

B-GREAT MILESTONES

October 2026



Welcome Message

Over the past year, we have explored various questions about genomics and inherited cancers, using data from our BEST study. These include studies that show that Black women with breast cancer: 1) use genetic testing to guide their surgical decisions,¹ and 2) have distinct features of their breast cancer in those with mutations in hereditary breast cancer genes.² We also did additional tumor testing among BEST study participants with hormone receptor positive disease, and found that they were more likely to have more aggressive subtypes of breast cancer compared to White women.³ On a similar topic, we reviewed breast cancer risk prediction models that we use, and how they were developed mainly in White women and therefore are not as well calibrated in Black women.⁴ Finally, we studied tumors in women with hereditary forms of breast cancer, including those enrolled in our BEST study, and showed that these tumors develop in a distinct way, which could be useful to guide the development of new treatments or predict risks.⁵

While we are grateful to be able to move the science forward, we also want to voice our thanks to the many women who have chosen to participate in our study, without whom these advances would not be possible. We are also grateful to the many entities that have provided funding for our work, which includes the Komen Foundation, the National Cancer Institute, Nashville Wine Auction, and most recently, the Breast Cancer Research Foundation, again without whom this work would not be possible.

With our sincere gratitude,

Tuya Pal, MD, FACMG & Sonya Reid, MD, MPH



References: ¹Roberson, et al. *Cancer Control*. 2025; 10732748251407739. PMID: 41360000. Article available at: <https://pubmed.ncbi.nlm.nih.gov/41360000/>. Social media post available at: <https://inheritedcancer.net/post12302025/>; ²Beasley, et al. *Cancer*. 2026;132(12):e70402. PMID: 42252839. Article available at: <https://pubmed.ncbi.nlm.nih.gov/42252839/>. Social media post available at: <https://inheritedcancer.net/post060926/>; ³Reid, et al. *NPJ Breast Cancer*. 2026; 12(1):68. PMID: 41857012. Article available at: <https://pubmed.ncbi.nlm.nih.gov/41857012/>. Social media post available at: <https://inheritedcancer.net/post051226/>; ⁴Reid S, Spalluto L, Pal T. *J Natl Compr Canc Netw*. 2025;24(1):e257079. PMID: 41671467. Article available at: <https://pubmed.ncbi.nlm.nih.gov/41671467/>. Social media post available at: <https://inheritedcancer.net/post01062026/>; ⁵ Yadav et al. *J Natl Cancer Inst*. 2026;118(8):1416-1424. PMID: 41832987. Article available at: <https://pubmed.ncbi.nlm.nih.gov/41832987/>. Social media post available at: <https://inheritedcancer.net/post032526/>

Do Black Women with Breast Cancer Use Genetic Test Results to Make Decisions About Surgery?

The answer is yes! We showed this through looking at the timing of *BRCA1/2* genetic testing in relation to surgical decision-making among young Black women with breast cancer. Among 633 Black women, those with *BRCA1/2* GPs who were tested before surgery were significantly more likely to undergo a bilateral mastectomy compared with those tested after surgery (82.8% vs. 40%). These findings demonstrate that Black women use results of genetic testing to guide their care, thus it is incredibly important to offer genetic testing to them at the time of breast cancer diagnosis.

Reference: Roberson, et al. *Cancer Control*. 2025; 10732748251407739. PMID: 41360000. Article available at: <https://pubmed.ncbi.nlm.nih.gov/41360000/>. Social media post available at: <https://inheritedcancer.net/post12302025/>



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Features of Hereditary Breast Cancers Among Young Black Women

Our study among almost 700 BEST study participants (which is based on Black women diagnosed with breast cancer at or below age 50) found that 15.3% had mutations in hereditary breast and/or ovarian cancer genes, most commonly in *BRCA1* (7.7%), *BRCA2* (4.5%), and *PALB2* (0.9%). When compared with sporadic cancers, *BRCA1* carriers were far more likely to have aggressive triple-negative breast cancer (23.6% vs. 75.5%). Over half (52.8%) of *BRCA1*-related breast cancers occurred by age 40. These findings highlight the critical need for genetic testing across all populations to ensure early detection for all.

Reference: Beasley, et al. *Cancer*. 2026;132(12):e70402. PMID: 42252839. Article available at: <https://pubmed.ncbi.nlm.nih.gov/42252839/>. Social media post available at: <https://inheritedcancer.net/post060926/>

Genomic Characteristics Among Black Women with Hormone Receptor Positive (HR+) Breast Cancer

A recent study, led by our team, among over 1,000 women with HR+ HER2- breast cancer found higher proportions of high-risk HR+ HER2- early-stage breast cancer among Black participants. Other findings include the following: 1) Basal-type tumors were more common in Black participants compared with White participants (11% vs. 4.8%); 2) Those with basal-type tumors had lower 3-year recurrence-free survival compared to those with Luminal B-type (83.7% vs. 93.7%) and Luminal A-type tumors (83.7% vs. 96.5%); and 3) Those with high-risk, Luminal B- and Basal-type tumors had significantly worse 3-year outcomes compared to low-risk Luminal A-type tumors, which was independent of race. These results show that Black women tend to get more aggressive forms of breast cancer; however, once the specific subtype is determined, survival is correlated with subtype and not further dependent on race. Furthermore, our findings support the prognostic and potentially predictive importance of genomic testing to reduce racial survival disparities among Black women with early-stage breast cancer.

Reference: Reid, et al. *NPJ Breast Cancer*. 2026; 12(1):68. PMID: 41857012. Article available at: <https://pubmed.ncbi.nlm.nih.gov/41857012/>. Social media post available at: <https://inheritedcancer.net/post051226/>

“Dr. Reid on why breast cancer is killing Black women faster”

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The Unique Ways That Tumors Develop in Women with Hereditary Breast Cancer

Among nearly 5,000 women with breast cancer, which included data from our studies including BEST participants, we compared sporadic cases to those with inherited *BRCA1*, *BRCA2*, *PALB2*, *ATM*, and *CHEK2* mutations. We hypothesized that breast cancer among women with hereditary mutations in these genes form by distinct pathways, and better understanding these pathways could be important in predicting outcomes and drug responses. We collected tumors from these women, on which we performed DNA and RNA testing to see how these tumors might differ from non-inherited forms (often called ‘sporadic’) breast cancers. We found that compared to sporadic cases, *BRCA1* HR+/HER2- breast cancers were much more likely to be of the basal subtype, which is a more aggressive form of breast cancer. Among hormone receptor positive breast cancers, *BRCA1* carriers more often had *TP53* alterations, *ATM* carriers were more likely to have *FGFR1* alterations, and *BRCA2* carriers were more likely to have *APC* alterations. Among those with hormone receptor positive breast cancer, *BRCA2* carriers were less likely to have *PIK3CA* alterations and *CHEK2* carriers were less likely to have *TP53* alterations. This work included women from our BEST study, with hereditary breast cancer gene mutations, in whom we were able to collect tumor samples. Because of this, we had a more diverse sample of women to do this research on, making it more relevant for women across all populations. These findings may improve risk stratification and guide personalized treatment strategies.

Reference: Yadav et al. *J Natl Cancer Inst*. 2026;118(8):1416-1424. PMID: 41832987. Article available at: <https://pubmed.ncbi.nlm.nih.gov/41832987/>. Social media post available at: <https://inheritedcancer.net/post032526/>

Want to Stay Informed About Inherited Cancers?

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Breaking Down Breast Cancer Disparities
with Sonya Reid, MD, MPH



Disparities in Predicting Breast Cancer Risks Among Black Women

We reviewed the current state of breast cancer risk prediction in Black women and identified limitations of existing risk assessment models, which were largely developed based on data from White populations. This work highlighted the need for more inclusive risk prediction tools incorporating ancestry-specific genetic factors, inherited cancer genes, and polygenic risk scores to improve risk stratification and screening recommendations for Black women. Ultimately, our article reviews the importance of early breast cancer risk assessment and the urgent need for inclusive research and better tools to improve health equity.

Reference: Reid S, Spalluto L, Pal T. *J Natl Compr Canc Netw*. 2025;24(1):e257079. PMID: 41671467. Article available at: <https://pubmed.ncbi.nlm.nih.gov/41671467/>. Social media post available at: <https://inheritedcancer.net/post01062026/>