

High fiber diets may alleviate inflammation caused by gout

January 4 2017

New research published in the *Journal of Leukocyte Biology*, shows that a high-fiber diet likely inhibits gout-related inflammation caused by monosodium urate (MSU) crystals. Specifically, researchers found that diets high in fiber trigger microorganisms in the gut to produce short chain fatty acids (SCFAs), which induce neutrophil apoptosis and the resolution of inflammation. These findings have important implications for the treatment of gout, and possibly for the treatment of arthritis.

"By understanding the way foods interact with living organisms, we may be able to create diets that help people with the disease, as well as their health overall," said Mauro M. Teixeira, Ph.D., a researcher involved in the work from the Immunopharmacology Group in the Department of Biochemistry and Immunology at the Institute of Biological Sciences at the Federal University of Minas Gerais in Minas Gerais, Brazil.

To make their discovery, scientists used a [high-fiber diet](#) and treatment with SCFAs to prevent inflammation associated with the injection of MSU crystals in the knees of mice. Kinetic experiments showed that this caused neutrophil apoptosis and efferocytosis. Resolution of inflammation also was accompanied by enhancement of the production of anti-inflammatory cytokines in the knee joint, further preventing knee damage and dysfunction.

"We are seeing an explosion in our mechanistic understanding of how microbial communities in our intestines and elsewhere influence multiple aspects of immune and metabolic health," said John Wherry,

Ph.D., Deputy Editor of the *Journal of Leukocyte Biology*. "This work is an elegant example of how tuning of inflammatory circuits by linking diet to microbial products can have a profound effect on an inflammatory disease in the joints. Future work may allow such findings to be translated into practical treatments for gout and other diseases."

More information: Angélica T. Vieira et al, Dietary fiber and the short-chain fatty acid acetate promote resolution of neutrophilic inflammation in a model of gout in mice, *Journal of Leukocyte Biology* (2017). [DOI: 10.1189/jlb.3A1015-453RRR](https://doi.org/10.1189/jlb.3A1015-453RRR)

Provided by Federation of American Societies for Experimental Biology

Citation: High fiber diets may alleviate inflammation caused by gout (2017, January 4) retrieved 3 May 2024 from <https://medicalxpress.com/news/2017-01-high-fiber-diets-alleviate-inflammation.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.
