Dr. Perez says.

She also pointed out that S-TILs can do two things—they can promote the killing of tumors but they can also actually create substances to help cancer grow. "We don't know what effect they have when trastuzumab is used," she says.

The study measured S-TILs at diagnosis in about 1,000 patients with early stage HER2-positive breast cancer enrolled in the N9831 study, which tested chemotherapy alone or chemotherapy with trastuzumab. Only patients treated with [chemotherapy](#) alone showed improved recurrence-free survival when the S-TILs score was high.

The findings contradict a smaller study of HER2-positive patients that found increased levels of S-TILs were linked to increased trastuzumab benefit. That study suggested that tumors of patients with HER2-positive disease should be tested for their S-TILs score in order to determine therapy benefit.

"Ours is a much more definitive study, showing this testing is not necessary in this subset of patients with HER2-positive [breast cancer](#)," Dr. Perez says.

"This study is part of a series we are conducting to determine which [patients](#) should use trastuzumab. We are now giving it to everyone whose tumors are HER2-positive, but not every patient benefits," she says.

Provided by Mayo Clinic

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