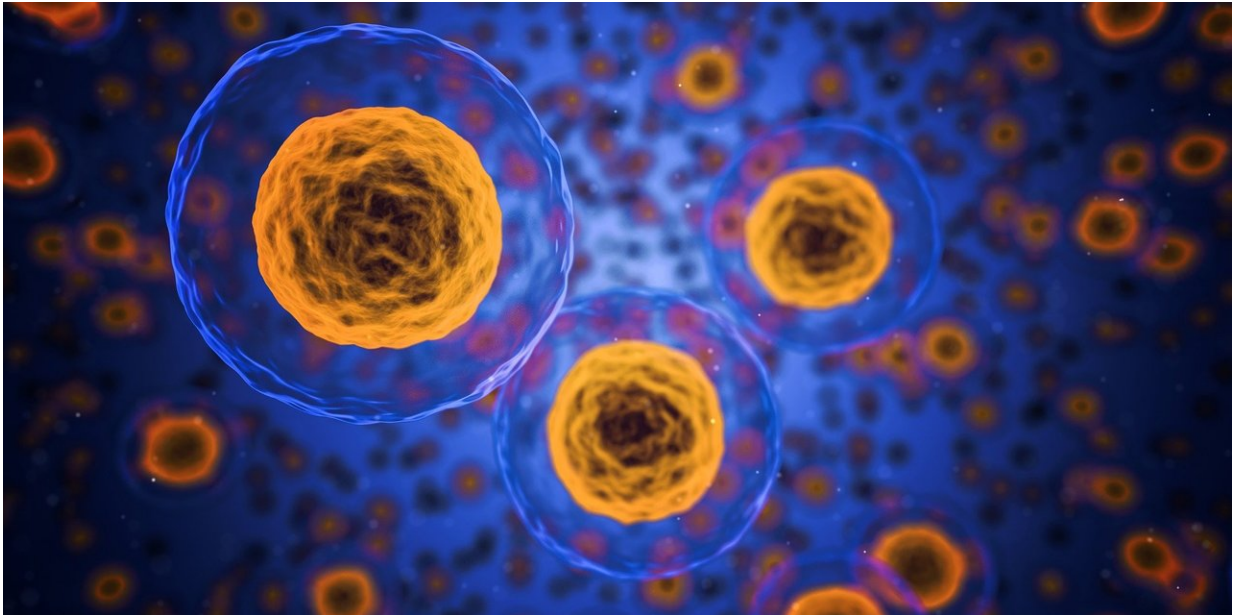


Researchers discover how to slow aging

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Previous research published earlier this year in [*Nature Medicine*](#) involving University of Minnesota Medical School faculty Paul D. Robbins and Laura J. Niedernhofer and Mayo Clinic investigators James L. Kirkland and Tamara Tchkonja, showed it was possible to reduce the burden of damaged cells, termed senescent cells, and extend lifespan and improve health, even when treatment was initiated late in life. They now have shown that treatment of aged mice with the natural product Fisetin, found in many fruits and vegetables, also has significant positive effects on health and lifespan.

As people age, they accumulate damaged [cells](#). When the cells get to a certain level of damage they go through an aging process of their own, called cellular senescence. The cells also release inflammatory factors that tell the immune system to clear those damaged cells. A younger person's immune system is healthy and is able to clear the damaged cells. But as people age, they aren't cleared as effectively. Thus they begin to accumulate, cause low level inflammation and release enzymes that can degrade the tissue.

Robbins and fellow researchers found a natural product, called Fisetin, reduces the level of these damaged cells in the body. They found this by treating mice towards the end of life with this compound and see improvement in health and [lifespan](#). The paper, "[Fisetin is a senotherapeutic that extends health and lifespan](#)," was recently published in *EBioMedicine*.

"These results suggest that we can extend the period of [health](#), termed healthspan, even towards the end of life," said Robbins. "But there are still many questions to address, including the right dosage, for example."

One question they can now answer, however, is why haven't they done this before? There were always key limitations when it came to figuring out how a drug will act on different tissues, different cells in an aging body. Researchers didn't have a way to identify if a treatment was actually attacking the particular cells that are senescent, until now.

Under the guidance of Edgar Arriaga, a professor in the Department of Chemistry in the College of Science and Engineering at the University of Minnesota, the team used mass cytometry, or CyTOF, technology and applied it for the first time in aging research, which is unique to the University of Minnesota.

"In addition to showing that the drug works, this is the first

demonstration that shows the effects of the drug on specific subsets of these damaged cells within a given tissue." Robbins said.

More information: Matthew J. Yousefzadeh et al, Fisetin is a senotherapeutic that extends health and lifespan, *EBioMedicine* (2018). [DOI: 10.1016/j.ebiom.2018.09.015](https://doi.org/10.1016/j.ebiom.2018.09.015)

Ming Xu et al. Senolytics improve physical function and increase lifespan in old age, *Nature Medicine* (2018). [DOI: 10.1038/s41591-018-0092-9](https://doi.org/10.1038/s41591-018-0092-9)

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