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LSU LCMC Health Cancer Center Researchers Uncover Key Immune Differences in Triple-Negative Breast Cancer

Study provides new insights that could lead to more effective, personalized treatments

(New Orleans, LA – Nov. 19, 2025) - Researchers at the LSU LCMC Health Cancer Center have published groundbreaking findings in [*NPJ Breast Cancer*](#) that sheds new light on triple-negative breast cancer (TNBC), one of the most aggressive forms of breast cancer.

The National Cancer Institute (NCI)-funded study, led by Dr. Lucio Miele, Director of the LSU LCMC Health Cancer Center, in collaboration with colleagues at LSU Health New Orleans, City of Hope Cancer Center (Duarte, CA), and the University of California, San Diego, examined tumors from more than 250 Black and White women across Louisiana.

Unlike many earlier studies, this research balanced age, cancer stage, and other variables, allowing scientists to focus on the underlying biology of the disease rather than external factors.

Key discoveries include:

- **Race is not an intrinsic predictor of survival.** Despite well-documented differences in cancer outcomes, this study found that worse outcomes for Black women with TNBC are more likely linked to later diagnosis and socioeconomic challenges to care rather than tumor biology alone.
- **A new molecular subtype was identified.** Researchers discovered a previously unrecognized group of TNBC tumors with distinct biological features, potentially opening the door to novel, targeted treatment strategies.
- **Immune differences may hold the key to future therapies.** Tumors from Black women showed higher levels of certain immune cells, particularly B-cells, which are associated with better responses to treatment and longer survival. These findings suggest new opportunities for precision immunotherapy.

“Triple-negative breast cancer is one of the hardest cancers to treat because it lacks targeted therapies. It is not a single group of tumors. It’s made up of many biologically different subtypes,” said Dr. Lucio Miele, Director of the LSU LCMC Health Cancer Center. “By better understanding the genetic and immune landscapes of these tumors in Louisiana women, we can move closer to developing treatments tailored to each patient’s biology improving survival and reducing healthcare gaps.”

“These findings are a major step toward making treatment more personal and effective for patients with triple-negative breast cancer,” said Victoria L. Seewaldt, M.D., Ruth Ziegler Chair in Population Sciences at City of Hope. “By uncovering immune differences that may influence how tumors respond to therapy, we’re opening the door to precision immunotherapies that could improve survival and quality of life for women who face this aggressive disease.”

Why this matters for Louisiana and NCI Designation

Louisiana has some of the highest breast cancer death rates in the nation, and TNBC disproportionately affects Black women in the state. This research underscores the LSU LCMC Health Cancer Center's commitment to advancing cancer science that directly addresses local health care gaps.

"Achieving NCI designation requires exactly this type of pioneering, community-relevant research the benefits the people of Louisiana," said Dr. Miele. "The designation would bring more clinical trials, research funding, and access to the latest therapies for Louisiana patients, keeping families closer to home while receiving world-class care."

More details on the research study can be found here: <https://www.nature.com/articles/s41523-025-00836-6>

About the LSU LCMC Health Cancer Center

The LSU LCMC Health Cancer Center is leading the fight against cancer through an integrated approach that unites innovative research, compassionate clinical care, and world-class education. Our teams bring the latest scientific discoveries directly to patients, improving outcomes across Louisiana and beyond. Together, we're building a cancer center that stands for more than medicine. One that brings innovation and hope to every corner of our community as we advance toward National Cancer Institute (NCI) designation.