**Etiology**

**Review: Breast cancer is associated with a family history of the disease in first-degree relatives**


**Question**
In women with a family history of breast cancer, how does the pattern of breast cancer in first-degree relatives affect the risk for developing the disease?

**Data sources**
Studies were identified by searching computerized literature databases, reviewing bibliographies of review articles, and contacting experts in the field.

**Study selection**
Selected studies were cohort or nested case-control studies that included ≥ 100 women with incident invasive breast cancer, and information about reproductive or hormonal factors was sought on each woman.

**Data extraction**
Principal investigators of the included studies were contacted for data on each woman regarding whether any of her first-degree female relatives (mother, sisters, or daughters) had been diagnosed with breast cancer and, if so, their age when the diagnosis was made. Data were also collected on the numbers of sisters and daughters of each woman and the ages of each unaffected first-degree female relative.

**Main results**
52 published and 2 unpublished studies included 58 209 women with breast cancer (mean age 52 y) and 101 986 women without breast cancer (mean age 53 y). 7496 women (12.9%) with breast cancer and 7438 women (7.3%) without had ≥ 1 first-degree female relative with a history of breast cancer. The risk for breast cancer increased with an increasing number of affected relatives (Table 1). Age-specific risk ratios (RRs) were not affected by race, age at menarche, education, height, weight, or use of contraceptives or hormone therapy. 27 studies provided data on the age that breast cancer was diagnosed in each first-degree relative. The risk for breast cancer increased as the age of relatives who had been diagnosed with breast cancer decreased (Table 2). The estimates of probability that a woman 20 years of age would develop breast cancer by age 50 were 1.7%, 3.7%, and 8.0% for women with 0, 1, and 2 affected first-degree relatives, respectively. The corresponding lifetime probability estimates (i.e., age 20 to 80) were 7.8%, 13%, and 21%. The probability estimates for death were 2.3%, 4.2%, and 7.6%.

**Conclusions**
Women with first-degree relatives with a history of breast cancer are at increased risk for developing the disease. The risk increases with an increasing number of affected relatives and is higher for younger than for older women.

**References**