

Study pinpoints genes involved in diet-mediated life-extension

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Researchers at the University of Liverpool have developed a new method to identify genes involved in diet-mediated life-extension which allowed them to find three novel genes that extend lifespan in yeast.

The researchers in Liverpool, in collaboration with researchers at the University of Arkansas, studied [dietary restriction](#), which consists of limiting certain factors in diet (like calories) without malnutrition and has been shown to increase lifespan from yeast to monkeys. Many genes had been associated with dietary restriction before, and the researchers developed a method to study how the genes interact with each other as part of networks to decipher the mechanisms involved and find possible missing links. This allowed them to identify new genes that mediate life-extension in response to dietary restriction. Three of such genes they then showed to extend [lifespan](#) in yeast via dietary restriction-related mechanisms.

Some of the new genes identified may have similar functions in humans and could be potential targets for anti-ageing interventions. Dr Joao Pedro de Magalhaes, who led the study, explains: "Some targets for retarding ageing in humans being clinically tested were initially discovered in yeast, so we definitely want to continue this work with a view of ultimately tackling the human [ageing process](#) and developing treatments for age-related diseases. Besides, our method can be used to predict genes involved in life-extension mediated by dietary restriction in mammals and even in humans. We just tested our predictions in [yeast](#) because it was quicker and cheaper, but we are now looking to obtain

funding to pursue this line of research in more complex models. I am definitely optimistic that it is possible to develop an anti-ageing pill."

The work is published in August in [PLoS Genetics](#).

More information: [doi:10.1371/journal.pgen.1002834](https://doi.org/10.1371/journal.pgen.1002834)

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