

# Study finds a novel and more practical way to measure kidney function

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Researchers working on a study to improve kidney function measurements have found a way to provide more accurate readings. Using an injectable biomarker, physicians were able to read the actual working capacity of the kidney in a clinical setting in half the time it used to take.

Currently, physicians rely on estimated [kidney function](#) (or estimated [glomerular filtration rate](#)) to make clinical decisions regarding patient care. Measuring true kidney function is possible; but it is cumbersome, time-consuming and not readily available as it is done only in research settings.

Dana Rizk, M.D., a nephrologist in the Division of Nephrology at the University of Alabama at Birmingham, led the effort and published data on the new biomarker in the study, "A Novel Method for Rapid Bedside Measurement of Glomerular Filtration Rate," which was published in the *Journal of the American Society of Nephrology*.

Working with colleagues from Indiana University and FAST BioMedical, the researchers tested a new injectable biomarker to measure kidney function in healthy volunteers as well as patients with varying degrees of [chronic kidney disease](#). The test turned out to be accurate when compared to the gold standard test used in research settings. The GFR measurement required half the time and blood draws, and the results were reproducible and safe. Rizk says this is the first step toward implementing this technology in the clinical setting.

"Having a more accurate reading of kidney function will enable physicians to intervene earlier if the kidneys are beginning to fail," Rizk said. "This new biomarker will prompt us to measure kidney function in special patient populations where estimating formulas are known to be less accurate."

"Additionally, Rizk says it could be applied when measurement of true kidney function is crucial as is the case sometimes prior to [kidney donation](#), for example," Rizk said. "Finally, it will open doors to scientists' testing new therapeutics to use smaller and earlier changes in GFR as target outcomes."

According to Anupam Agarwal, M.D., director of the Division of Nephrology at UAB, this will be a significant advance in the field of nephrology.

"Currently available biomarkers that are routinely used to diagnose abnormal kidney function, such as blood levels of creatinine, are mostly elevated after significant kidney damage has already been imposed," Agarwal said. "The work by Dr. Rizk and colleagues provides a novel method to determine true [kidney function](#) by directly measuring glomerular filtration rate in a safe, accurate and reproducible manner. We will be able to detect kidney damage early and potentially test therapeutic interventions to reverse the course of kidney diseases."

The FDA is reviewing the study results to guide future research steps. Rizk says more studies are needed to use the new biomarker in the setting of [acute kidney injury](#) and to make the test results available without the need for repeated blood draws.

**More information:** Dana V. Rizk et al. A Novel Method for Rapid Bedside Measurement of GFR, *Journal of the American Society of Nephrology* (2018). [DOI: 10.1681/ASN.2018020160](https://doi.org/10.1681/ASN.2018020160)

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