

# Genetic profiling: identifying high-risk breast cancer recurrence

## Florida Cancer Institute

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For years, researchers have suspected that each cancer patient's disease is highly individualized," observes Gail Shaw Wright, MD, FACP, FCCP, of Florida Cancer Institute.

"We noticed that breast cancers in different patients respond differently to identical treatment modalities. Until recently, however, scientists could not determine what it was about a particular cancer that caused it to respond, or not respond, to a particular therapy, nor could they find a reliable way of predicting which patients were most likely to experience a recurrence after treatment."

Recent studies in genetic profiling have opened a new avenue for helping doctors determine whether a patient is at heightened risk of developing breast cancer, and whether women who have been treated for breast cancer are at heightened risk of recurrence.



*Gail Shaw Wright, MD, FACP, FCCP, is Board Certified in Internal Medicine and Medical Oncology by the American Board of Internal Medicine. She completed her undergraduate studies, graduating with Highest Honors, from the University of North Carolina (UNC) at Chapel Hill, where she also earned her Medical Degree and served her internship. She completed her Internal Medicine Residency at Duke University Medical Center, Durham, NC, and completed subspecialty Fellowship training in Oncology at the National Cancer Institute in Bethesda, MD. Dr. Wright has served as Program Leader for Cancer Prevention and Cancer Screening at the H. Lee Moffitt Cancer Center and Research Institute in Tampa, FL, where she was also a member of the Thoracic Oncology Program.*

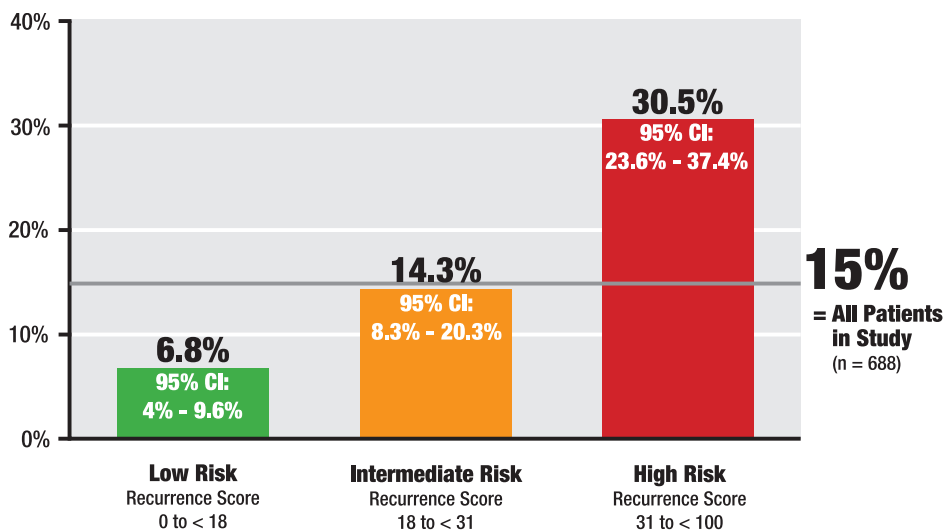
### What happens?

Studies chronicled in abstracts at the San Antonio Breast Cancer Symposium in December 2004 identified mutations in the BRCA1 and BRCA2 genes that are associated with both breast and ovarian cancers.

"What was surprising," says Dr. Wright, "is that these inherited mutations behaved in markedly different ways from each other."

Women who inherited BRCA2 mutations developed cancers that were estrogen-receptor positive, and responded well to hormonal therapy. Those who inherited BRCA1 mutations developed cancers that were estrogen-receptor *negative*.

Also in December 2004, the *New England Journal of Medicine* described a study that showed women who de-



veloped recurrent cancer post-surgically, despite being treated with the chemotherapy drug tamoxifen, had genetic profiles that correlated to these same genetic markers.

"This was exciting news," says Dr. Wright, "because we had been hearing about the possibility of using genetic profiling to predict cancer recurrence in women with node-negative cancers for several years. This is the first report that gave concrete proof of its efficacy."

Doctors can now use a genetic assay, the Oncotype DX™ by Genomic Health, Inc., to quantify the likelihood of distant recurrence in women with newly diagnosed, early stage invasive breast cancer.

Without the information provided by genetic profiling, women at very low risk for recurrence continue to be treated post-surgically with chemotherapy, simply be-

cause doctors have had no way, until now, to determine which patients were at high risk.

"Genetic profiling is still new," observes Dr. Wright, "but it offers us the hope that with genetic testing, we will be able to more accurately determine which patients require more aggressive treatment protocols to avoid a later recurrence after surgery." *FHCN—Billie S. Noakes*

### Your hometown team...

*The oncologists at Florida Cancer Institute welcome questions regarding the newest advances in cancer care. For further information, call the Institute, located at 8763 River Crossing Blvd. in New Port Richey, (727) 842-8411; or the Institute, located at 13906 Lakeshore Blvd., Suite 330, in Hudson, (727) 863-8563. You may fax questions to (727) 847-2923.*