

New, combined equation more accurately estimates GFR

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(HealthDay) -- A combined creatinine-cystatin C equation has improved performance and accuracy for estimating glomerular filtration rate (GFR), according to research published in the July 5 issue of the *New England Journal of Medicine*.

Using data from 13 studies involving 5,352 participants, Lesley A. Inker, M.D., from Tufts Medical Center in Boston, and colleagues developed estimating equations based on [cystatin C](#) alone and in combination with creatinine. Validation of the equations was performed in 1,119 participants from five different studies in which GFR had been measured.

In the validation set, the researchers found that the creatinine-cystatin C equation performed better than equations that used creatinine or cystatin C alone. [Bias](#) among the three equations was similar. The combined equation had significantly improved precision (interquartile range of the difference, 13.4 versus 15.4 and 16.4 ml/min/1.73 m², respectively) and accuracy (percentage of estimates that were >30 percent of measured GFR, 8.5 versus 12.8 and 14.1, respectively). For participants with a creatinine-based estimated GFR of 45 to 74 ml/min/1.73 m², the combined equation improved classification (net reclassification index, 19.4 percent) and correctly reclassified 16.9 percent of patients with a creatinine-based estimated GFR of 45 to 59 ml/min/1.73 m² to ≥60 ml/min/1.73 m².

"The combination of serum [creatinine](#) and serum cystatin C is more accurate than either marker alone for estimating GFR," the authors write. "The new equations represent an advance over currently available equations across the range of GFR and in relevant subgroups."

Two study authors and the editorial author disclosed financial ties to the pharmaceutical and biotechnology industries.

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