Breast cancer prognostic tests have become an essential component of breast cancer care. Oncology nurses play an important role in assisting patients in their understanding of and decision making regarding the use of prognostic tests in treatment planning. This article outlines the most commonly used breast cancer prognostic tests, including the individual assay's purpose, its genomic makeup, the targeted patient population, and its prognostic and predictive abilities. Key nursing implications are discussed, highlighting how nurses can best apply knowledge of breast cancer prognostic tests to nursing practice.

AT A GLANCE

- Oncology nurses play a significant role in educating patients on the role of prognostic tests in breast cancer care, as well as the difference between tumor testing and other types of genetic testing.
- It is important that oncology nurses educate patients on the purpose of tumor testing, what information the testing will provide, and how to use the information obtained from testing for treatment decisions.
- Patients should be supported by oncology nurses through the treatment decision-making process based on the results of prognostic testing.

KEYWORDS
breast cancer prognostic tests; genomic assays; breast cancer tumor tests

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Breast Cancer Prognostic Tests

Helping patients understand testing results and their implications

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Precision medicine in the field of oncology has paved the way for rapid advancements in cancer treatment and for the ability to personalize patient care. Given these advances, the role of the oncology nurse in caring for newly diagnosed patients with breast cancer has become increasingly complex. Patients have numerous options to consider during the evaluation and planning stages for the treatment of their disease. Breast cancer prognostic tests, in the form of gene expression assays, are primarily used in the initial workup of newly diagnosed patients to have a clearer understanding of risk of distant recurrence to guide treatment planning. Breast cancer prognostic tests have been part of the landscape of breast cancer evaluation and treatment since 2004 and have continued to evolve. Second-generation prognostic tests—including Breast Cancer Index (BCI), EndoPredict®, and Prosigna (formerly known as the PAM50 test)—followed first-generation prognostic tests, such as Oncotype DX and MammaPrint. Prognostic tests have gained momentum and are now a guiding force in determining recurrence risk and in directing treatment (see Table 1).

Understanding the differences in prognostic tests and helping patients understand their options based on the results of these tests are integral responsibilities of the oncology nurse. This article provides an overview of key breast cancer prognostic tests available and discusses the role of the oncology nurse in understanding and applying his or her knowledge of breast cancer prognostic tests to patient care, education, and support.

Breast Cancer Prognosis and Treatment

Factors such as tumor size, nodal status, lymphovascular invasion, histologic grade, markers of proliferation (e.g., Ki-67), hormone receptor status (estrogen receptor [ER] and progesterone receptor), and human epidermal growth factor receptor 2 (HER2) status remain important to consider when estimating prognosis and considering treatment options (Győrffy et al., 2015). The emergence of breast cancer prognostic tests has allowed for the provision of important information like genetic markers in addition to clinical and pathologic factors to determine prognosis.

Breast cancer prognostic tests are primarily designed for use in women with early-stage breast cancer to determine risk of distant recurrence. This information is helpful in treatment planning and can factor into decisions regarding chemotherapy benefit and/or extended endocrine (hormone) therapy benefit beyond five years (Burstein et al., 2019). Assays are usually performed on formalin-fixed, paraffin-embedded tissue in a central laboratory, with the exception of Prosigna, where the assay is performed in a decentralized setting with special equipment that can be purchased.