

## HEALTH CARE

# Miles away, years apart: Air pollution steals time from Black communities

By [Keely Brewer](#), Daily Memphian

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**Yolonda Spinks poses for a portrait outside of Valero's Memphis refinery.** (Patrick Lantrip/The Daily Memphian)

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Yolonda Spinks feels like sickness is unavoidable in South Memphis, the place she's always called home.

During her childhood, she suffered chronic headaches and severe allergies. As an adult, she spends an outsized amount of time in doctors' waiting rooms, seeking solutions for her persistent symptoms.

But last October, she had a eureka moment.

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In her late 20s, Spinks was diagnosed with keratoconus, an eye disease in which the cornea bulges outward, creating vision problems. The root cause of keratoconus is unknown, but allergies — and the constant eye rubbing that comes with it — and genetics are potential suspects. Glasses can help with the condition, but by the time doctors caught it, Spinks' case was so advanced that she would need a cornea transplant to correct it.

Last year, she was in Houston for an environmental justice conference, and she and four other attendees made an impromptu trip 90 miles east to Port Arthur, Texas, an industrial port that's home to the country's biggest oil refinery.

Peering out of the passenger window, Spinks saw the steel pipes of the refineries that frame the neighborhoods and witnessed white particles falling to the ground, like snow, and smog in the air. Within a few minutes, her head started hurting, her eyes started burning and she started thinking about her childhood, which was full of symptoms just like those.

At home, the smokestacks of Shelby County's biggest industrial facilities loom near southwest Memphis, and cars pass by on heavily traveled highways within earshot of the houses.

In Texas, Spinks thought she might be having a poorly timed allergy flare-up, but when the other passengers said they felt the same way, her long-held suspicion of air

quality's impact on her health solidified. She wondered: If a short drive past the refineries was causing this reaction, what impact could a lifetime of exposure have?

## Danger in the air

The Houston conference was one of Spinks first forays into the world of environmental advocacy — a natural progression from her advocacy work in public health, where she focused on maternal mortality.

“When you put the industrial pollutants in communities that lack resources, that lack access to basic human needs like health care, these kids grow into adults with all these ailments,” Spinks said.



**Yolonda Spinks poses for a portrait at Martin Luther King Jr. Riverside Park, which is in the shadow of Valero's Memphis refinery. (Patrick Lantrip/The Daily Memphian)**

As the youngest of four children — the “last pea in the pod” — to a single mother, Spinks heard complaints about air quality but never sensed a serious concern about its

health impacts. Through her foray into public health advocacy, and with a growing body of air pollution research to back her up, she feels confident there's a connection.

Last fall, the U.S. Environmental Protection Agency announced that a nondescript Memphis facility on Florida Street has been emitting a chemical called ethylene oxide, or EtO, for more than 40 years.

Sterilization Services of Tennessee is tucked away near homes in Mallory Heights, a neighborhood with an average life expectancy of 65.3 years — the lowest in all of Shelby County, based on data from the U.S. Small-area Life Expectancy Estimates Project.

The project — a collaboration from the National Center for Health Statistics, the National Association for Public Health Statistics and Information Systems and the Robert Wood Johnson Foundation — showed life expectancy estimates by census tract from 2010 to 2015.

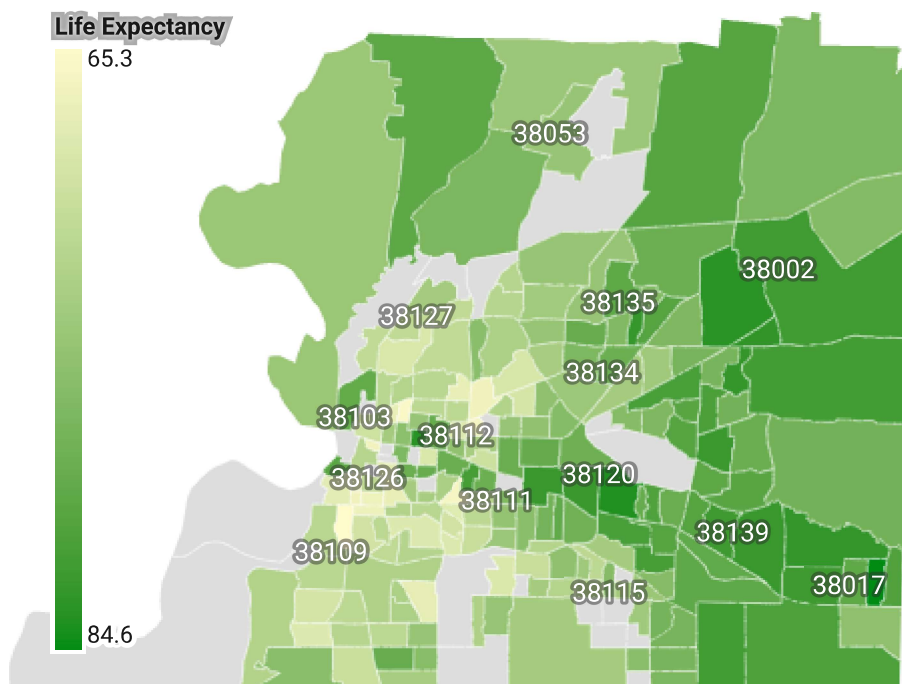
The EPA told South Memphis residents last fall that EtO can cause up to 2,000 additional cancer cases per one million people throughout a lifetime of exposure; the chemical has been linked to leukemia, Non-Hodgkin's lymphoma and stomach and breast cancers.



## Shelby County Life Expectancy (From 2010-2015)

Estimates of Shelby County, Tennessee, life expectancy at birth.

(Grey census tracts do not have life expectancy estimates, see note.)



*Life expectancy estimates were not produced for census tracts with population of less than 5,000 for the six-year period (2010-2015), for tracts with age-specific death counts greater than population counts, and for census tracts with life expectancy at birth estimates with standard errors greater than four years.*

Map: Elle Perry, The Daily Memphian • Source: [National Center for Health Statistics \(CDC\)](#) • [Get the data](#) • Created with [Datawrapper](#)

That's in addition to residents' risk of developing cancer for any other reason, and Spinks said there are plenty of other reasons someone might develop cancer in southwest Memphis.

In October of last year, the [Shelby County Health Department launched its first specific cancer cluster study](#) to help understand the risk to the area's residents. The

Health Department analyzed cancer data for two time periods: 2000-2009 and 2010-2019.

Just last month, the results of that study were made public. It found no evidence of cancer clusters near Sterilization Services, though it did find some hotspots of breast cancer outside the EtO risk area.

“Just because we cannot find evidence of increased rates of cancer that are associated with EtO does not mean there’s not an increased risk. There are limitations to this kind of analysis,” Shelby County Health Department director Michelle Taylor said at the time.

### **A public health crisis**

Until the EPA’s regulations catch up with its own science, advocates like Spinks know they’re dealing with one more pollutant.

Like most places, Memphis’ industrial activity is concentrated in low-income, Black communities because of historic redlining. Many residents are already concerned about the emissions emanating from the epicenter of industry at President’s Island in southwest Memphis, but “air pollution” is a broad category. And they continue to learn about new emissions, such as EtO, as well as new types of chemical threats.



## Lowest and Highest Shelby County Life Expectancy (From 2010-2015)

Estimates of Shelby County, Tennessee, life expectancy at birth.

Highlighted are the highest and lowest life expectancy census tracts in Shelby County.



*Life expectancy estimates were not produced for census tracts with population of less than 5,000 for the six-year period (2010-2015), for tracts with age-specific death counts greater than population counts, and for census tracts with life expectancy at birth estimates with standard errors greater than four years.*

Map: Elle Perry, The Daily Memphian • Source: [National Center for Health Statistics \(CDC\)](#) • [Get the data](#) • Created with [Datawrapper](#)

“Environmental justice and public health are not two separate things,” Spinks said.

“Pollution is a public health crisis.”

The American Lung Association’s annual “State of the Air” report, released in April, said that more than one-third of Americans still live in places with failing grades for unhealthy levels of ozone or particle matter pollution.

Globally, air pollution robs two years from the average person's life span — comparable to the impact of smoking. That finding comes from the Air Quality Life Index, which researches the impact of air quality on life expectancy. Overall, the United States' air quality is better than many countries, but Americans' exposures generally differ based on their income and race.

In the U.S. counties with the worst air quality, more than 70% of the affected residents are people of color, American Lung Association's annual report states.

Mallory Heights is located in Shelby County's census tract No. 55 and is 97% Black, according to Census Reporter, an independent project initially funded by the Knight Foundation that compiles and analyzes U.S. Census bureau data.



**Vera Holmes — left, president of the Mallory Heights CDC — talks during a Mallory Heights CDC meeting at the South Branch Library to inform residents about their cancer risk from ethylene oxide emissions from Sterilization Services of Tennessee. (Brad Vest/Special to The Daily Memphian)**



The site notes that most of the data has a margin of error of at least 10%, but it puts the median household income in the tract at just over \$18,000. More than 55% of the tract's residents live below the poverty line, and 35% of the tract's 1,255 housing units are vacant.

The concentration of particulate matter, a type of soot that's arguably one of the greatest environmental risks to human mortality, increases as an area's Black population increases, according to a study from Harvard University's T.H. Chan School of Public Health and the Environmental Systems Research Institute.

The study found a sharp increase in particulate matter pollution in neighborhoods where more than 85% of the residents are Black, as in Mallory Heights. Particulate matter pollution declines in areas where at least 70% of residents are white.

A similar link between air pollution exposure, race and income extends to the rest of the EPA's alphabet soup of air pollutant categories, like PM, VOCs and HAPs.

In a life expectancy study published last year in The Lancet medical journals, researchers found that Black populations continue to live shorter lives on average than white populations, despite overall life expectancies increasing. The authors said local-level data is crucial to eliminate health disparities and increase longevity for all. But in Shelby County, a local air pollution expert said data is lacking.

### **The absence of information**

Chunrong Jia is a professor at the University of Memphis's School of Public Health who studies air quality and environmental health disparities. He said air pollution is linked to lower life expectancies globally, but no one has conducted comprehensive research on the link between air quality and life expectancy in Shelby County.

"The reality is most disadvantaged communities live closer to the emitters and pollution sources, but does that mean being closer will always result in higher exposure?" Jia said. "It's not always the case."





**Residents from the impacted area listen during a Mallory Heights CDC meeting at the South Branch Library to inform residents about their cancer risk from ethylene oxide emissions from Sterilization Services of Tennessee.** (Brad Vest/Special to The Daily Memphian)

A decade ago, Jia’s research on air toxics indicated that southwest Memphis is under “significant environmental stress compared with surrounding areas and communities.”

More recently, Jia found that lower-income people in Shelby County face slightly higher exposures to pollutants known as PAHs, or polycyclic aromatic hydrocarbons. It’s a category of chemicals with known health risks, and in Memphis, they’re mostly emitted from the airport, trains, highways and the Mississippi River — all of which are concentrated in Black communities.

Jia said exposure to PAHs is almost inevitable because the chemicals are so widespread in the environment. His study didn’t account for other types of air pollutants, though, and it wasn’t supposed to. Understanding the cumulative health impacts of air pollution would require a widespread monitoring network, which is

costly and complicated. There's no catch-all air monitor, so calculating exposure levels for every type of air pollutant is complex and, in many cases, not feasible.

"It's tremendous work," Jia said. "It's beyond the health department's work scope."

The Shelby County Health Department is one of four local health departments in Tennessee that runs its own air monitoring program. It has five air monitoring sites located in East Memphis, Millington, Frayser and Downtown.



**Angela Johnson with Memphis Community Against Pollution speaks during a Mallory Heights CDC meeting at the South Branch Library to inform residents about their cancer risk from ethylene oxide emissions from Sterilization Services of Tennessee. (Brad Vest/Special to The Daily Memphian)**

But there's not an air monitoring site in southwest Memphis.

"There are currently five operating air monitors now funded and approved by EPA," Shelby County Health Department director Michelle Taylor said in a statement.

"There are also five dormant sites that were at one time funded and approved by the EPA but are no longer maintained, as they are no longer supported by the EPA."

Three of those defunct air monitors were in southwest Memphis until their removal between 2007 and 2008.

Some residents were outraged to learn there was no longer an air monitor in their community, and in 2021, Shelby County Mayor Lee Harris said the county planned to analyze the placement of air monitors. More than two years later, that assessment hasn't happened, and Harris' office didn't provide evidence of plans to do so.

Jia is well-versed in the scientific literature that connects air pollution exposure to lower life expectancies globally, but without sufficient monitoring data, he said he can't make that claim locally. That's why he wishes there were air monitors in southwest Memphis.



**Vera Holmes points to the Sterilization Services of Tennessee building on a map during a Mallory Heights CDC meeting at the South Branch Library to inform residents about their cancer risk from ethylene oxide emissions.**

(Brad Vest/Special to The Daily Memphian)

“Whether it shows an elevation or it does not show an elevation, at least that’s extra information you can present to the public,” Jia said.

Frustrated by the lack of data on southwest Memphis’s air pollution, Memphis Community Against Pollution is one of 16 community groups and two universities working with Appalachian Voices to deploy additional air monitors across five states.

“The data collected will increase local and regional understanding of air quality issues, and will support advocacy for air quality standards, permitting decisions and regulatory enforcement actions that protect human health,” Appalachian Voices said in a statement.

They’re installing the monitors through a \$118,000 EPA grant. It’s a heavy lift, though, and they’re seeking technical assistance to maintain the monitor, but the plans aren’t finalized.

Jia sees a need for more research on air pollution exposure in Shelby County, but he said it’s also important to not forget about other environmental stressors on low-income, Black communities. Lead poisoning, pesticides and contaminated drinking water are all more likely to affect communities of color, as well.





**Residents listened and asked questions during a Mallory Heights CDC meeting at the South Branch Library to inform residents about their cancer risk from ethylene oxide emissions from Sterilization Services of Tennessee.** (Brad Vest/Special to The Daily Memphian)

It's the reason the federal government has directed billions of dollars to disadvantaged communities through the Justice40 program. In late April, the White House announced the creation of an Environmental Justice Office to address the disproportionate health impacts from pollution and climate change, in part by addressing research gaps.

The EPA is approaching multiple deadlines to approve stricter air pollution standards, including EtO, the chemical byproduct entering the air from Sterilization Services of Tennessee. To the frustration of community advocates, that facility has voluntarily lowered emissions at its other locations in other states, but local management hasn't done so here. Residents have shown up to public forums such as the Memphis City Council and the Shelby County Commission meetings to ask for more — more

research, more change and more urgency — and both groups passed resolutions in support of the community’s efforts.

Spinks often thinks about the adage that suggests yelling, “Fire!” instead of, “Help!” when trying to get people’s attention.

It’s hard to make people care about a threat unless they’re personally affected, she said. And most of the time, it’s hard to make them care about an “invisible” threat like air pollution at all.

When Spinks leads a meeting or gives a presentation, she likes to close by quoting Mamie Till, the mother of Emmett Till:

“Two months ago, I had a nice apartment in Chicago. I had a good job. I had a son. When something happened to the Negroes in the South I said, ‘That’s their business, not mine.’ Now I know how wrong I was. The murder of my son has shown me that what happens to any of us, anywhere in the world, had better be the business of all of us.”

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**Keely Brewer**

Keely Brewer is a Report for America corps member covering environmental impacts on communities of color in Memphis. She is working in partnership with the Ag & Water Desk, a sustainable reporting network aimed at telling water and agriculture stories across the Mississippi River Basin.

