

# Risk Factors and Health Promotion in Families of Patients With Breast Cancer

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In 2001, 192,000 women were diagnosed with breast cancer (Greenlee, Hill-Harmon, Murray, & Thun, 2001). Up to 10% of those diagnoses may be linked to heredity (Loman, Johannsson, Kristoffersson, Olsson, & Borg, 2001). Close relatives of women with breast cancer frequently have an inaccurate view of their risk for developing the disease and may not adhere to the recommended guidelines for screening. They may be unaware of treatments that can alter their breast cancer risk and diagnostic tests that can promote earlier diagnoses and improved outcomes. Oncology nurses play a key role in education and counseling for these families and are in a position to promote primary and secondary prevention strategies.

## Risk Factors

All women should be educated and counseled about the risk factors for breast cancer (see Figure 1). Well-known risk factors for breast cancer include female gender and advancing age. A family history of breast or ovarian cancer also increases a woman's lifetime risk for developing the disease. Women have no control over these unmodifiable risk factors.

Hereditary breast cancer associated with the breast cancer susceptibility genes, breast cancer gene 1 (BRCA1) and breast cancer gene 2 (BRCA2), follows a pattern of autosomal dominant transmission (Colditz et al., 1993). Hereditary breast cancer may occur in only one of 10 women, negating the use-

Women with a family history of breast cancer have an increased risk of developing the disease. Women identified as "high risk" for developing breast cancer have been shown to exhibit increased levels of psychological distress and anxiety related to breast cancer. Oncology nurses can address this barrier and others, such as altered risk perception and lack of physician recommendation for screening. Oncology nurses also can identify high-risk families that may be candidates for genetic testing for breast cancer susceptibility, provide comprehensive teaching about breast self-examination (BSE), and clarify misconceptions about early detection. Primary prevention measures for hereditary breast cancer include prophylactic mastectomy and oophorectomy and chemopreventative agents. Secondary prevention measures include screening and early detection with mammography, clinical breast examinations, and BSE. Nurses have a responsibility to educate families of patients with breast cancer about risk factors, primary and secondary preventive measures, genetic testing, and screening recommendations.

fulness of widespread testing for genetic mutations, but identification of high-risk families is important (Claus, Risch, & Thompson, 1991; Loman et al., 2001). Individuals with three or more first-degree relatives diagnosed with breast or ovarian cancer may possess the BRCA1 or BRCA2 mutation, especially if the relatives were diagnosed with cancer at a younger age. Claus, Schildkraut, Iversen, Berry, and Parmigiani (1998) found that women with BRCA1 or BRCA2 mutations were 12–16 years younger at diagnosis than women without the mutation. Other high-risk characteristics

include bilateral or multifocal disease, male breast cancer, and ovarian cancer (Hoskins et al., 1995). The cumulative lifetime risk for breast cancer is 56%–92% in women who possess the gene (Claus et al., 1991; Easton, Ford, Bishop, & Breast Cancer Linkage Consortium, 1995; Struewing et al., 1997). About 2% of Ashkenazi (Eastern European) Jewish women carry either the BRCA1 or the BRCA2 mutation. These women have a 56% risk of developing breast cancer by age 70 and represent a common lineage in the United States (Struewing et al.).

Blood relatives of individuals with BRCA1- or BRCA2-negative breast cancer are two to five times more likely to develop familial breast cancer, especially if the affected individual is a mother or sister (American Cancer Society, 2000c; Sattin et al., 1985; Slattery & Kerber, 1993). Family members are exposed to

similar environmental risk factors, such as socioeconomic status and diet, which independently increase their risk of developing breast cancer. Other explanations include undiscovered genetic abnormalities or random clustering of nonhereditary cases (Claus et al., 1998; McCance & Jorde, 1998). Increased risk of breast cancer also may be associated with a family

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