



### To Chemo, or Not to Chemo? That is the Question



*Dr. Terry Mamounas,  
MD, MPH*

Most breast cancer survivors carry the fear their cancer will come back ([recurrence](#)). Although there are treatment plans that can minimize this risk, which therapies a person gets, and how much, depends on many factors and can be a challenging decision for doctors and their patients. Dr. Terry Mamounas, a Komen Scholar, surgical oncologist, and Medical Director of the Comprehensive Breast Program at MD Anderson Cancer Center in Orlando, Florida has discovered a new way that a diagnostic test, called Oncotype DX<sup>®</sup>, can be used to help doctors and patients choose the most optimal treatment plan for each individual's breast cancer.

Hormone therapies such as tamoxifen are used to treat certain types of breast cancer to reduce the risk of recurrence. In addition to hormone therapy, some women will have added benefit by receiving chemotherapy.

But not all women have the same risk of recurrence and will benefit from the addition of chemotherapy. The decision to add chemotherapy has been an area of uncertainty for doctors and their patients.

The [Oncotype DX<sup>®</sup>](#) test can predict the likelihood that a woman's cancer will come back (called a prognostic test) and also help doctors decide which patients may benefit most from chemotherapy and who can safely avoid it (called a predictive test). For example, patients with a very low Oncotype DX<sup>®</sup> score, indicating a low risk of recurrence, may decide that the small potential benefit from chemotherapy may not be worth the risk of side effects.

Until recently, Oncotype DX<sup>®</sup> has been shown to be most helpful for women with an early-stage cancer that is [estrogen-receptor positive](#) (ER+) and who have no cancer in the lymph nodes (called node negative). However, [new studies](#) from Komen Scholar Dr. Terry Mamounas suggest Oncotype DX<sup>®</sup> may also be useful for other patients, including those whose breast cancer has already spread to the lymph nodes. "It is important to [further] evaluate the prognostic and predictive utility of [Oncotype DX] in order to determine if it could be used in a way that would benefit a broader array of patients," says Dr. Mamounas.

With support from a Komen Scholar grant, Dr. Mamounas analyzed tissues from over 1,000 patients with ER+, lymph node-positive breast cancer who were treated with hormone therapy and chemotherapy as part of a previously conducted clinical trial. He found that in these patients, Oncotype DX<sup>®</sup> could reliably predict their remaining risk of recurrence even after receiving chemotherapy, and despite differences in age, tumor size, and the number of positive lymph nodes. The results also showed that Oncotype DX<sup>®</sup> could help determine which patients would benefit from the addition of a second type of chemotherapy.

**Results of the Oncotype DX test are given as a Recurrence Score. Patients with a high score and a higher risk of recurrence are likely to benefit from chemotherapy, whereas patients with a low score and risk of recurrence are probably not likely to benefit from chemotherapy.**

Consistent with other previous studies, this study shows that for patients with a low Oncotype DX® recurrence score, giving a second type of chemotherapy beyond initial treatment provides no additional benefit. Patients with an intermediate or high score showed a small trend for benefit from a second type of chemotherapy after completing their initial treatment. In yet another study, Dr. Mamounas showed that Oncotype DX® can predict risk of a type of recurrence called [loco-regional recurrence](#) - cancer that has come back in the same region as the original tumor - and as a result can help tailor the extent of radiation therapy that a patient needs.

Dr. Mamounas' studies show the Oncotype DX® test can not only help identify those who will have excellent outcomes following chemotherapy plus hormone therapy, but also help physicians tailor the types of chemotherapy and radiation treatments. "We can identify patients with a high risk of recurrence in spite of receiving chemotherapy. We can try to find a better treatment for them or enroll them in a clinical trial. By contrast, patients with low residual risk may do well with less treatment," says Dr. Mamounas. His research demonstrates the continued efforts of Komen-funded researchers to help physicians and breast cancer patients answer important questions that will help guide their treatment decisions.

These findings were recently presented at the 2012 Breast Cancer Symposium, the 2012 San Antonio Breast Cancer Symposium and the 2013 Annual Meeting of the Society of Surgical Oncology, and are in the process of being submitted for publication.

### Types of recurrence

**Local** - cancer that has come back close to or in the same place as the original tumor

**Loco-regional** - cancer that has come back in the same region as the original tumor including the lymph nodes

**Distant** - cancer that has come back in another part of the body (bone, brain, etc.)

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