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Breast Cancer Risk May be Overstated in BRCA Carriers

EDITED BY ELIZABETH WHITTINGTON

The risk for breast cancer may not be as high as previously thought for women who carry a BRCA mutation. Many studies report the risk to be as high as 80 percent, but new research published in January in the *Journal of the American Medical Association* suggests the risk may be exaggerated for some carriers.

The study showed the risk of developing breast cancer by age 70 ranges from 36 percent to 52 percent, depending on the age a first-degree relative was diagnosed with breast cancer, and these "average" risks are likely to be further influenced by additional genetic factors. Women with first-degree relatives who developed breast cancer before age 35 were at a higher risk, noted researchers.

Colin Begg, PhD, chairman of epidemiology and biostatistics at Memorial Sloan-Kettering Cancer Center in New York and coauthor of the study, says the research supports evidence that risk varies from family to family and carrier to carrier.

"It's certainly probable that if you happen to be in a family that has a strong family history of breast cancer, then your risk is probably in the high end," he says. "But on the opposite extreme, if you are screened and are found to be a carrier with no family history, you [may be] at the low spectrum of risk."

Whether this initial study affects prevention strategies in BRCA carriers, such as surgical removal of the breasts or ovaries to prevent cancer, remains to be seen. "The decision to take preventive measures, such as prophylactic mastectomy, is a personal decision that a woman makes when she finds she is a carrier," Begg says. "But it's really important that when they are making these decisions, women carriers are apprised of accurate estimates of risk, because that's really quite crucial."

Researchers say the variation in breast cancer risk among BRCA-carrying families may depend on additional cancer-causing mutations and, probably to a lesser degree, variations in each BRCA mutation. Lifestyle, environmental, and individual factors, such as age of first childbirth, may also affect risk. Studies are looking at so-called modifier genes and other factors that may more precisely estimate risk of cancer.

"It's a mistake to feel that everyone has this high 80 percent risk," Begg says. "That's the number they see, and it may not be applicable to all carriers."

