

REGAL ANNUAL NEWSLETTER

 **REGAL**
Research to **E**liminate **G**lobAL Cancer Disparities

December 10, 2025



Our Mission

Our team is driven by a deep commitment to understanding why some patients face more aggressive cancers or poorer outcomes. We explore what is driving these disparities by looking at the full picture—from individual experiences to neighborhood environments to the policies that shape healthcare access—so we can uncover what’s really driving these disparities. We know every data point is a person and every person deserves the best chance at healing, hope, and a future free from cancer. We do this work to make care more equitable, outcomes more just, and lives healthier—everywhere.

Inside this Issue

This issue of our annual newsletter includes updates on our ongoing research studies, highlighting their goals, progress, and community impact. Together, these efforts reflect our continued commitment to advancing population health research.



Our Team

At REGAL, we’re a diverse team of scientists, students, and community members united by one goal: to help eliminate cancer disparities around the world.

We take a big-picture look at the gaps in cancer care and population health—examining everything from analyzing molecular data, individual experiences to community challenges and healthcare systems. This “genes to society” approach helps us find practical, real-world solutions that doctors, local organizations, and fellow researchers can use to make a lasting difference for underserved communities.

Together, we’re working to build a healthier, more equitable future for everyone.



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Principal Investigator

Tomi Akinyemiju, PhD, MS, is a Professor of Population Health Sciences, Global Health and Ob/Gyn with expertise in cancer epidemiology, cancer biology, global health, and health disparities. Her research expertise and accomplishments have focused on articulating and innovating conceptual and empirical approaches for cancer health disparities research, specifically, disentangling the role of race as a social construct and race-associated biological mechanisms that contribute to cancer disparities. Dr. Akinyemiju has published over 180 peer-reviewed publications, and her research program has been continuously funded by Federal and non-Federal sources including the National Institutes of Health, Susan G. Komen, The V Foundation, and numerous others.



Tomi Akinyemiju,
PhD, MS

OUR STUDIES

MEND: Mechanisms for Established and Novel Risk Factors of Breast Cancer (Page 3)

ORCHiD: Ovarian Cancer Epidemiology, Healthcare Access, and Disparities (Page 4)

STRIDE: Systemic Racism's Influence on Disparities Elucidation (Page 5)

CLOVER: Climate Impact on Lung Cancer via Exposure to Radon (Page 6)

POEM: Patient Outcomes and Experiences in Metastatic Breast Cancer (Page 7)

PRISM: Precision Oncology Risk Identification & System Level Modeling (Page 7)



**Collaborating for healthier
communities**

Through conversations with community members and partners, the REGAL team listens, shares ideas, and learns how to make research more meaningful. These discussions guide our work and help ensure that studies reflect the real needs and experiences of the people we serve.



**Training the Next Generation of
Health Researchers**

The REGAL team is helping prepare the next generation of population health researchers. Students and trainees learn how to work with communities, collect and understand health information, share findings clearly, and build the skills needed to improve health for all.



CELEBRATING 10 YEARS!

The MEND Study

The MEND study looks at why some groups of women are more likely to get aggressive breast cancers and have lower chances of survival. We aim to use this knowledge to create better ways to lower breast cancer deaths for everyone. We study how genes, lifestyle, and other biological factors may lead to more aggressive breast cancer in African and American women.



MEND

Mechanisms for Established and Novel Risk Factors
of Breast Cancer in Women of African Descent

Our Approach

The MEND study includes women who have just been diagnosed with breast cancer and have not yet started treatment. We work with patients in Nigeria, The Gambia, and the United States. Participants answer questions about their health, daily habits, and background. We also measure height, weight, hip size, and blood pressure. In addition, we collect small samples of blood, saliva, and tissue. These samples are sent to the laboratory for tests to determine why some breast cancers are more aggressive. Our goal is to find better ways to prevent and treat breast cancer.



MEND at a Glance



1,200+ patients and 2,000+ community participants enrolled



5 study sites across Nigeria, The Gambia, and the U.S.



5 published papers, with more in progress



Multiple grants supporting ongoing discovery

Study Findings

- In West Africa, women with higher body weight were less likely to get breast cancer, especially younger women. This was a surprising finding!
- Women with more inflammation in their bodies (measured by C-reactive protein) were more likely to develop aggressive breast cancers.
- Unhealthy cholesterol and blood fat levels—especially having low “good” cholesterol (HDL)—were linked to a higher risk of breast cancer.
- Daughters whose fathers had more years of education were less likely to be diagnosed with aggressive breast cancer.
- Having metabolic syndrome (a mix of high blood pressure, high blood sugar, and unhealthy cholesterol) was tied to a higher risk of triple-negative breast cancer, even in women who were not overweight.

EQUITABLE ACCESS TO OVARIAN CANCER TREATMENT



Why Ovarian Cancer?

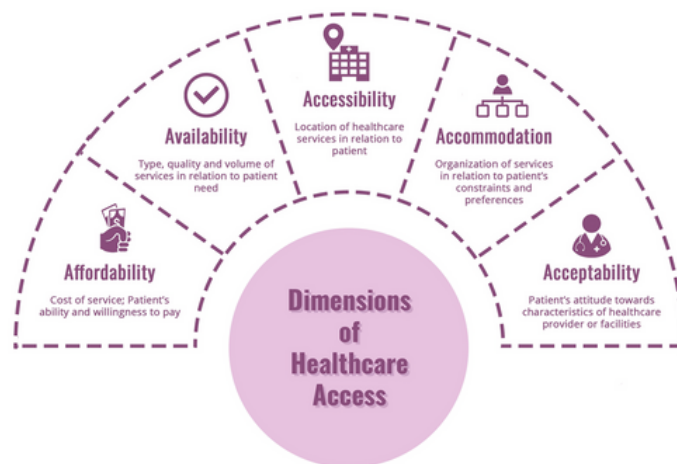
The ORCHiD study is driven by a powerful goal: to make ovarian cancer care more equitable and effective for every woman. By enrolling 1,500 patients across the United States, we're exploring how access to healthcare—through five key dimensions: affordability, accessibility, availability, accommodation, and acceptability—varies by race and geography. We're also examining how these differences, along with biological factors, shape treatment experiences and outcomes. This work is about more than data—it's about understanding what stands in the way of better care and finding ways to break through.

Research Could Change Care Access

By understanding how healthcare access barriers differ by race and geography, we can:

- Influence policy to reduce inequities
- Improve clinical practices to ensure timely, quality treatment
- Develop tailored support strategies for better health outcomes

This study is not just about data—it's about people. It's about you. Together, we're laying the foundation for a more equitable future in cancer care.

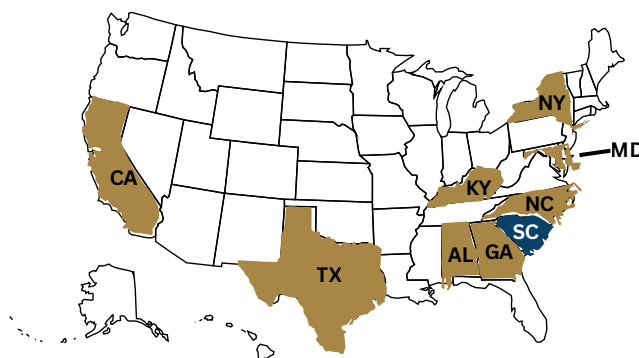


What we've learned so far

- Black women with ovarian cancer reported more discrimination, and those who faced poor treatment in public places were more likely to be diagnosed at a later stage.
- The mix of "good" bacteria in the vagina was often disrupted and the way it changed depended on things like race, age, and cancer stage. This suggests that these bacteria may play a role in how the disease develops.
- Racial differences in testing still exist, showing the need for stronger policies to make access fair. Using our five dimensions of healthcare access, we discovered that affordability emerged as the strongest influence, with acceptability and accommodation also playing roles.

Recruitment & Registries

We have spoken to 800+ participants from across the United States:



- States currently in study
- States being added to study

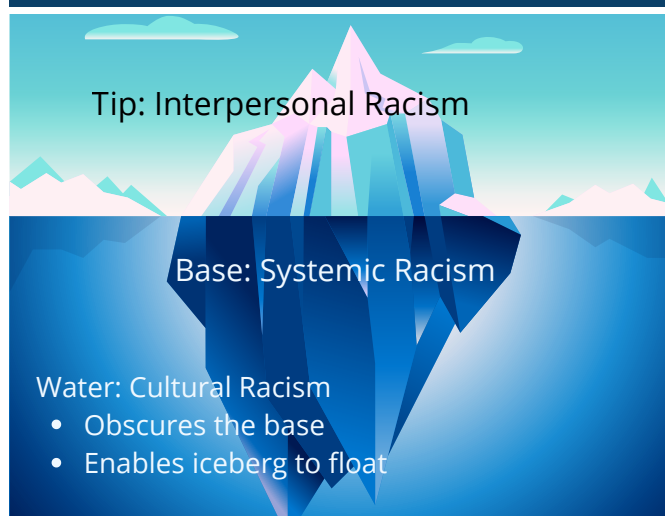
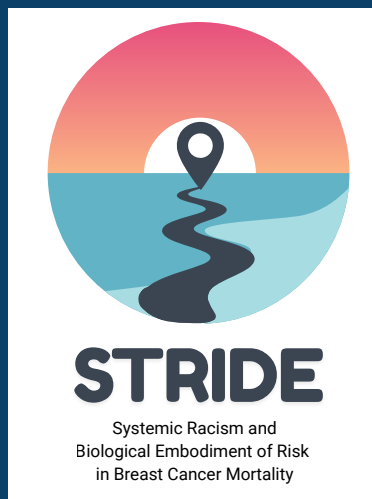
STRIDING FOR CHANGE

The STRIDE Study

Black women in the U.S. die from breast cancer more often than women of other races. Scientists don't fully understand why this happens or how to improve these outcomes. This study looks at how stress from tough living conditions or unfair treatment might affect the body and make breast cancer more deadly.

What is Systemic Racism?

Systemic racism means that rules and laws in places like schools, jobs, or the government treat people unjustly because of their race. These inequitable rules have been around for a long time and keep getting passed down, which makes it harder for some groups of people to succeed.

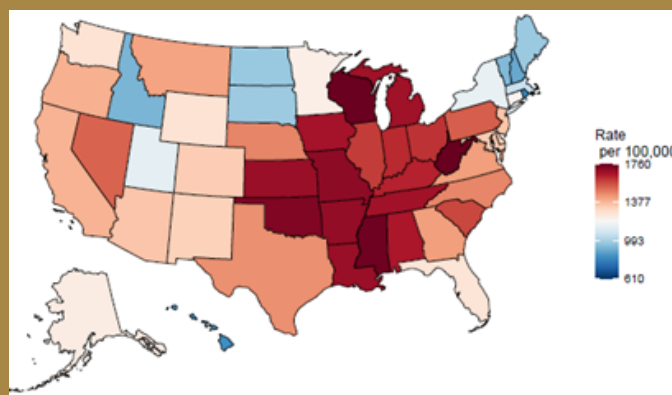


Cultural Racism

Our team has found a new way to measure the negative effects of racism. Many people have heard of structural racism (the way systems and policies disadvantage certain groups) and interpersonal racism (bias in everyday interactions). There is another form, cultural racism, which refers to the negative stereotypes and narratives about groups that shape attitudes and behaviors across society. Until now, cultural racism has not been measurable. Read about how we developed a new way to capture its impact in our latest publication: [A New Latent Measure of Cultural Racism and Its Impact on US Mortality and Life Expectancy](#).

Our Approach

The STRIDE Study is exploring how breast cancer affects women differently — and how systemic racism over a lifetime may play a role. By studying about 5,000 women across the U.S., we aim to uncover the root causes of disparities and find solutions to improve care for all women.



This map shows breast cancer death rates among non-Hispanic Black women between 2018–2022. The darker red states have the highest rates, while lighter colors and blues show lower rates. Deaths from breast cancer are especially high across the South and parts of the Midwest. These differences could be due to barriers like screening, timely treatment and systemic inequities in health care. Understanding these patterns help us work toward better outcomes for women across the country.

DID YOU KNOW?



Radon Gas is a risk factor for lung cancer

Radon is a colorless, odorless gas released from the breakdown of rocks and minerals in the soil. It can seep into homes and build up over time, increasing the risk of lung cancer. **Radon is the second leading cause of lung cancer.** Climate changes—like shifting soil conditions and more extreme weather—can increase how much radon enters buildings, leading to higher indoor concentrations over time. The North Carolina Department of Human and Health Services recommends testing for radon at least every five years.

The CLOVER Study

The CLOVER Study examines how radon exposure and climate-related changes affect lung cancer risk in North Carolina, especially in communities often left out of research. Statewide data show that many neighborhoods had fewer than 10 radon tests per 1,000 residents, and areas facing higher poverty and unemployment were far less likely to test their homes. In contrast, communities with higher incomes and more education tested more often. CLOVER aims to help close these gaps by collecting household surveys, short-term radon tests, and county-level data on lung cancer, radon levels, and climate factors. Participants also received incentives for taking part. This work will help guide future policies that reduce radon exposure for all North Carolinians.



Community Collaboration



We have partnered with churches, tribes, nonprofits, and local leaders to help promote the study across North Carolina. These partnerships helped us build trust and connect with diverse communities. We would like to thank all of our partners for collaborating with us on this study.

Participant Quote

“Because of the CLOVER Study, we found high radon levels in our home—equal to about 200 chest x-rays a year. With help from the study and NCDHHS, we were able to fix the problem and make our home safer.”

Through the CLOVER Study, families across NC are discovering and reducing high radon levels in their homes. One participant shared that a specialist said their radon exposure level was the equivalent of 200 chest x-rays a year!

ON THE HORIZON

The POEM Study

The POEM Study is a collaboration between Duke University and UNC-Chapel Hill. We aim to better understand the treatment experiences and quality of life of people living with metastatic breast cancer (MBC). By collecting data directly from patients, we are focusing on factors that affect both Black and non-Black patients, while also making it possible to participate in research from home.



Centering patient voices to improve care and quality of life for metastatic breast cancer patients

Our Approach

Participants in this study are asked to complete four surveys over the course of one year. Each survey takes about 30 minutes to complete and covers the following domains: demographics, social determinants of health, access barriers, patient activation, depression, anxiety, resilience, post-traumatic growth, health-related quality of life, spirituality, and pain interference. Additionally, participants who have been diagnosed with MBC within 6 months of study enrollment can choose to provide a blood sample to examine biological factors associated with MBC.

The PRISM Study

Every cancer patient deserves the best possible chance at life after diagnosis. Today, there are effective treatments to improve survival, but barriers to equitable access exist. That's why our team is working hard to create a program that helps every patient get the advanced therapies they need.

In this program we will identify 100 newly diagnosed high-risk cancer patients at Duke using electronic health records and randomly assign them to either receive extra navigation support or standard care. Then, we'll check if this extra support helps reduce delays in testing, treatment, and follow-up compared to patients who didn't get the navigation support.



BROUGHT TO YOU BY

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