Researchers develop and test risk score for childhood kidney condition

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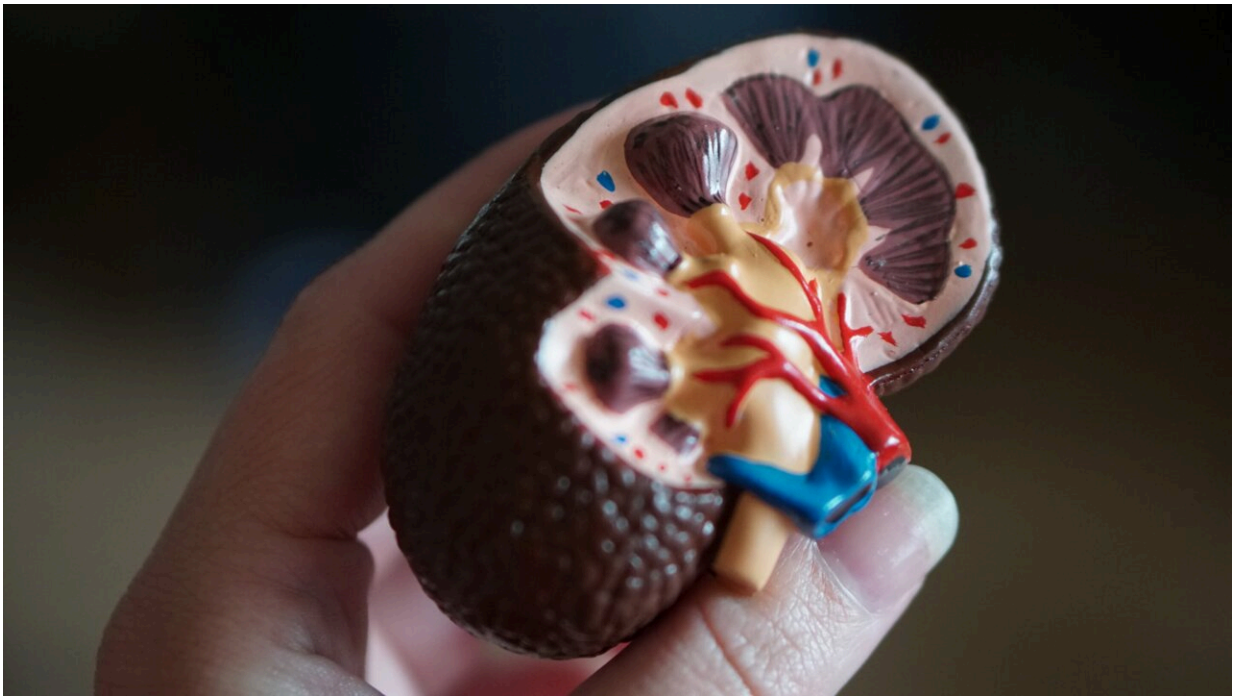

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Certain studies called genome-wide association studies (GWAS) have implicated single genetic variants in contributing to different diseases, and these variants can be combined to generate polygenic risk scores (PRS) to predict an individual's risk of developing such diseases. Researchers recently generated a PRS for pediatric steroid-sensitive nephrotic syndrome (pSSNS), a kidney disease in children. The research

will be presented at ASN Kidney Week 2022 November 3-November 6.

Researchers from a global pSSNS consortium first conducted a GWAS of pSSNS and discovered 12 regions of the genome that harbored increased risk for this disease. Eight of these regions were novel. The same researchers then created a PRS using the genetic data from this GWAS and assigned each child their own PRS. Among children with pSSNS, those with a higher PRS tended to develop the condition at an earlier age.

"We are excited to have been part of a global collaboration that both discovered new GWAS loci for pSSNS and created a PRS. We look forward to following up on our discovery in multiple ways," said corresponding author China Nagano, MD, Ph.D., a post-doctoral research fellow in the laboratory of Matt Sampson, MD, MSCE at Boston Children's Hospital and a Pediatric Nephrologist at Kobe University Graduate School of Medicine (in Japan).

"From a clinical perspective, we can test whether higher PRS lowers the threshold of a healthy child to develop pSSNS in the context of an environmental trigger. From a mechanistic perspective, we can test if the PRS is correlated with molecular profiles from a child's blood, urine, and/or kidney tissue. Collectively, these insights could lead to a more precise understanding of the pathobiology of pediatric steroid sensitive nephrotic syndrome."

More information: Abstract: A multi-population polygenic risk score for pediatric steroid sensitive nephrotic syndrome is correlated with disease age of onset

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