# Blood Markers Offer Hope for Chronic Kidney Disease

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## Chronic kidney disease may be diagnosed earlier, thanks to newly discovered blood markers

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(dailyRx News) Chronic kidney disease is a growing health problem in the US. But a new discovery may help.

A new study from Germany found that certain blood markers may signal chronic kidney disease (CKD). This finding could potentially lead to earlier and improved diagnosis and help doctors monitor the health of CKD patients.

CKD is the gradual loss of kidney function. While its cause isn't always known, any condition that damages the blood vessels, such as diabetes or high blood pressure, can lead to CKD.

"Up to 10 percent of adults in America have kidney disease, but current blood tests only detect this condition when half of kidney function is lost," said David Winter, MD, chief clinical officer, president and chairman of the board of Baylor Health Care System's HealthTexas Provider Network, in an interview with RxWiki News. "We need better blood markers that identify kidney disease earlier. Those with diabetes and hypertension are more susceptible to kidney disease."

Healthy kidneys filter waste and excess fluids from the blood, which are then excreted as urine. When CKD reaches an advanced stage, dangerous levels of fluid, electrolytes and wastes can build up in the body. CKD can progress to end-stage kidney failure, which is fatal without artificial filtering (dialysis) or a kidney transplant. However, early detection and treatment can often keep CKD from getting worse.

Measures of kidney function are usually based on blood concentrations of creatinine, which only begin to rise after 50 percent of the kidneys' function has been lost. Creatinine is a chemical waste product that's produced by the body's muscles. Healthy kidneys filter creatinine from the blood into the urine.

For this study, a team of researchers led by Anna Köttgen, MD, MPH, a professor of epidemiology at the University of Freiburg in Germany, measured the concentrations of almost 500 metabolites in the blood of several thousand patients.

Metabolites are molecules produced during the body's metabolic process. When kidney function is impaired, metabolite concentrations in the blood can rise.

Dr. Köttgen and team found six metabolites in the blood of these patients that had strong links to kidney function.

Two of the metabolites (pseudouridine and C-mannosyltryptophan) were as accurate as creatinine levels in measuring kidney function and CKD progression.

According to the National Kidney Foundation, more than 26 million US adults have CKD (at various levels of seriousness), and millions more are at risk.

This study was published Oct. 8 in the *Journal of the American Society of Nephrology.*

The German Federal Ministry of Education and Research, the German Center Diabetes Research and the European Commission Seventh Framework Programme funded this research. Several study authors disclosed applying for a patent for precise estimation of CKD using these blood markers.