



THE

# SISTER STUDY

BREAST CANCER RESEARCH

AFRICAN-AMERICAN SISTERS PLAY A KEY ROLE IN THE SISTER STUDY!

SPRING 2023

As African American women whose sister had a very scary type of breast cancer, we are committed to continuing our participation in the Sister Study. We want researchers to learn about our community's breast cancer risks so future generations don't have to face this horrible disease. We ask you to stay with us in the Sister Study!

*Sally-Ann and Dorothy Roberts, long-time Sister Study participants and sisters of Robin Roberts, anchor of ABC's "Good Morning America"*

**Your participation in the Sister Study has already helped researchers learn new information about African-American women and breast cancer.**

The Sister Study would like to know important changes in your health or contact information!

- Have you moved or changed your telephone number or e-mail address?
- Have you been diagnosed with cancer or another major illness?
- Have you had any major injuries or surgeries?
- Would you like to share any other information with the study?



## Study Suggests Black, Hispanic Women with Low Vitamin D More Likely to Develop Breast Cancer

Findings link sufficient vitamin D blood levels with lower breast cancer rates, particularly among Latinas.

Among women who identified as Black/African American or Hispanic/Latina, those with **low blood levels of vitamin D were more likely to develop breast cancer than those with adequate levels**. In the study published by Wiley online in *CANCER*, a peer-reviewed journal of the American Cancer Society, the link between low vitamin D and breast cancer was particularly evident among Hispanic/Latina women.

Black/African American or Hispanic/Latina have **lower average vitamin D levels than non-Hispanic white women**. Although research suggests that vitamin D may protect against breast cancer, few studies have considered the role of race/ethnicity in this link. To investigate, Katie O'Brien, PhD, of the National Institute of Environmental Health Sciences, and her colleagues collected blood samples from 415 women (290 Black/African American, 125 non-Black Hispanic/Latina) who later developed breast cancer, as well as from 1,447 women (1,010 Black/African American, 437 Hispanic/Latina) who did not develop breast cancer.

Over an average follow-up of 9.2 years, **women with sufficient vitamin D levels had a 21% lower breast cancer rate than women with vitamin D deficiency (<20 ng/mL)**. The link was strongest among Hispanic/Latina women, who had a 48% lower rate if they had sufficient vitamin D levels. The link was weaker among Black/African American women, who had an 11% lower rate if they had sufficient vitamin D.

"Together with prior studies on this topic, this article suggests that **vitamin D may be associated with reduced risk of breast cancer**, including among women who self-identify as Black, African-American, Hispanic, or Latina," said Dr. O'Brien. "Because women who identify as members of these groups have lower vitamin D levels, on average, than non-Hispanic white women, they could potentially receive **enhanced health benefits from interventions promoting vitamin D intake**. However, questions remain about whether these associations are truly causal and, if so, what levels of vitamin D are most beneficial." **Read more:** <https://tinyurl.com/LowVitD>

The Sister Study

877-4SISTER (877-474-7837)

[sisterstudy.niehs.nih.gov](https://sisterstudy.niehs.nih.gov)

## Association between neighborhood deprivation and hypertension in a US-wide Cohort US Black women

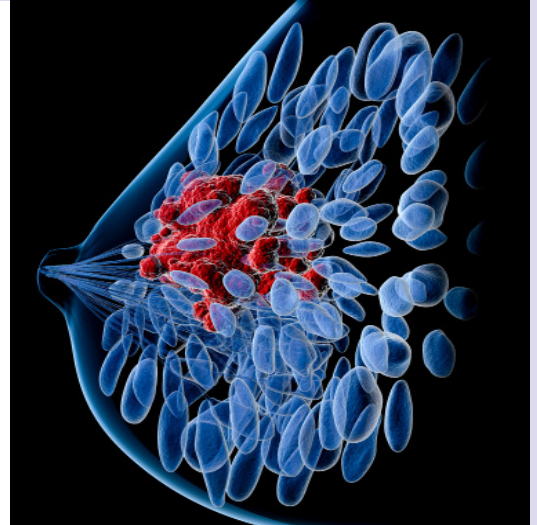
The prevalence of hypertension (high blood pressure) varies by race/ethnicity. Many studies have shown that **lower individual socioeconomic status is associated with higher risk of hypertension**, but less is known about the association between neighborhood level socioeconomic factors and hypertension. Using an established measure that summarizes across many different census variables we found that **women living in more disadvantaged neighborhoods had a higher prevalence of hypertension**. Compared with non-Hispanic white women in the least disadvantaged neighborhoods, self-identified non-Hispanic **Black women with higher neighborhood disadvantage had the highest prevalence of hypertension**. Physical activity tended to moderate some of the hypertension risk associated with neighborhood factors.

Read More: <https://tinyurl.com/DeprHyper>

## Pathogenic variants in US Black women

In addition to the known breast cancer genes, BRCA1 and BRCA2, **other inherited genes are also important in breast cancer**. Some are considered pathogenic, meaning they are predictive of an elevated breast cancer risk. In a very large study that included Sister Study participants, investigators found that the frequencies of inherited genetic mutations in 12 known pathogenic breast cancer genes **did not vary by race** (5.65% in Black women versus 5.06% in non-Hispanic white women). The biggest racial difference was seen for CHEK2, which was **more common in non-Hispanic white women with breast cancer** (1.29%) than Black women with breast cancer (0.38%). BRCA2 and PALB2 mutations were slightly more common in Black cases. The findings suggest that **policy changes related to genetic testing should not be based on race** and that all efforts should be made to ensure equal access and uptake to genetic testing.

Read More: <https://tinyurl.com/PathVar>



## Everyday racial discrimination and type 2 diabetes

In one of the follow-up questionnaires, we asked Sister Study participants about their experiences with discrimination. We defined 'everyday' discrimination as being treated **unfairly** while receiving a service, being treated as less intelligent or worthy, or experiencing people acting as if they were afraid of you. We defined 'major' discrimination as being specific to a particular event (e.g., being treated unfairly when renting or buying a house; being treated unfairly by the police; being treated unfairly at work). Non-Hispanic Black Sister Study participants were **more likely** to report having experienced everyday (75%) or major (51%) discrimination because of their race/ethnicity, relative to Non-Hispanic white (4% everyday, 2% major) or Hispanic/Latina participants (32% everyday, 16% major). **While everyday discrimination was not associated with the risk of developing type 2 diabetes during follow-up**, experiencing major discrimination was **associated with an increased risk**. This work provides evidence that **anti-discrimination efforts may help mitigate racial/ethnic disparities in the risk of type 2 diabetes**.

Read More: <https://tinyurl.com/DescDiabll>



## Polygenic risk score for breast cancer in women of African ancestry

Some African-American/ Black Sister Study participants were included in a large, collaborative study of genetic risk factors for breast cancer among women with African ancestry. The lead investigators were interested in understanding how summary measures of genetic risk, called "polygenic risk scores", would be associated with breast cancer in Black women. They found that the **scores were strongly associated with breast cancer risk** in women of African descent, though they were better predictors of risk in women of European, Asian or Latina descent. These results demonstrate that while there are **many genetic similarities** across these populations, more research is needed to **identify variants that better predict risk among women of African ancestry**.

Read More: <https://tinyurl.com/PRSCancerAA>



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As always, please contact us at the Sister Study helpdesk toll free at 877 4SISTER (877 474 7837) or email us at [update@sisterstudy.org](mailto:update@sisterstudy.org) if you have updates or questions.