

Researchers discover Mediterranean diet ingredient may extend life

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Researchers at the University of Minnesota Medical School discover a potential new way in which diet influences aging-related diseases.

Doug Mashek, Ph.D., a professor in the Departments of Medicine and Biochemistry, Molecular Biology and Biophysics, leads a team of researchers who discovered that [olive oil](#) in the Mediterranean diet may hold the key to improving lifespan and mitigating aging-related diseases. Over the last eight years, with the help of multiple grants from the National Institutes of Health, their research findings were recently published in *Molecular Cell*.

Early studies on the diet suggested red wine was a major contributor to the health benefits of the Mediterranean diet because it contains a compound called resveratrol, which activated a certain pathway in cells known to increase lifespan and prevent aging-related diseases. However, work in Mashek's lab suggests that it is the fat in olive oil, another component of the Mediterranean diet, that is actually activating this pathway.

According to Mashek, merely consuming olive oil is not enough to elicit all of the health benefits. His team's studies suggest that when coupled with fasting, limiting [caloric intake](#) and exercising, the effects of consuming olive oil will be most pronounced.

"We found that the way this fat works is it first has to get stored in microscopic things called [lipid droplets](#), which is how our cells store fat. And then, when the fat is broken down during exercising or fasting, for example, is when the signaling and [beneficial effects](#) are realized," Mashek said.

The next steps for their research are to translate it to humans with the goal of discovering new drugs or to further tailor dietary regimens that improve health, both short-term and long-term.

"We want to understand the biology, and then translate it to humans, hopefully changing the paradigm of healthcare from someone going to

eight different doctors to treat his or her eight different disorders," Mashek said. "These are all aging-related diseases, so let's treat aging."

More information: Charles P. Najt et al, Lipid Droplet-Derived Monounsaturated Fatty Acids Traffic via PLIN5 to Allosterically Activate SIRT1, *Molecular Cell* (2019). [DOI: 10.1016/j.molcel.2019.12.003](https://doi.org/10.1016/j.molcel.2019.12.003)

Provided by University of Minnesota Medical School

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