

Women with Kidney Disease Are Undertreated and Left Behind by Decades of Male-Dominated Research

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STORY AT-A-GLANCE

- › Chronic kidney disease affects 844 million people worldwide, yet women are less likely than men to be tested, diagnosed, referred to specialists, or receive treatments that have been adequately studied in female patients
- › Up to 30% to 50% of chronic kidney disease cases go undiagnosed in high-income countries, and women are up to twice as likely as white men to remain undiagnosed even when kidney damage is present
- › Women account for about 55% of the global chronic kidney disease population but represented only 45.4% of participants in kidney disease clinical trials, creating major gaps in knowledge about how treatments affect women
- › Social and economic factors, including caregiving responsibilities, financial barriers, and delayed access to specialist care, contribute to poorer kidney disease outcomes for many women as the condition progresses
- › Protecting kidney health includes addressing contributing factors, such as high blood pressure, poor mineral balance, vitamin D deficiency, physical inactivity, and ultraprocessed food consumption, while using routine blood and urine testing to detect problems before permanent damage occurs

Chronic kidney disease, characterized by damaged kidneys that gradually lose their ability to filter waste from your blood, affects 844 million adults worldwide and is projected to become the fifth leading cause of death globally by 2040.¹ The condition

often develops silently, but common signs include fatigue, swelling in your legs or ankles, changes in urination, high blood pressure, and difficulty concentrating. Left unchecked, it increases your risk of heart disease, kidney failure, dialysis, and premature death.

Yet the most unsettling problem with chronic kidney disease is not how widespread it's become — it's who the medical system keeps overlooking. A growing body of evidence points to a pattern that has gone largely unexamined for decades: women living with kidney disease are diagnosed less often, enrolled in research less often, and treated based on data that was rarely gathered with them in mind.

The result is a mismatch between who actually develops the disease and whose bodies shaped what doctors know about treating it. How that gap formed, why it has stubbornly resisted correction, and what it means for the millions of women managing kidney disease today is the story the newest research is finally beginning to tell.

Women Face Delays at Every Stage of Kidney Disease Care

A Series review paper (the second of three papers) published in *The Lancet* examined how biological sex influences kidney health, disease progression, diagnosis, treatment, and outcomes.²

They concluded that current treatment approaches often ignore important differences between women and men, even though those differences affect how [kidney disease](#) develops and how treatments perform.

- **Women encounter barriers even when disease is present** — Chronic kidney disease remains one of the most underdiagnosed health conditions worldwide, and women face an additional burden. In this featured Series published in *The Lancet*, researchers reported that up to 30% to 50% of chronic kidney disease cases go undiagnosed in high-income countries.

Women and nonwhite individuals are up to twice as likely to remain undiagnosed as white men, while nine out of 10 people who have chronic kidney disease don't know they have the condition.

- **Testing and referrals happen less often for women** — Women are less likely to receive kidney disease testing, specialist referrals, and cardiovascular risk management even when their clinical results are similar to those of men. From a practical standpoint, this means you could have the same laboratory findings as a male patient yet be less likely to receive the same level of attention or follow-up care.
- **Research participation does not reflect who actually has the disease** — Fewer than 45% of participants in kidney disease trials are women, and representation falls to roughly one-third in some studies involving kidney medications. If treatments are tested primarily in men, doctors have less information about how those therapies affect women in real-world settings.
- **Important treatment differences emerge when scientists examine women separately** — The paper described several examples where women responded differently than men. In the SONAR trial, the drug atrasentan provided greater kidney protection in women, but women also experienced more heart failure events.

In the REGENCY trial, which involves lupus nephritis, a kidney disease caused by autoimmune dysfunction, women responded substantially better to the drug obinutuzumab, while men achieved better outcomes without treatment. These findings suggest that averaging results across both sexes can hide clinically important differences that directly affect treatment decisions.

- **Biology helps explain why one-size-fits-all medicine falls short** — Genetics, hormone levels, kidney structure, and drug metabolism differ between women and men. Drug metabolism refers to how your body absorbs, processes, and eliminates medications.

Because those processes **differ between sexes**, the same medication can produce different benefits, risks, and side effects. The researchers argue that future studies should routinely analyze women and men separately so treatment recommendations better reflect how real patients respond.

Nearly 3 Decades of Research Left Women Underrepresented

For an analysis published in Clinical Kidney Journal, researchers examined 192 chronic kidney disease clinical trials registered on ClinicalTrials.gov and published between 1995 and 2022.³ Together, those studies included 147,136 participants.

Instead of looking at how a specific treatment worked, the researchers asked a different question: Were women being enrolled in kidney disease trials at rates that matched how often women actually experience the disease? The answer revealed a persistent mismatch that stretched across nearly three decades of research.

- **The numbers showed a consistent enrollment gap** — Across all 192 trials, women accounted for 66,875 participants, or 45.4% of those enrolled. At first glance, that might sound reasonably balanced. However, the researchers compared trial participation against the real-world burden of disease and found women represented about 55% of the global chronic kidney disease population.

To measure this discrepancy, they calculated something called the participation-to-prevalence ratio. That score compares how many women are enrolled in studies versus how many women actually have the disease. A perfect match would score 1.0. Instead, the average score was 0.75, showing women consistently appeared in trials at lower rates than expected.

- **The imbalance remained regardless of study design** — Underrepresentation remained similar whether studies focused on earlier or later stages of kidney disease, whether participants received dialysis or not, whether trials were funded by industry or other organizations, and whether the intervention involved drugs, devices, or other approaches.

Europe showed the largest imbalance, with a participation-to-prevalence ratio of just 0.65. Even more concerning, the researchers found no meaningful improvement between 1995 and 2022. Decades passed without solving the problem.

- **Researchers rarely analyzed women separately** — If you enjoy tracking your own health data, imagine combining your results with someone else's and not separating them again. That's essentially what happened in most of these trials. Only 39 of the 192 studies, just 20%, reported effectiveness outcomes separately for women and men.

When researchers fail to separate results by sex, important differences become invisible. The review found only one trial that identified a meaningful difference between women and men after performing sex-specific analysis. That finding alone illustrates how much information remains hidden when investigators don't look.

- **Safety data were almost completely missing** — Not a single trial reported adverse events — unwanted reactions or complications that occur during treatment — separately for women and men. This matters because the paper highlighted evidence from broader drug-safety databases showing that women often experience different side effects than men due to differences in how medications move through and interact with the body.

Factors such as hormone levels, body composition, and drug metabolism influence those responses. Without sex-specific safety reporting, doctors and patients are left with an incomplete picture of risk.

- **The study identified practical fixes for the future** — The researchers outlined several ways to improve research quality. They argued that clinical trials should plan sex-specific analyses before studies begin, include enough women to make those analyses meaningful, and remove enrollment barriers that disproportionately affect women.

The authors also noted that caregiving responsibilities, communication barriers, and study designs that unintentionally favor male participation all contribute to lower enrollment rates. Addressing those obstacles would give women a stronger voice in research and generate treatment data that better reflects the patients who actually live with the disease.

The Hidden Barriers That Limit Women's Access to Advanced Kidney Care

A commentary published in *Kidney International Reports* examined a puzzling pattern seen around the world: women appear frequently in the earlier stages of kidney disease, yet men dominate dialysis and transplant programs.⁴

The authors reviewed findings from the Chronic Kidney Disease Outcomes and Practice Patterns Study (CKD-DOPPS) and explored why women become less visible as disease progresses. The paper looked at the human side of health care access and the factors that influence who ultimately receives advanced treatment.

- **Disease progression tells only part of the story** — According to the analysis, men experienced a faster decline in kidney function in CKD-DOPPS clinics located in Brazil, France, Germany, and the U.S., helping explain why more men reached kidney replacement therapy, meaning dialysis or transplantation. However, the researchers emphasized that biology alone doesn't explain the entire gap.

They pointed out that many important events occur before a patient ever reaches a specialist kidney clinic, including whether primary care providers recognize the disease and whether patients receive timely referrals. For you as a patient, this highlights the importance of identifying kidney problems early rather than waiting until advanced disease develops.

- **Family responsibilities often compete with personal health** — Researchers surveyed kidney specialists from 22 countries and found recurring themes that limited women's access to advanced care. Economic inequality, caregiving duties,

and family responsibilities repeatedly surfaced as obstacles. Many women spend years helping spouses, children, parents, and grandchildren while delaying their own medical appointments.

The paper suggests that this pattern contributes to later diagnoses, fewer specialist visits, and reduced access to treatment when compared with men.

- **Social support and financial resources influence outcomes** — Women were less frequently employed than men, creating additional challenges in health care systems where insurance or health care access is tied to employment status. Men were also more likely to be married, which often translates into greater logistical support during illness.

Transportation, appointment scheduling, treatment adherence, and emotional support all become easier when another person helps coordinate care. These factors aren't medical measurements, but they still influence who receives treatment and when.

- **Pregnancy complications create an overlooked warning sign** — Another important finding centered on hypertensive disorders of pregnancy, including preeclampsia and pregnancy-induced high blood pressure. These conditions involve elevated blood pressure during pregnancy and are associated with a greater risk of future kidney disease and cardiovascular disease.

The global number of pregnancies affected by these disorders increased from 16.3 million to 18.08 million between 1990 and 2019. That means a pregnancy complication from years ago isn't simply a past event. It can serve as an early warning sign that your kidneys deserve closer monitoring later in life.

- **Earlier intervention offers one of the biggest opportunities for change** — Unlike many discussions that focus only on dialysis or transplantation, this paper emphasized the value of acting long before severe disease develops. Identifying

high-risk women earlier, especially those with a history of pregnancy-related complications, creates opportunities to slow disease progression and reduce future complications.

They also suggested that educating primary care providers about kidney disease risk factors could improve recognition and treatment at earlier stages. Viewed through that lens, one of the most powerful tools isn't a new drug or procedure. It's recognizing risk sooner and responding before kidney damage advances.

Take Charge of Your Kidney Health Before Problems Escalate

One of the biggest lessons from this research is that many women don't receive timely testing, referrals, or treatment, which means that, until the system catches up, knowing your own numbers and asking for the right tests is a form of self-protection. **High blood pressure** deserves special attention because it's both a major cause of kidney disease and a consequence of declining kidney function.

Over time, elevated pressure damages the tiny blood vessels inside your kidneys, reducing their ability to filter waste efficiently. The earlier you address the factors that drive high blood pressure and kidney strain, the greater your opportunity to protect kidney function for years to come.

- **Restore a healthy sodium-to-potassium balance** — If you're dealing with high blood pressure, focus on mineral balance rather than simply eliminating salt. Blood pressure regulation depends heavily on the **balance between sodium and potassium**. The larger problem is that most sodium comes from ultraprocessed foods that contain very little potassium.

Replacing those foods with whole foods such as ripe fruit, root vegetables, and well-cooked greens helps restore this balance and reduces stress on your kidneys. At the same time, eliminating ultraprocessed foods lowers exposure to **phosphate additives**, excess sugar, **seed oils**, and other compounds that increase your kidneys' workload.

- **Optimize your vitamin D status through sensible sun exposure** — Vitamin D helps regulate the hormonal system that controls blood pressure and fluid balance. When vitamin D levels remain low, that system may become overstimulated, which can increase vascular tension and place additional strain on your kidneys. Regular sun exposure is the most effective way to maintain healthy vitamin D levels.

If you still consume seed oils and other major sources of **linoleic acid** (LA), avoid intense midday sun for at least six months, since LA is a polyunsaturated fat that oxidizes easily, builds up in your skin, and increases your risk of skin damage. Aim for a vitamin D level between 60 and 80 ng/mL (150 to 200 nmol/L) and monitor it throughout the year. If regular sunlight isn't available, vitamin D3 supplementation helps maintain healthy levels.

- **Move every day and lower your stress response** — Regular movement improves circulation, supports healthy blood sugar levels, and reduces pressure on your kidney's filtering units. An hour of walking, cycling, swimming, or similar activity each day supports kidney health without excessive strain. If you're just getting started, even 10-minute sessions create momentum.

I also recommend addressing the emotional side of high blood pressure. Chronic stress triggers hormones that constrict blood vessels and drive blood pressure upward.

One simple strategy is box breathing: inhale for four seconds, hold for four seconds, exhale for four seconds, and hold again for four seconds. Practice for 10 minutes daily to help calm your nervous system and reduce unnecessary pressure on your blood vessels.

- **Reduce kidney stress from stones and excess phosphorus** — If you have a history of **kidney stones**, pay attention to your oxalate intake. Foods particularly high in oxalates include spinach, almonds, peanut butter, sweet potatoes, and figs. Pairing

oxalate-containing foods with calcium-rich foods helps bind oxalates in your digestive tract so fewer reach your kidneys. Low-oxalate greens such as kale work well for this purpose.

Boiling high-oxalate foods and discarding the cooking water further lowers the oxalate load. At the same time, reduce phosphorus from processed foods, colas, and fast-food meats. Excess phosphorus disrupts mineral balance and places additional strain on kidney tissue.

- **Stay hydrated and screen early if risk factors apply to you** — Hydration helps your kidneys dilute waste products and reduces the risk of stone formation. Thirst is usually a reliable guide, while pale yellow urine generally reflects adequate hydration. If you have high blood pressure, diabetes, obesity, a history of pregnancy-related blood pressure disorders, or a family history of kidney disease, make kidney screening part of your routine health maintenance.

Here, self-advocacy matters more than you might expect. Because women are tested and referred less often than men even when their lab values match a man's, the most reliable protection is to ask by name. At your next checkup, request two specific tests: eGFR (estimated glomerular filtration rate, a blood test of how well your kidneys filter) and urine albumin (which checks for protein leaking into your urine).

Ask what the numbers are rather than waiting to be told something is wrong. These simple tests detect damage long before symptoms appear, and finding problems early gives you a far greater opportunity to slow progression before permanent damage occurs. The system may not flag you, so flag yourself. Lastly, talk to your health care provider about whether this testing is appropriate for you.

FAQs About Women and Kidney Disease

Q: Why are women less likely to receive a kidney disease diagnosis?

A: Research shows women are less likely to be tested, referred to specialists, and enrolled in studies that guide kidney disease treatment. As a result, many women remain undiagnosed even when signs of kidney disease are present. In high-income countries, an estimated 30% to 50% of chronic kidney disease cases go undiagnosed, and women face an even greater risk of being overlooked.⁵

Q: Why does it matter that women are underrepresented in kidney disease research?

A: Women make up about 55% of the global chronic kidney disease population but represented only 45.4% of participants in kidney disease clinical trials. When treatments are tested primarily in men, researchers have less information about how those therapies affect women, including differences in effectiveness, side effects, and long-term outcomes.⁶

Q: What factors increase a woman's risk of kidney disease?

A: High blood pressure, diabetes, obesity, and a family history of kidney disease are well-known risk factors. Women with a history of preeclampsia or pregnancy-related high blood pressure also face a higher risk later in life. These pregnancy complications often serve as early warning signs that kidney function deserves closer monitoring.

Q: How does high blood pressure damage the kidneys?

A: High blood pressure places constant stress on the tiny blood vessels that filter waste from your blood. Over time, that pressure damages the kidneys' filtration system, reducing their ability to remove waste and regulate fluid balance. Kidney disease can also worsen high blood pressure, creating a cycle that accelerates

further damage.

Q: What are the most important steps to protect kidney health?

A: Focus on the root causes of kidney damage by maintaining a healthy sodium-to-potassium balance, avoiding ultraprocessed foods, optimizing vitamin D levels, staying physically active, managing stress, staying hydrated, and monitoring kidney function if you have risk factors. Early screening with blood and urine tests offers one of the best opportunities to identify problems before permanent kidney damage develops.

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

Sources and References

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