

New blood pressure-lowering guidelines could benefit 25 million Americans with chronic kidney disease

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A recommendation for more intensive blood pressure management from an influential global nonprofit that publishes clinical practice guidelines in kidney disease could, if followed, benefit nearly 25 million Americans, according to an analysis led by researchers at the Johns Hopkins Bloomberg School of Public Health.

The new recommendation from Kidney Disease: Improving Global Outcomes, a global nonprofit that develops evidence-based [clinical practice guidelines](#) in [kidney disease](#), is aimed at doctors to help them to reduce [blood pressure](#) for chronic kidney [disease](#) patients whose systolic blood pressure levels are over 120 mmHg. Blood pressure can be reduced using antihypertensive medications and lifestyle modifications. The analysis indicates that 69.5 percent of chronic kidney disease patients in the United States—a total of 24.5 million people—would meet that criterion.

The study appears alongside the new Kidney

Disease: Improving Global Outcomes (KDIGO) guidelines on February 18 in the journal *Kidney International*.

"This is a major update of an influential set of guidelines for chronic kidney disease patients, and it is coming out against a backdrop of worsening [blood pressure control](#) in the U.S.," says study first author Kathryn Foti, Ph.D., a postdoctoral researcher in the Department of Epidemiology at the Bloomberg School.

Researchers estimate that more than 35 million people in the U.S. have chronic kidney disease, a condition in which the kidneys are damaged and becoming progressively less efficient at filtering wastes from the blood. Unfortunately, awareness and diagnosis of kidney disease is low. High blood pressure is a major cause of chronic kidney disease, a contributor to its worsening, and a major risk factor for cardiovascular disease. Thus, it has long been considered important for chronic kidney disease patients to keep their blood pressure in the normal range, if necessary, with medications including angiotensin converting enzyme (ACE) inhibitors and angiotensin II receptor blockers (ARBs). Because chronic kidney disease is so common, these new clinical guidelines could have a major public health impact.

"Controlling blood pressure is particularly important for the one in seven people in the United States with chronic kidney disease," says Josef Coresh, MD, Ph.D., the George W. Comstock Professor in the Bloomberg School's Department of Epidemiology. "Reducing blood pressure in adults with chronic kidney disease to the level recommended in the new guidelines could also reduce cardiovascular disease among this group."

The researchers determined from their analysis that

Blacks and Asian Americans with chronic kidney disease are more likely than whites to have blood pressure readings above the 2020 Kidney Disease: Improving Global Outcomes target level.

Normal, healthy blood pressure is considered to be below 120 mmHg systolic and 80 mmHg diastolic. The most recent Kidney Disease: Improving Global Outcomes recommendation, in 2012, was for doctors to treat their chronic kidney disease patients as needed to get their blood pressure readings down to, or below, 140 mmHg systolic and 90 mmHg diastolic—and even lower, 130/80 mmHg, for those with albuminuria, a protein-in-the-urine sign of more severe chronic kidney disease. In 2017, the American College of Cardiology and American Heart Association jointly issued a recommendation for blood-pressure lowering in chronic kidney disease patients to 130/80 mmHg.

In the study, the researchers analyzed blood pressure and other data on a sample of 1,699 U.S. adults with chronic kidney disease in the 2015-2018 National Health and Nutrition Examination Survey to gauge the proportion of chronic kidney disease patients who would potentially benefit from the new KDIGO guidelines.

Their chief finding was that 69.5 percent of U.S. chronic kidney disease patients, or about 24.5 million individuals, are eligible for blood-pressure lowering according to the 2020 KDIGO guideline—compared with 49.8, percent according to the 2012 Kidney Disease: Improving Global Outcomes guidelines, and 55.6 percent, according to the 2017 American College of Cardiology/American Heart Association guidelines.

Thus, about seven million more chronic [kidney](#) disease patients are eligible for blood-pressure lowering under the new guidelines compared to the 2012 Kidney Disease: Improving Global Outcomes guidelines—and when using the 2017 American College of Cardiology/American Heart Association guidelines for comparison, about 5 million more are eligible.

The analysis suggests that at the time of the 2015-18 National Health and Nutrition Examination Survey, 14.4 million U.S. adults with [chronic kidney](#)

[disease](#) were not taking blood-pressure lowering medicines. Of these, 61.8 percent, or about 8.9 million U.S. adults, had systolic blood pressure levels over 120 mmHg and thus should consider starting on blood-pressure lowering medicines under the new guidelines.

The authors note that [blood pressure](#) control improved in the U.S. over most of the past two decades, although in the last several years that trend has reversed.

More information: Kathryn E. Foti et al. Potential implications of the 2021 KDIGO blood pressure guideline for adults with chronic kidney disease in the United States, *Kidney International* (2021). [DOI: 10.1016/j.kint.2020.12.019](https://doi.org/10.1016/j.kint.2020.12.019)

Provided by Johns Hopkins University Bloomberg School of Public Health

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