Rise in Kidney Disease Tied to Other Chronic Conditions, Study Finds

Rates of the disease have been rising for decades, driven in part by diabetes and high blood pressure.

By Nina Agrawal - NYTimes
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The number of adults with chronic kidney disease is growing, according to a study published Friday in The Lancet. The disease was the ninth leading cause of death worldwide in 2023, up from the 27th leading cause in 1990.

About 14 percent of adults age 20 and older — 788 million people — were estimated to have chronic kidney disease in 2023, up from just over 12 percent in 1990, according to the study. The increase reflects the aging of the world's population, as well as the rise in common risk factors, such as diabetes, high blood pressure and obesity. It may also reflect growing awareness and diagnosis of the disease, researchers said.

Kidney disease is largely asymptomatic until it becomes advanced, at which point patients could already need dialysis or an organ transplant. But there are simple tests that detect it earlier and a host of newer medications to slow its progress.

"We should be doing a better job of identifying individuals at risk and intervening," said Dr. Susan Quaggin, a former president of the American Society of Nephrology and chair of medicine at the Northwestern University Feinberg School of Medicine who was not involved in the study.

How chronic kidney disease develops

Healthy kidneys are powerhouses of filtration, processing more than 150 liters of fluid from the blood each day, filtering out waste and toxins into urine and retaining important proteins in the blood. The kidneys also help make red blood cells, regulate the balance of certain minerals, and keep bones healthy.

Diabetes and high blood pressure, which become more common with age, are the most common risk factors for kidney disease, said Dr. Andrew Levey, the emeritus chief of nephrology at Tufts Medical Center in Boston. In the past 20 years, obesity, which is also linked to diabetes and high blood pressure, has become increasingly important.

The underlying link between these conditions and kidney disease is damage to the blood vessels, said Dr. Levey. The kidneys are highly vascular: About 20 percent of the blood

that the heart pumps goes to the kidney. Conditions like diabetes and high blood pressure damage blood vessels, leading to protein in the urine and a slower filtration rate.

Other risk factors for kidney disease include chronic infections, autoimmune disorders, and certain genetic variants. The new study also noted that chronic kidney disease is an emerging public health concern in Central America and South Asia, where excessive heat stress and exposure to environmental pollutants are thought to play a role.

An amplifier of other conditions

Left untreated, chronic kidney disease can progress more quickly to kidney failure, which in most cases requires dialysis or a transplant, said Dr. Teresa Chen, an assistant professor of medicine at the University of California, San Francisco. But most people with chronic kidney disease won't die of it; rather, they are more likely to die of cardiovascular complications like a heart attack, stroke or heart failure.

This is because kidney disease amplifies the processes that lead to cardiovascular conditions, Dr. Quaggin said. For example, people with kidney disease are at increased risk for high blood pressure, more plaque buildup and hardening in their arteries, all of which place increased stress on their hearts.

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The connections between cardiovascular, metabolic and kidney health are increasingly being recognized. In 2023 the American Heart Association formally defined "cardiovascular-kidney-metabolic syndrome," a health disorder resulting from the overlap of obesity, diabetes, chronic kidney disease and cardiovascular disease, and it is expected to issue new guidelines for screening and management next year.

"Metabolic dysfunction is at the root," said Dr. Josef Coresh, a professor of population health and medicine at the New York University Grossman School of Medicine and a senior author on the new paper. The kidney, he said, multiplies the damage and can lead to cardiovascular death.

Early detection is critical but underused.

Junelle Speller, a health care executive in Chicago, only learned she had kidney disease after her application for life insurance was rejected because of a result on her blood test. By all measures, Ms. Speller, then 32, was a healthy person: She ate well, exercised and stayed on top of her regular checkups.

Within months of being diagnosed, she went on dialysis. She received a kidney transplant from her brother, but it failed. She went back on dialysis, hooking herself up to a machine for nine hours every night for eight years before she got another transplant, in 2022, which was successful.

Ms. Speller, now 50, didn't know it at the time, but she had a variant of a certain gene that increased her risk of the disease. Routine blood and urine tests could have caught early signs of kidney damage, but her doctors either didn't order them or didn't flag any abnormality.

Current guidelines recommend that patients with diabetes, high blood pressure and other risk factors are screened for kidney disease with blood and urine tests. But these tests are vastly underutilized, in part because urine collection can be cumbersome and because of limited awareness about kidney disease, doctors said. Research has shown that only 35 percent of patients with diabetes, and only 4 percent of patients with high blood pressure, receive the urine test for screening.

Early diagnosis is crucial to preventing the bad outcomes associated with kidney disease, Dr. Quaggin said.

"We have incredible tools now to slow down the progression," she said. These include traditional drugs like ACE inhibitors, as well as several new classes of drugs shown to be effective at protecting kidney function, such as drugs used to treat heart failure and GLP-1 drugs.

These newer medications are not used broadly yet, but they're becoming more popular.

"I would be very hopeful that we could see this arc trend downward if we are able to really identify kidney disease early and implement these medications early," Dr. Quaggin said.

Nina Agrawal is a Times health reporter.