

Something in the water? Researchers studying large number of late-stage breast cancer cases in Florida county

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Broward County, Florida's rate of advanced breast cancer exceeds the state and national average, and researchers want to learn why.

Could a chemical in the water or one sprayed on lawns play a role? Does someone's ancestry make them more vulnerable to the chemicals?

Dr. Jean Latimer and her team at Nova Southeastern University will study the role environment plays in [advanced breast cancer](#), particularly among women of African American descent.

"Nationally the levels of advanced breast [cancer](#) have dropped because of early detection," said Latimer, director of the NSU AutoNation Institute for Breast Cancer Research and Care. "That's not happening as often as should in Broward County. People get hung up about genetic risks. The truth is with breast cancer most of it is unexplained."

Breast cancer in its varying stages is the most common cancer diagnosed among U.S. women. It is the second most deadly for women after [lung cancer](#), according to the American Cancer Society. Broward County's rate of advanced breast cancer in women was 32.6% of cases in 2019, compared to 31.1% of cases for Florida, according to the Florida Department of Health. Nationally, the American Cancer Society reports that number is between 20% to 30% of cases.

Black women have the highest death rate from breast cancer, and are more likely to have the aggressive triple-negative breast cancer than any other racial or ethnic group, according to the American Cancer Society.

Although doctors will ask about [family history](#), Latimer said most women don't realize 80% of breast cancer is not genetic. "We are trying to learn what exacerbates your risk."

Most research into advanced breast cancer and clinical trials focus on treatment. However, researchers around the world now are looking for ways to help reduce breast cancer risk through prevention.

"Possible environmental causes of breast cancer have received more attention in recent years," according to the American Cancer Society.

"While much of the science on this topic is still in its earliest stages, this is an area of active research."

Latimer wants to focus on prevention and has received a \$100,000 research grant from the Florida Breast Cancer Foundation to learn what information Broward residents might need to reduce their risk.

"There has been this shift in thought about how to approach the treatment of breast cancer," said Tracy Jacim, president and CEO of the Florida Breast Cancer Foundation. "So much of the messaging was about family history, and that is still an incredibly important piece, but now there also is this understanding that as much as 90 percent is environmental and more research is going to that area."

For her research, Latimer will focus on seven ZIP codes in Broward County that are home to particularly high rates of advanced breast cancer in minority women. Those ZIP codes are in Plantation, Dania Beach, Pompano Beach, Fort Lauderdale and Lauderdale Hills. Hollywood is home to two of the ZIP codes.

The seven ZIP codes have significant populations of people of African descent, but also higher amounts of arsenic in the tap water than other areas of Broward County. Arsenic is a known carcinogen and common in tap water, but the levels vary from city to city. Residents can learn what's in their water by ZIP code through the Environmental Working Group website.

In addition to arsenic, Latimer will study how a herbicide called glyphosate, which is used for agriculture and to prevent weeds on lawns and in parks, affects breast cancer. Glyphosate was recently declared a probable human carcinogen.

"Although Miami is beginning to ban glyphosate in public parks, it is not banned in Broward, and many golf courses loaded with glyphosate are now being converted into residential areas," Latimer said.

Latimer will combine breast tissue samples, census data and laboratory research to learn whether arsenic or glyphosate accelerate cancer growth, and if having African ancestry makes a person more vulnerable. In her lab on the Davie campus of Nova Southeastern University, Latimer and graduate assistants pull petri dishes from incubators. They take normal breast tissue and expose it to the carcinogens, studying 38,500 genes at the same time to track any changes.

The entire NSU lab is dedicated to studying breast cancer and works with community health centers and plastic surgeons to get breast tissue samples. Within the lab, five major [breast cancer research](#) projects are underway.

South Florida's diverse population makes the area ideal for studying ancestry's connection to breast cancer, Latimer said. On this project, she works closely with Dr. Stephen Grant in the Dr. Kieran C. Patel College of Osteopathic Medicine, who has a specialty in how the environment affects health.

Latimer noted that breast cancer survival at five years after diagnosis is only 74% among African American women compared to 88% among white women of European descent, and that African American women are more likely to be diagnosed with large tumors. There are varying explanations: Socioeconomic factors such as the lack of health insurance, lower incomes, and unequal access to medical care. Or biological features such as the presence of stem cells in the [breast](#) tissue could be what plays a role.

If someone is more vulnerable, Latimer said, they will want to use a zero

water filter or an ion-exchange filter to reduce arsenic in their drinking water. They may also want to buy [food products](#) free of glyphosate with the "non-GMO" label, particularly food products such as corn, oats, peanuts, soy and wheat, which are genetically modified to grow in soil that contains glyphosate.

Latimer says if she finds an environmental connection to [breast cancer](#) in both the African American community and white communities, she wants to do a larger study to include Hispanics. "Even if both groups show similar response to these chemicals, that will still be an important outcome," she said.

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