When the University of Pittsburgh’s Naudia Jonassaint goes to the doctor, she keeps it casual. She wears sweatpants. And she does not mention she’s a doctor herself.

Unless, of course, she has to. And a few years ago, when she was pregnant for the third time around, she did.

Jonassaint felt off. Checking her blood pressure at home, she was alarmed to find it was 180/90. She headed for the hospital. A nurse took her vitals and history. And Jonassaint told her: “I feel more swollen than normal.”

To this, a shrug. “Your blood pressure isn’t that high.”

In fact, Jonassaint’s systolic pressure was 30 points above her usual. Granted, this was maybe not so strange. But it should have been a red flag, given what Jonassaint had just told her:

Her first pregnancy ended in a miscarriage 27 weeks in.

Her second pregnancy resulted in a beautiful baby boy—but the experience was harrowing. She delivered early, at 31 weeks, in the throes of severe preeclampsia syndrome, a life-threatening condition that sends the mother’s blood pressure sky high, as well as another pregnancy complication known as HELLP.

The nurse knew all of this and didn’t bat an eye.
For Black women in this country, being dismissed is all too common, says Jonassaint, medical director of clinical hepatology at UPMC Presbyterian and assistant professor of medicine at Pitt, as well as the department’s first vice chair for diversity, equity and inclusion.

And from time to time she reaches a point where she has to refuse to be dismissed.

“I’m a hepatologist,” she finally told the nurse, “and I know edema [swelling]. I see it day in and day out. This is unusual for me.”

In an instant, the trajectory of her care changed—and likely saved her life.

In the United States, Black babies and mothers have exponentially higher mortality rates than do white babies and mothers. That disparity holds true when controlling for factors like obesity in the mother. For Black mothers, even high education or income isn’t protective in the same way it is for mothers who are white. Astonishingly, it seems to put them at higher risk.

A strong correlate to preterm birth has been shown in “chronic worry”—about racial discrimination, specifically.

There is bias, says Jonassaint. And in reaction to that and more, every waking day there is stress that, as a Black woman, “you just take on” as part of living, she says.

The March of Dimes reports that acute stressors lead to pregnancy complications. And for a number of other conditions, chronic stress has emerged as an inequitable arbiter of health. It’s a lived reality for millions of Americans of color.

Our bodies are designed for threats that are fleeting: a predator, a natural disaster, a one-off brush with danger. And whether a body opts to fight or to fly, it has to rise to the occasion: blood pressure climbing, breath and pulse off at a gallop, adrenal glands releasing glucose to fuel muscles, cortisol to sharpen our readiness to use those muscles and adrenaline to kick-start it all. This is how it should be.

But when crises linger as ever-present spec-
ters, the same self-made fury that steals us away from the lions can slowly devour the body from within. Arteries stiffen. Vessel linings wither. The blood sugar balance forgets itself. The immune system falters, or mutinies.

**This summer, the American Medical Association (AMA) took a stand on the issue of police brutality, both physical and verbal, noting that it disproportionately affects racially marginalized communities. The AMA called such violence “a critical determinant of health” with rippling effects—and not just to those with personal connections to it.**

Citing a 2018 study in Lancet, the AMA noted there is a “spillover effect” on the population. Within the highly segregated neighborhoods where police encounters cluster, stress and anxiety levels are high. These same communities experience high rates of hypertension, diabetes and asthma, and the fatal complications of all of the above. African Americans report between one and seven additional poor mental health days per year for each police killing in the person’s state, and the distress takes on many forms: loss of self-regard, increased fear and vigilance, broken trust in social institutions, anger, rehashing of prior traumas, heightened perception of inequity, bereavement.

Simply living in communities where there is greater police presence, says the University of Minnesota’s Rachel Hardeman in an episode of the CME podcast Clinical Problem Solvers, has a “direct” correlation with preterm birth rates, according to her latest study. The episode begins a new series on antiracism in medicine, cohosted by Pitt’s Utibe Essien, assistant professor of medicine and a core investigator with the Center for Health Equity Research and Promotion in the VA Pittsburgh Healthcare System.

In “Stolen Breaths,” a New England Journal of Medicine essay published this summer, Hardeman and her coauthors write that “Black people cannot breathe because we are preemptively grieving the 1 in 1,000 Black men and boys who will be killed by police.” Black men are about three times more likely than white men to die in a police encounter.

Stress, broadly speaking, is when the challenges of what you’re up against seem to exceed your capacity and resources to cope. And it’s stressful to be threatened, period, even if the threat is just a low-lying question that nags in the background, says David Levinthal, who in both the lab and the clinic (he’s a GI specialist) focuses on the effects of stress, anxiety and depression on the body, as well as the neural connections that tie it all together. Levinthal is an assistant professor of medicine at Pitt and director of UPMC’s Neurogastroenterology and Motility Center.

It’s long been known that emotional well-
lular-level studies of this “stress-and-depression connectome.” Further validating their results is a complementary line of work from Peter Gianaros, professor of psychology, who uses functional MRI (fMRI) imaging in humans.

In projects led by Gianaros’ former PhD students Dana Jorgensen (PhD ’18) and Kimberly Lockwood (PhD ’19), he has also investigated race and ethnicity in cardiovascular and cerebrovascular health, and what drives those links.

The team has compared age-related brain changes to stress-related and socioeconomic factors like income, education and material resources, hunting for markers of whose cognitive health might be at risk in midlife and beyond. In a study funded by the National Institute of Diabetes and Digestive and Kidney Diseases, Gianaros and Anna Marsland, a Pitt professor of psychology, are following over time Pittsburghers living in various neighborhoods across the city. This ongoing work launched in 2017, which found that neighborhood-level disadvantage was indeed associated with poorer brain health. The group hypothesizes that just as the heart, kidneys, lungs and other organs decline in an onslaught of constant stress, so does the brain.

The cardiovascular system is supposed to be dynamic, marshalling oxygen and chemicals throughout our body when we need them. And conversely, when we don’t, powering down is extremely important, as well. Sleep, where we spend about a third of our lives, “has a function—it’s restorative,” says Karen Matthews, Distinguished Professor of Psychiatry and a leader in Pitt’s decades-old powerhouse in studies of stress and cardiovascular disease.

During healthy sleep, blood pressure dips by 10% to 20% as part of the body’s natural recharging process. But studies indicate that in African Americans, blood pressure doesn’t go down as it should. This steady state is not desirable; It probably damages endothelial cells, which line blood vessels throughout the body; and it’s been shown to lead to cardiovascular disease down the road.

And sadly, Matthews has shown, Black Americans are missing out on this battery recharge as early as adolescence.

In 2013 and 2014, she published papers on a study of both Black and white healthy adolescents from middle- and lower-income families. Matthews found that African American teens were particularly likely to have elevated night/day systolic blood pressure ratios, and this was true regardless of how much money their parents made or how much education they had attained.

Compared to white counterparts in the study, Black adolescents also reported more negative emotions, like depression, anger and cynicism; fewer “positive resources,” like self-esteem and optimism; and more “unpleasant interactions” plaguing their days, like conflicts and disagreements.

But among white participants who reported these same social-emotional hardships, blood pressure dipped just fine.

The medical literature has shown that throughout adulthood, Black individuals sleep less and have more fragmented sleep. This too begins in high school, Matthews found, with Black male adolescents sleeping the least and worst among their peers.

Matthews showed that among menopausal women, too, African Americans have the poorest sleep across ethnic groups. This finding came from a massive, multisite, longitudinal effort known as the Study of Women’s Health Across the Nation (SWAN). Among the biggest drivers for Black menopausal women’s sleep disturbances, she and her coauthors reported, was financial hardship.

Without proper recharging, from a physiological standpoint, we wake up with more to deal with and less energy to do it, says Matthews.

In time, poor sleep has powerful cumulative effects on the body, from head to toe. It’s essential for our organs, our emotions and our ability to develop, learn and endure. It’s known to have direct links to immunological function, to pain, to appetite and metabolism, to aging. To virtually every known aspect of our health.

Jonassaint still mourns her first baby who didn’t make it. And adding to that sting are the what-ifs: She knew something was wrong, and told her doctor so when she called. This was more than just a little spotting. But he said not to worry. No need to come in. Rest. Drink fluids. The end.

The next morning, she started having contractions and rushed to the hospital. There was no heartbeat. And there was no comfort, either. Instead of extending condolences, the first thing her doctor thought to do was defend yesterday’s advice.

“It was not like, Sorry your baby is deceased,” Jonassaint recalls—just defensiveness. On top of her grief, to be written off like that was devastating.

And then, in quick succession, it kept happening.

Jonassaint went to the florist, distressed, newly not-pregnant, and told the clerk she was looking for some flowers. The clerk snapped, “Well, what type of flowers? It’s a flower shop.”

“Baby’s funeral,” she said.

And the clerk was horrified.

A few weeks later, the clinic’s receptionist lectured her for missing her 30-week visit.

“Well, ma’am,” Jonassaint said, “I’m no longer pregnant. I lost my baby.”

And the receptionist was horrified.

To this day Jonassaint is convinced she would’ve been treated differently in that grief-stricken blur had she been white, though she acknowledges that of course it’s impossible to know for sure.

And there’s the rub. What-ifs are always running in the background, draining the battery. On those days scarred by loss, she says, “I felt as though my intersectionality at that point took my humanity away.”

Throughout her career, Pitt’s Sarah Pedersen, associate professor of psychiatry and psychology as well as codirector of the psychiatry department’s Youth and Family Research Program, has studied how discrimination, both in the moment and as a chronic presence, can lead to difficult life circumstances. Her current study, now in its third year, is funded by the National Institute on Alcohol Abuse and Alcoholism.

As part of the study, Pittsburghers record incidences of discrimination. And among white participants, about 20% have such an experience at some point within the length of the entire protocol, which is 17 days.

For Black participants, it’s 87%. And on average, Black young adult males report expe-
During healthy sleep, blood pressure dips by 10% to 20% as part of the body’s natural recharging process. In many African Americans, blood pressure doesn’t go down as it should.