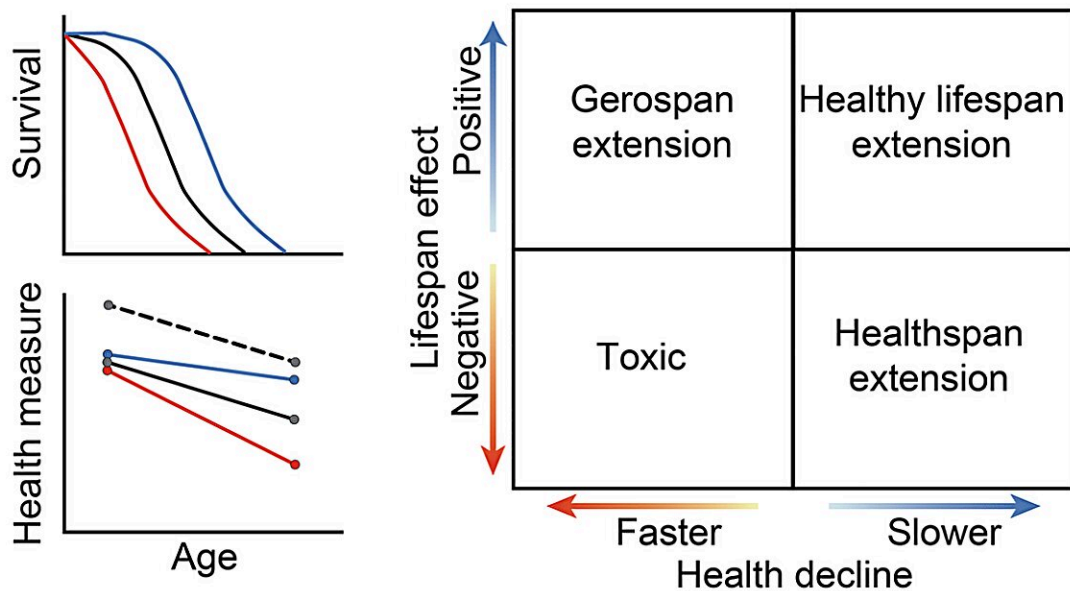


Scientists explore the coupling between health span and lifespan in *Caenorhabditis*

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Potential effects of compounds on lifespan and health. Credit: 2024 Banse et al.

A new research paper was [published](#) in *Aging* titled, "The coupling between healthspan and lifespan in *Caenorhabditis* depends on complex interactions between compound intervention and genetic background."

Aging is characterized by declining health that results in decreased cellular resilience and neuromuscular function. The relationship between [lifespan](#) and health, and the influence of [genetic background](#) on that relationship, has important implications in the development of pharmacological anti-aging interventions.

In this new study, researchers from the University of Oregon, The State University of New Jersey (Rutgers), The Buck Institute for Research on Aging, and National Institute on Aging assessed swimming performance as well as survival under thermal and [oxidative stress](#) across a nematode genetic diversity test panel to evaluate [health effects](#) for three compounds previously studied in the Caenorhabditis Intervention Testing Program and thought to promote longevity in different ways—NP1 (nitrophenyl piperazine-containing compound 1), propyl gallate, and resveratrol.

"Overall, we find the relationships among median lifespan, oxidative stress resistance, thermotolerance, and mobility vigor to be complex."

The researchers showed that oxidative stress resistance and thermotolerance vary with compound [intervention](#), genetic background, and age. The effects of tested compounds on swimming locomotion, in contrast, are largely species-specific. In this study, thermotolerance, but not oxidative stress or swimming ability, correlates with lifespan. Notably, some compounds exert strong impact on some health measures without an equally strong impact on lifespan.

"Our results demonstrate the importance of assessing health and lifespan across genetic backgrounds in the effort to identify reproducible anti-aging interventions, with data underscoring how personalized treatments might be required to optimize health benefits."

More information: Stephen A. Banse et al, The coupling between healthspan and lifespan in *Caenorhabditis* depends on complex interactions between compound intervention and genetic background, *Aging* (2024). DOI: [10.18632/aging.205743](https://doi.org/10.18632/aging.205743)

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