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Common prebiotic fiber mitigates harm of high-salt diet in rats

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New research in rats finds a diet high in the prebiotic fiber inulin offered a protective effect against the damage of a high-salt diet. The research will be presented this week at the American Physiological

Society (APS) and American Society for Nephrology Control of Renal Function in Health and Disease conference in Charlottesville, Virginia.

Inulin is a prebiotic dietary fiber common in fiber supplements and found in foods like onions, artichokes and chicory root. Prebiotic fibers like inulin are not absorbed by the body but instead move to the large intestine where it is fermented by the healthy bacteria of the microbiome. Studies are increasingly showing links between byproducts of this fermentation and physiological processes in the body.

In the current study, researchers from Augusta University in Georgia used a rat model of salt-sensitive high blood pressure and chronic kidney disease to study the effects of this fiber. They fed the rats either a high-inulin diet or an equal amount of non-fermentable fiber. They then introduced the rats to a high-salt diet.

Female rats on the inulin diet had lower blood pressure than their counterparts fed non-fermenting fiber. Though male rats did not show this same reduction in blood pressure, both sexes had less protein in their urine and damage to their kidneys than controls.

Though human studies on the kidney-protecting effect of inulin are limited, especially those on sex differences, the researchers note that similarities between rat and human gut microbiota "may give us reason to speculate" that humans could show parallel effects. With further study into metabolic interactions, "dietary approaches could be utilized as either a preventative or alternative to medicine, especially for those predisposed to salt-sensitivity," the researchers wrote.

Provided by American Physiological Society

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