B-GREAT MILESTONES

October 2024

Welcome Message

We are excited to share our latest newsletter with you, to give you updates about breast cancer in Black women, with a focus on inherited cancers. If there are topics you would like to see in future newsletters, please reach out to us at ICARE@vumc.org. We continue to recruit for our IMPACT study, focused on testing strategies to improve follow-up care in those with inherited cancer risk (*if you are interested in participating, see the last page of this newsletter for details*). We are also continuing to conduct our study among *BRCA1/2*, *PALB2*, *CHEK2*, and *ATM* carriers with breast cancer through which we send tumor specimens for additional genomic testing to better understand pathways to tumor development and to contribute to personalized cancer treatments. We remain tremendously grateful to many of you who have chosen to participate in our studies – you are the reason we have been able to contribute to scientific advances, all with the purpose of improving care of those with inherited forms of cancer.

With sincere gratitude,

Tuya Pal, MD, FACMG *on behalf of the B-GREAT Team*

New Genes Raise Breast Cancer Risks in Study of African Women

A new study among more than 40,000 women of African Ancestry, almost half of which had breast cancer, identified 12 breast cancer genes that may help to predict breast cancer risk. This study, which included BEST Study participants, highlights the importance of studying individuals from diverse ancestral backgrounds in order to refine risks across diverse populations and discover new genes, which ultimately benefits ALL populations.

Jia, et al. Nat Genet. 2024;56(5):819-826. PMID: 38741014. Social media post on July 25th, 2024. Available at: https://tinyurl.com/post62524.

Inherited Breast Cancer Across Populations

BRCA1/2 are amongst the most well-studied genes, yet most *BRCA1/2* studies have been done in White populations. This means our knowledge about genes and risks comes primarily from White populations. There has been some research suggesting that *BRCA1/2* mutations may be more common in young Black women with breast cancer. Additionally, compared to *BRCA1/2* variants in Europeans, Indian individuals have different variants ~50% of the time and Japanese individuals have different variants ~90% of the time. This makes sense because genetically Indian individuals are closer to Europeans, while Japanese individuals are the most distant.

Want to stay informed about inherited cancers?

Consider enrolling in the Inherited Cancer Registry (ICARE), through which you will:

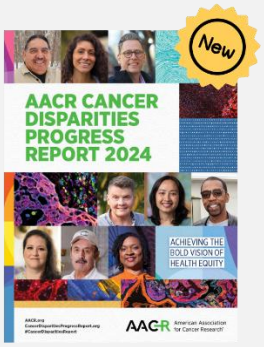
- Contribute to new discoveries in the field of inherited cancer.
- Get care updates personalized to you as new guidelines are released.
- Find out about other studies for which you may be eligible.

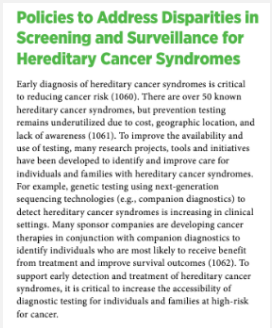
Enroll online now!

Scan the QR code or enroll at https://redcap.link/ICAREconsent

American Association for Cancer Research (AACR) Cancer Disparities Progress Report 2024

The AACR released a Cancer Disparities Progress Report on May 15th, 2024, which highlights inherited cancers! On **Page 163**, this report discusses polices to address disparities in screening and surveillance for hereditary cancer syndromes as well as an electronic support tool, called MyLynch, that can be used to provide personal cancer risks, adjusted risk estimates, and education on interventions for Lynch Syndrome. For more information, visit: https://tinyurl.com/AACRreport2024




Policies to Address Disparities in Screening and Surveillance for Hereditary Cancer Syndromes

Early diagnosis of hereditary cancer syndromes is critical to reducing cancer risk (1060). There are over 50 known hereditary cancer syndromes, but prevention testing remains underutilized due to cost, geographic location, and lack of awareness (1061). To improve the availability and use of testing, many research projects, tools and initiatives have been developed to identify and improve care for individuals and families with hereditary cancer syndromes. For example, genetic testing using next-generation sequencing technologies (e.g., companion diagnostics) to detect hereditary cancer syndromes is increasing in clinical settings. Many sponsor companies are developing cancer therapies in conjunction with companion diagnostics to identify individuals who are most likely to receive benefit from treatment and improve survival outcomes (1062). To support early detection and treatment of hereditary cancer syndromes, it is critical to increase the accessibility of diagnostic testing for individuals and families at high-risk for cancer.

Triple-Negative Breast Cancers

Triple-negative breast cancer (TNBC), which does not have estrogen, progesterone, or HER2 receptors, can be more serious and difficult to treat. Inherited breast cancer gene mutations, like *BRCA1/2*, are more common among this type of breast cancer, which is why it is important for those with TNBC to consider getting genetic testing that could help guide their cancer treatment.

Black populations from Africa, the Caribbean, and the United States are more commonly diagnosed with TNBC, which may contribute to their worse breast cancer outcomes. However, there is now emerging data to suggest that TNBC may be more common in other non-European populations, such as India.

These types of studies highlight the differences across populations in developing more serious forms of breast cancer, as well as the importance of studying ALL populations so that everyone can have the chance to benefit from genomic advances.

Should Black Women Be Screened Earlier?

A study reported that Black women had the highest rate of breast cancer deaths in their 40s compared to White women and women of other races and ethnicities.

Race/Ethnicity	Breast Cancer Deaths per 100,000 person-years
Black	**27**
White	15
American Indian, Alaska Native, Hispanic, and Asian/Pacific Islander	11

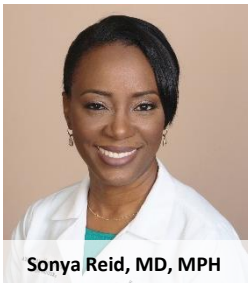
Chen, et al. JAMA Netw Open. 2023;6(4):e238893. PMID: 37074714. Social media post on June 20th, 2023. Available at: https://tinyurl.com/post62023.

Why is Diversity in Genomics Studies Important?

Did you know that about 80% of genomics data comes from European populations, yet they only make up about 16% of the world population? This bias means Europeans stand to benefit the most, while important associations from other ancestry groups may be missed. That is why it is important to include diverse populations in genomics research in order to prevent further widening disparities!

Martin, et al. Nat Genet. 2019;51(4):584-591. PMID: 30926966. Social media post on January 8th, 2023. Available at: https://tinyurl.com/post10823.

Tumor Genomic Studies to Learn More About Breast Cancer Development and Treatment in *BRCA1*, *BRCA2*, *PALB2*, *CHEK2*, and *ATM* Carriers

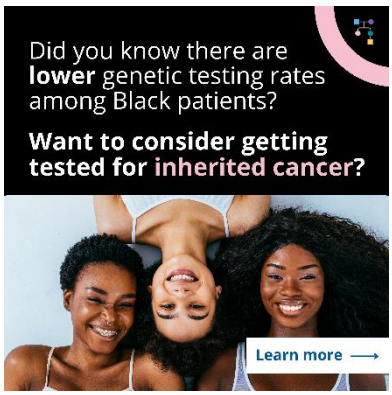


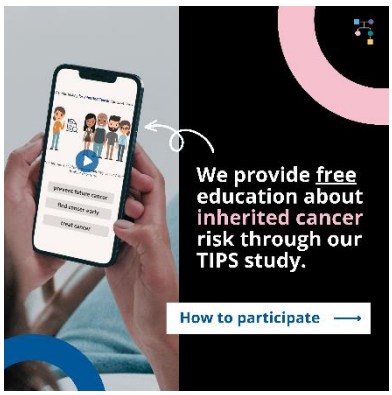
Sonya Reid, MD, MPH

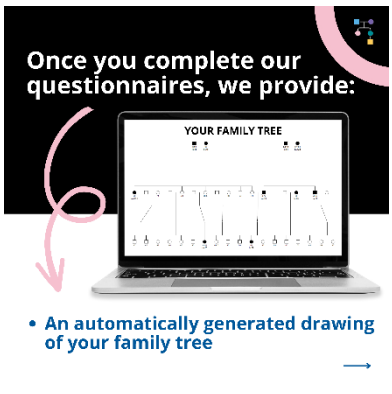
Together with Dr. Sonya Reid, we are currently conducting a study to learn more about breast cancer characteristics, factors associated with outcomes, and tumor genomics to better understand pathways to tumor development in *BRCA1*, *BRCA2*, *PALB2*, *CHEK2*, and *ATM* carriers. With your help, we hope that one day our research may lead to new or refined treatment strategies. Through this study, we are doing free genomic testing on breast cancer tumors. Please scan the QR code above to enroll online or visit https://redcap.link/ICAREconsent.

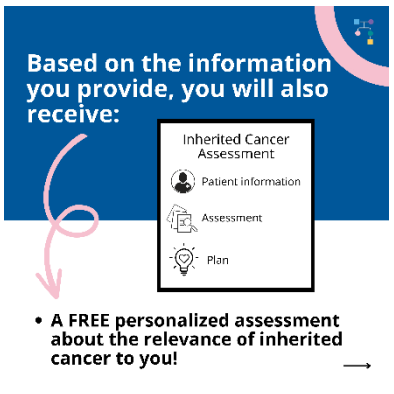
Tool for Inherited Cancer Predisposition Counseling and Testing (TIPS)

Scan the QR code or visit https://redcap.link/TIPS to receive free education and assessment for inherited cancer risk!









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