

Global Study Reports Rise in Chronic Kidney Disease

Analysis by [Dr. Joseph Mercola](#)

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STORY AT-A-GLANCE

- Chronic kidney disease (CKD) was estimated to affect about 788 million adults worldwide, more than double the number in 1990, making it one of the most widespread and underrecognized health concerns
- A recent systematic analysis published in The Lancet estimated that CKD was the ninth leading cause of death globally, responsible for roughly 1.48 million deaths in 2023 alone
- High blood sugar, elevated blood pressure, and excess body weight were identified as the leading risk factors for CKD worldwide, together associated with much of the disease's estimated health burden
- Early-stage CKD was estimated to affect over 13% of the adult population globally, yet many cases may go undiagnosed because symptoms often don't appear until the disease is advanced
- You may be able to lower your risk of CKD by keeping your blood pressure and blood sugar in check, getting regular movement, staying hydrated, reducing processed foods, and supporting kidney function with balanced nutrition

Chronic kidney disease (CKD) is a slow, progressive loss of kidney function that often advances without obvious symptoms, leaving many unaware of the damage until it is more advanced. This silent burden has pushed CKD to the forefront of global health priorities. In May 2025, the World Health Organization (WHO) added CKD to its plan for reducing premature deaths from noncommunicable diseases by one-third before 2030.¹

Combating the condition requires an up-to-date understanding of how widespread it has become. To address this need, researchers from NYU Langone Health, the University of Glasgow, and the University of Washington conducted a systematic analysis to map out how CKD has become prevalent over the past three decades, identifying it to be one of the most widespread and underrecognized health conditions today.²

What Is Chronic Kidney Disease?

Your kidneys handle one of the body's most demanding jobs. They contain millions of tiny filters designed to process small amounts of blood throughout the day, removing waste, balancing fluids, fine-tuning electrolytes, and regulating key hormones.³ When this finely tuned filtration system is compromised, it sets the stage for CKD.

- **CKD reflects long-term injury to the kidneys' filtering system** — As the filters in your kidneys become damaged, the remaining ones work harder to maintain filtration. This compensatory mechanism keeps you feeling stable even as the underlying decline continues.

Over time, the added workload can exhaust the remaining filters and contribute to a drop in the kidneys' overall filtration rate. Unlike acute kidney injury, which develops suddenly and may be reversible, CKD progresses gradually over months or years and typically involves lasting loss of function.⁴

- **Clinicians measure this decline through two main markers** — The first is the estimated glomerular filtration rate (eGFR), which shows how much blood your kidneys filter each minute. Think of it as a measure of how efficiently your kidneys are cleaning your bloodstream. An eGFR that stays lower than 60 for three months or more indicates reduced kidney function, while lower than 15 signals kidney failure.

The second is albumin in the urine, measured through the albumin-to-creatinine ratio (ACR). Albumin is a type of protein that should stay in your blood, not leak into your urine. When it shows up there, it may mean your kidney's filtration barrier has

become too porous, allowing larger molecules to slip through.

Together, eGFR and ACR help show how well your kidneys are working and how much structural damage has occurred — information that helps your clinician assess how advanced your condition is and how quickly it may progress.⁵

- **Kidney disease is classified into five stages** — These stages are based on how much filtering power your kidneys have left:^{6,7}
 - **Stages 1 and 2** reflect early damage. Kidney function is still near normal, but tests may detect signs of strain or mild structural injury. You usually won't feel any symptoms at this point.
 - **Stages 3a and 3b** indicate moderate loss of function. Waste products start to build up in the blood, and blood pressure may rise. Some people begin to experience symptoms, such as fatigue and swelling in their hands or feet.
 - **Stage 4** means severe loss of function. The kidneys are struggling to keep up with the body's needs, and symptoms such as swelling, high blood pressure, and pain in the lower back may become more noticeable.
 - **Stage 5**, or kidney failure, is when the kidneys can no longer maintain fluid, electrolyte, and waste balance without help. At this point, dialysis or transplant is typically needed to sustain life.
- **CKD affects more than the kidneys** — Reduced filtration can alter how your body regulates sodium, potassium, phosphorus, and acid, which can disrupt nerve, muscle, and heart function. It also can interfere with hormone systems that control blood pressure, red blood cell production, and bone metabolism. These changes can raise your risk of complications such as anemia, high blood pressure, bone loss, vascular calcification, and heart disease.⁸

Over time, the combined effects of CKD make it as much a systemic disorder as a renal one. Decades of silent decline in millions of people have now surfaced in global data, indicating a condition that has quietly climbed into the top tier of the world's leading causes of death.

CKD Ranks Among the Top 10 Causes of Death Worldwide

The featured study, published in *The Lancet*, provided estimates of morbidity, mortality, and the burden of CKD by severity using data from 204 countries between 1990 and 2023. The investigation was conducted as part of the Global Burden of Disease (GBD) 2023 study, one of the most comprehensive efforts to track health loss over time, shaping policy decisions and guiding global health priorities.⁹

- **CKD prevalence has more than doubled over the past three decades** — In 1990, an estimated 378 million adults were living with chronic kidney disease. By 2023, that figure was estimated to have risen to 788 million (uncertainty range 743 million to 843 million). The study estimates that about 14% of the world's adult population now has some degree of CKD, making it one of the most common chronic conditions worldwide.
- **CKD has now become the ninth leading cause of death worldwide, up from 17th in 1990** — In 2023, chronic kidney disease was responsible for an estimated 1.48 million deaths across the globe (uncertainty range 1.30 million to 1.65 million). When researchers adjusted for population growth and aging, the death rate from CKD was reported to have still risen by 6.1% since 1990.
- **The study also suggests how closely your kidneys are tied to your heart** — Researchers evaluated impaired kidney function as a risk factor for cardiovascular disease and analyzed how many cardiovascular deaths are linked to it.

They found that kidney impairment was estimated to account for 11.5% of cardiovascular deaths worldwide, ranking seventh among all environmental, behavioral, and metabolic risk factors. It falls just behind high blood pressure and

dietary risks and ahead of high blood sugar and high body mass index (BMI).

- **Most affected adults have early-stage disease, not kidney failure** — The majority of people captured in this dataset were not on dialysis or awaiting transplant. Globally, the combined prevalence of stages 1 to 3 CKD reached 13.9% in 2023.

Only a small fraction of adults were in stages 4 and 5 or on kidney replacement therapy. This suggests many people live with measurable kidney damage long before dialysis becomes a possibility, and those early years may offer the widest window for clinicians to slow progression.

- **Three metabolic risks were linked to a large share of the disability-adjusted life-years (DALYs) lost to CKD** — DALYs combine years of life lost to early death with years lived in poor health. High fasting plasma glucose was estimated to account for about 32% of CKD DALYs, high systolic blood pressure for about 25%, and high BMI for about 24%.

Diet quality, physical inactivity, exposure to extreme temperatures, and lead stored in bone also contributed to the burden, but elevated blood sugar, blood pressure, and body weight were identified as the biggest risk factors for kidney disease.

- **Underdiagnosis can delay early intervention** — These risks may be more manageable if kidney disease were detected and treated earlier, yet underdetection remains a central problem. Albumin in the urine is a simple, powerful marker of kidney damage, but guideline-recommended testing is still uncommon.

According to the study, only about 35% of people with diabetes and 4% of those with hypertension undergo albuminuria testing, even in high-income settings. Even when chronic kidney disease is present, about 30% of affected individuals do not have the diagnosis recorded in their medical chart.

- **Low-income regions face the steepest burden with the fewest resources** — Data on albuminuria and kidney function are sparse in many low-income countries, and access to dialysis and transplant remains extremely limited.

CKD now carries particularly heavy disease burdens in regions such as sub-Saharan Africa, North Africa and the Middle East, and Latin America and the Caribbean, even though many people there never reach dialysis.

These trends support the WHO's move to elevate kidney disease within its noncommunicable disease agenda and suggest that kidney health deserves the same long-term attention you associate with blood pressure, blood sugar, cancer, and heart disease.

Understanding the Factors That Contribute to Kidney Damage

As described in The Lancet study, CKD rarely develops from a single cause. More often, it reflects the combined effects of metabolic strain, vascular injury, and dietary imbalance accumulating over time. Understanding how these risk factors may damage your kidneys helps explain why addressing them matters.

- **Diabetes** — Diabetes is the leading cause of kidney failure in the United States, accounting for approximately 44% of new kidney failure cases.¹⁰ According to the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), about one in three adults with diabetes has kidney disease.¹¹

When blood sugar remains high for long periods, the small blood vessels in the kidneys gradually thicken and narrow, restricting normal blood flow. As circulation declines, the filters sustain damage, allowing albumin, a protein that normally stays in the bloodstream, to leak into the urine and contribute to inflammation that can gradually damage the delicate filtering units.¹²

- **High blood pressure** — The NIDDK reported that nearly 108 million adults in the U.S. (almost half the adults) have high blood pressure, and about one in five of those affected may have some degree of kidney disease.¹³

Elevated pressure inside the small renal vessels can gradually injure their walls, leading to scarring that may weaken filtration and fuel a self-perpetuating cycle of rising blood pressure and declining kidney function.¹⁴ Learn more in "[Did You Know? High Blood Pressure Causes Kidney Damage.](#)"

- **Chronic use of nonsteroidal anti-inflammatory drugs (NSAIDs)** — NSAIDs such as ibuprofen and naproxen can contribute to kidney damage by inhibiting prostaglandins, which are essential for maintaining blood flow to the kidneys.¹⁵ Long-term or frequent use of NSAIDs has been linked to the development of early CKD in a Korean study of older adults.¹⁶

To help protect your kidneys, talk with your doctor about any medications you take regularly, including NSAIDs, and to explore non-drug options whenever possible. Do not stop or change a prescribed medication without medical guidance.

- **Kidney stones** — A population-based cohort study published in BMC Nephrology found that 11.2% of individuals with kidney stones developed chronic kidney disease over time, compared to a significantly lower incidence in those without stones.

After adjusting for other risk factors, people with kidney stones were 1.82 times more likely to develop CKD than those without. The researchers concluded that kidney stones may be an independent risk factor for CKD, reinforcing the need for regular monitoring and early intervention in patients with a history of stones.¹⁷

- **Obesity and metabolic stress** — Excess body weight can raise both blood pressure and blood sugar, overactivating hormonal and inflammatory pathways that may wear down kidney function. Fat tissue also releases pro-inflammatory cytokines that can harm kidney tissue directly.¹⁸

Additionally, obesity can cause the kidneys to work harder to filter blood for the larger body mass, leading to glomerular hyperfiltration, a state where individual nephrons may become overworked and eventually scarred.¹⁹

Metabolic syndrome, characterized by the combination of abdominal obesity, high blood pressure, elevated blood sugar, and abnormal cholesterol levels, was associated with a modestly higher risk of kidney disease in a community-based study of people with high blood pressure.²⁰

Other contributors include autoimmune conditions, heavy metal exposure, chronic dehydration, and prolonged exposure to environmental toxins. Addressing these factors early may help slow decline, preserve the kidney function you still have, and lower your risk of reaching kidney failure.

8 Simple Steps to Support Your Kidneys

Your kidneys are resilient but constantly under strain. The way you eat, move, and care for your body can influence how well they function. Protecting them doesn't require drastic changes — just restoring balance, easing daily stress on the filtration system, and supporting the processes that keep it running. Here are strategies you can take right now that may help support healthy kidney function:

- 1. Balance your sodium-to-potassium ratio** — Maintaining a healthy sodium-to-potassium ratio is important for regulating blood pressure. However, the goal isn't to eliminate salt altogether, as **cutting salt** too aggressively may backfire by increasing insulin levels, worsening your cholesterol ratios, and putting your body into a stress state that may make high blood pressure harder to control. The real issue isn't salt itself but where it comes from.

Most dietary sodium today comes from **ultraprocessed food**, such as boxed snacks, canned goods, deli meats, and fast food, which are stripped of potassium, a mineral necessary to balance sodium.

Replacing these with whole, unprocessed foods such as ripe fruit, root vegetables, and well-cooked leafy greens may help restore your **sodium-potassium balance** and support healthy kidney function. If you already have CKD, check with your

healthcare provider before increasing potassium-rich foods, since potassium may need to be limited at some stages.

- 2. Get your vitamin D levels into the optimal range** — **Vitamin D** is involved in regulating the renin-angiotensin system, a hormone network that directly controls blood pressure. When vitamin D levels fall too low, this system may become overactive, which may raise blood pressure and increase strain on the kidneys. One way to help restore balance is through sensible sun exposure.

Make sure you're getting regular sun exposure, but avoid peak hours (10 a.m. to 4 p.m.) if you consume **linoleic acid** (LA) from industrial seed oils. LA is a polyunsaturated fat that oxidizes easily, builds up in your skin and may increase your risk of skin damage.

Cut these oils from your diet for four to six months before getting peak sun exposure. Get your vitamin D levels tested at least twice a year and aim for a level between 60 and 80 ng/mL (150 to 200 nmol/L). If you don't get regular sunlight, consider supplementing with vitamin D3 to maintain healthy levels year-round, ideally with your healthcare provider's guidance, since kidney disease can affect how your body handles vitamin D and calcium.

- 3. Move more** — If you're already active, aim for about an hour of moderate movement each day, like **walking**, cycling, or swimming. If you're just beginning, start small. Even a 10-minute walk after meals may help improve circulation, stabilize blood sugar, and ease pressure on your kidneys. What matters most isn't intensity, but consistency. Every bit of movement may support healthier kidneys.
- 4. Limit your oxalate intake** — If you're prone to kidney stones, it would be wise to limit your intake of oxalate. Common high-oxalate foods to watch for include spinach, almonds, peanut butter, sweet potatoes, and figs.

Pairing high-oxalate foods with calcium-rich options may help limit absorption in the gut. Calcium binds to oxalate, forming a compound that exits the body through your stool instead of your kidneys. Good sources include cheese made with animal

rennet, eggshell calcium, and low-oxalate greens like kale.

If you occasionally eat high-oxalate foods, boiling them can help. The heat draws oxalates into the cooking water, which should be discarded. Staying well hydrated is equally important, as drinking plenty of water dilutes oxalates in your urine and may reduce the risk of stone formation.

- 5. Watch your phosphorus intake** — Excess phosphorus intake, particularly from processed foods and phosphate additives, can force the kidneys to work harder to filter it from the blood. When kidney function begins to decline, phosphorus can build up, disrupting calcium balance and contributing to hormonal changes that further stress the kidneys.²¹

To lower your intake, avoid packaged and processed foods, colas, and fast food meats that often contain added phosphates. Choose fresh, whole foods instead and be sure to read ingredient labels carefully for terms like "phosphate" or "phosphoric acid." Also, limit dairy if your phosphorus levels are high because dairy products naturally contain organic phosphorus that the body can absorb. If you have CKD, a renal dietitian can help tailor phosphorus targets to your stage.

- 6. Drink plenty of pure water** — Staying well hydrated may help reduce the risk of kidney stones by diluting [substances in your urine](#) that contribute to stone formation. Let thirst be your guide for how much to drink, but a simple visual cue works just as well. Your urine should be a pale straw or light yellow color. If it turns dark yellow or amber, that may be a sign you need more water. If you have advanced CKD or heart failure, ask your doctor about fluid limits before increasing your water intake.
- 7. Address urinary tract infections (UTI) promptly with your healthcare provider** — In people with CKD, recurring infections have been linked to faster disease progression and a higher likelihood of reaching kidney failure.²² Some antibiotics used to treat UTI may need to be adjusted when kidney function is reduced, so make sure your provider knows about your kidney health.

One option to discuss with your healthcare provider is methylene blue, used only as a pharmaceutical-grade capsule or tablet, prescribed by a qualified professional and prepared by a compounding pharmacy. Learn more about it in "[Benefits and Side Effects of Methylene Blue — A Comprehensive Guide](#)."

- 8. Get regular screening if you have risk factors** — If you have high blood pressure, diabetes, or a family history of kidney disease, ask your doctor to include eGFR and urine albumin tests during your regular checkups. These simple screenings may reveal early kidney damage long before symptoms appear, giving you and your clinician the chance to act earlier.

This article is for informational purposes only and does not constitute medical advice. Consult a qualified healthcare provider before making changes to your health regimen.

Frequently Asked Questions (FAQs) About Chronic Kidney Disease

Q: How common is chronic kidney disease?

A: According to the Lancet Global Burden of Disease 2023 study, chronic kidney disease was estimated to affect about 788 million adults worldwide. That's more than double the number of cases reported in 1990. In 2023 alone, CKD was linked to about 1.48 million deaths, ranking it as the ninth leading cause of death globally.

Q: Can I have kidney disease even if I feel fine?

A: Yes. Many people with CKD have no symptoms in the early stages because the kidneys compensate for the loss by working harder. You may feel perfectly healthy even as damage progresses. That's why screening for markers of kidney dysfunction is important to catch CKD before it advances.

Q: What's the connection between blood pressure and kidney disease?

A: Your kidneys regulate blood pressure, and your blood pressure affects your kidneys. When blood pressure stays high, it can damage the small blood vessels in the kidneys, which may reduce filtration. As kidney function declines, fluid and salt build up in your body, which can further raise blood pressure and worsen the damage.

Q: Can kidney disease be reversed?

A: Early damage may sometimes be slowed or stabilized, and in some cases improved, if the cause is addressed quickly. Once kidney tissue is scarred, it usually cannot regenerate, but you may be able to preserve its remaining function. Managing blood pressure and blood sugar, reviewing your medications with your doctor, staying hydrated, and following a kidney-friendly diet may all help slow further decline.

Q: What are the first things I should do to lower my CKD risk?

A: Start by cutting back on processed food, getting regular movement, and staying well hydrated. If you have diabetes or high blood pressure, keep them under control with your healthcare provider, using lifestyle and nutrition alongside any medications they prescribe. Make sure your vitamin D levels are optimal and avoid unnecessary use of painkillers like NSAIDs. These small daily habits may help support your kidneys.

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