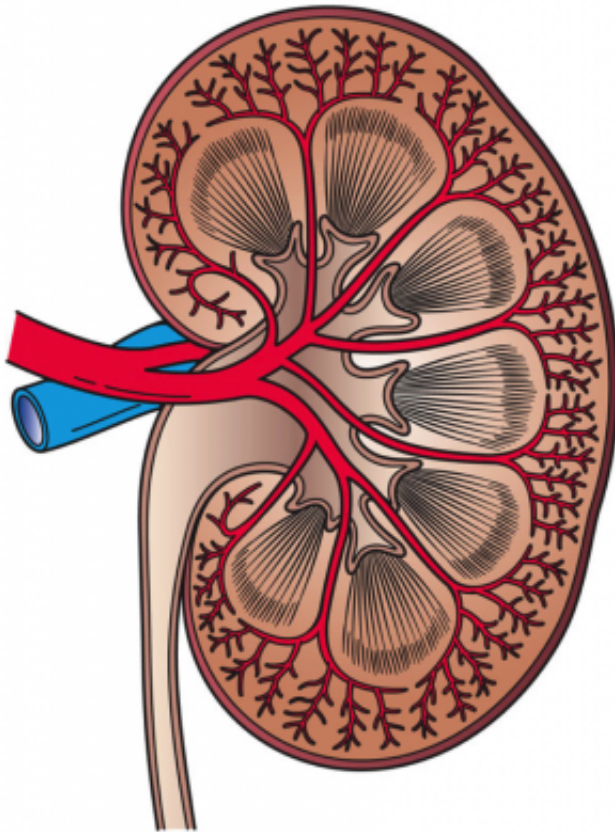# Measuring kidney health could better predict heart disease risk

29 May 2015

This image shows a cross section of a kidney. Credit: Holly Fischer/Wikipedia

Simple measures of kidney function and damage may be just as good at predicting who is at risk for heart failure and death from heart attack and stroke as traditional tests of cholesterol levels and blood pressure, new Johns Hopkins Bloomberg School of Public Health-led research suggests.

Publishing in the *Lancet Diabetes and Endocrinology* on May 29, the researchers say their data may help physicians make better decisions about whether patients need lifestyle modifications such as better diets and more exercise or treatments such as statins, medication

widely used for cardiovascular disease prevention.

Most importantly, the researchers note, the information is already widely available for many patients. The most common assessment of kidney function checks the blood for creatinine, a waste product of the muscles, and reflects how well the kidneys are filtering it out (called an estimated glomerular filtration rate, or eGFR). The test is given an estimated 290 million times every year in the United States. Another key test measures albuminuria, or how much of the protein albumin leaks out of the kidney and into the urine. Higher amounts indicate the presence of kidney damage. It is also a fairly common test, particularly in patients with diabetes, hypertension and kidney disease.

"If health care providers have data on kidney damage and kidney function - which they often do - they should be using those data to better understand a patient's risk of cardiovascular disease," says study lead author Kunihiro Matsushita, MD, PhD, an assistant scientist in the Bloomberg School's Department of Epidemiology. "Cholesterol levels and blood pressure tests are good indicators of cardiovascular risk, but they are not perfect. This study tells us we could do even better with information that often times we are already collecting."

The Chronic Kidney Disease Prognosis Consortium coordinated by Professor Josef Coresh, MD, PhD, and colleagues at the Johns Hopkins Bloomberg School of Public Health analyzed data from 24 studies that included more than 637,000 participants with no history of cardiovascular disease and the results of tests of eGFR and albuminuria. They found that both eGFR levels and albuminuria independently improved prediction of cardiovascular disease in general and particularly heart failure and death from heart attack and stroke, but albuminuria was the stronger predictor. It outperformed cholesterol levels and systolic blood pressure - and even whether someone is a

smoker - as a risk factor for heart failure and death from heart attack or stroke.

People with chronic kidney disease are twice as likely to develop cardiovascular disease as those with healthy kidneys and roughly half of them die from it before they reach kidney failure.

Several clinical guidelines already recommend that patients with diabetes, hypertension and the possibility of chronic kidney disease be evaluated for kidney function and kidney damage.

Matsushita says the new data demonstrate that other individuals not covered by the recommendations may also benefit from having their kidneys assessed. For example, he says, the ability to predict cardiovascular risk was particularly robust in black study participants when eGFR and albuminuria were considered.

The biological mechanisms linking kidney disease to cardiovascular disease aren't well understood, but Matsushita says that poorly functioning kidneys can lead to a fluid overload that may result in heart failure. He says that people with kidney disease tend to not receive certain medications that can reduce heart ailments, such as statins, likely because patients with kidney disease frequently are excluded from clinical trials performed to prove the efficacy of these medicines.

Provided by Johns Hopkins University Bloomberg School of Public Health

APA citation: Measuring kidney health could better predict heart disease risk (2015, May 29) retrieved 2 May 2021 from https://medicalxpress.com/news/2015-05-kidney-health-heart-disease.html