

# New model helps predict breast cancer risk in Hispanic women

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Mammograms showing a normal breast (left) and a breast with cancer (right).  
Credit: Public Domain

The first breast cancer risk-prediction model based entirely on data from Hispanic women, including whether a woman was born in or outside of the United States, provided a more accurate assessment of Hispanic women's risk of developing breast cancer compared with existing models based on data from non-Hispanic women, according to a study presented at the Eighth American Association for Cancer Research (AACR)

Conference on the Science of Cancer Health Disparities in Racial/Ethnic Minorities and the Medically Underserved, held Nov. 13-16.

"Currently, there is no [breast cancer](#) risk-prediction [model](#) for Hispanic women," said Matthew P. Banegas, PhD, MPH, investigator with Kaiser Permanente Center for Health Research in Portland, Oregon, and primary author of the study. "We developed a model based on data on ethnicity, nativity, and [breast cancer risk](#) factors, as well as incidence and mortality rates in Hispanic women, which allowed us to create a more specific tool to predict their risk of developing invasive breast cancer."

Presently, physicians and researchers use the Breast Cancer Risk Assessment Tool (BRCA2) from the National Cancer Institute (NCI) to estimate risk, counsel patients, and design breast cancer prevention trials. However, since it is based, in part, on data from women of other races and ethnicities, it does not accurately reflect the risk of breast cancer in Hispanic women, and tends to underestimate their risk, Banegas said.

"The goal of our work is to enable Hispanic women to better understand their risk of developing [invasive breast cancer](#). They will be able to discuss this information with their physician and what it means for them specifically," added Banegas.

Factors that are incorporated into the new prediction model include:

- A woman's age at first full-term pregnancy: Women who have children at younger ages tend to have a lower risk of breast cancer. Studies show that Hispanic women born outside the United States tend to start having children at a younger age than Hispanic women born in the United States.
- A woman's age at first menstrual period: The younger a woman is when she starts menstruating, the greater her lifetime exposure to

estrogen, which has been shown to increase breast [cancer risk](#). Prior research has shown that Hispanic women born outside the United States may be older when they start menstruating than Hispanic women born in the United States.

- Having had a biopsy for benign breast disease: Breast cancer risk is increased among women with benign breast disease. In the risk-prediction model, the risk associated with this factor was slightly greater for Hispanic women born outside the United States than for Hispanic women born in the United States.
- Family history of breast cancer in first-degree relatives: Women with a family history of breast cancer have higher risk of developing breast cancer. Prior studies show that Hispanic women born outside the United States are less likely to have a family history of breast cancer compared with Hispanic women born in the United States.

Banegas and colleagues used data from the San Francisco Bay Area Breast Cancer Study, focusing on 1,086 Hispanic women with breast cancer and 1,411 without breast cancer, to develop a Hispanic-specific breast cancer risk-prediction model. They separated the women into two groups: those who were born in the United States and those who were born outside the United States, then estimated risks for both groups, applying their estimates to incidence and mortality data from the California Cancer Registry and the NCI's Surveillance, Epidemiology, and End Results (SEER) program. The researchers validated their prediction model, in part, against data from Hispanic women in the Women's Health Initiative, and found that the model was well calibrated for Hispanic women born in the United States, but overestimated the risk in foreign-born Hispanic women. Prior research has shown that foreign-born Hispanic women have about half the breast cancer risk of U.S.-born Hispanic women.

Since the model was developed using data from women in the San

Francisco Bay area, it will be most applicable to women in that region, Banegas said. As researchers gather more data from Hispanic [women](#) in other parts of the United States and from those born outside the United States, those data should be incorporated into the model to increase the accuracy for those populations.

Provided by American Association for Cancer Research

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