

Keeping an eye on the entire ageing process

February 15 2018, by Prof. Ralph Müller



Frail people often suffer from several illnesses at the same time. Credit: Colourbox

Medical researchers often only focus on a single disease. As older people often suffer from multiple diseases at the same time, however, we need to rethink this approach, writes Ralph Müller.

Humans are increasingly living longer. Interestingly, however, statisticians only predict an increase in years of life, not years in which we remain healthy: these "healthy years" stay more or less constant. That means that people live longer, but spend more of that time ill – which

suggests there will be negative consequences for the financing of our health system.

It's time for a rethink. It's true that plenty of [research](#) is conducted on age-related conditions such as cardiovascular [disease](#), osteoporosis and [neurodegenerative diseases](#). However, science is currently predominantly focused on understanding how individual diseases occur and how these can be treated. The fact that many [older people](#) suffer from multiple diseases at the same time is given too little attention in research. In future, there should be much greater emphasis on investigating common causes of [age-related diseases](#) and combating the development of multimorbidities.

Together with 12 colleagues, with whom I worked as part of a COST project by the European Science Foundation, I have proposed these goals in an opinion piece published today in the journal *Nature*.

A single pill

An example: Seven out of 10 diabetics over the age of 65 currently die of heart failure. Nobody knows why. If we want to identify these kinds of connections, we need more fundamental research.

Together with other researchers, I argue that there are common causes for age-related diseases. There is good reason to hope that in the future, new treatment methods will be found that can delay frailty, so that people can stay healthy for longer.

Instead of giving a patient five different pills, in the future they may only need one to help them stay healthy for longer. There are currently many potential drugs that could slow down the ageing process, and which could be tested. However, this requires new, efficient and appropriate models: animal models, cell culture models and computer models.

Development can be accelerated

In animal models – even those for age-related diseases – two- to six-month-old mice are often used, although laboratory mice have an [average life expectancy](#) of almost two years. There are also currently almost no animal models in which multiple diseases can be studied at once.

New computer models, in which treatments for geriatric medicine and multimorbidity can be simulated, are also essential. They can be used to make a preliminary selection, which means that only those methods that have shown the most promise in our simulations would be tested on animals and humans. This would reduce the number of animal experiments and accelerate the development process as a whole.

Everyone will benefit

Treatments that extend the "healthy years" are by no means limited to medication. Nutrition, psychological measures and those involving sports and exercise also play their part, as do safeguards that prevent older people from breaking bones if they fall.

It would also be necessary for research to pay more attention to frailty and to develop new methods of measuring frailty, including gait analysis and the use of new wearable sensors.

As a research location, Zurich is very strong in the areas of medical engineering and health. ETH Zurich has expanded in this area, and ageing research is a particular focus for the Department of Health Sciences and Technology (D-HEST), which was founded six years ago and has a number of new professorships in this area. Increased collaboration between disciplines offers the opportunity to find new

treatments that are less focused on extending lifespan than on extending healthspan.

And the best part is that because everyone ages, this is a research goal that literally every person will benefit from.

More information: Bellantuono I: Find drugs that delay many diseases of old age. *Nature* 2018. 554: 293, [DOI: 10.1038/d41586-018-01668-0](https://doi.org/10.1038/d41586-018-01668-0) , www.nature.com/articles/d41586-018-01668-0

Provided by ETH Zurich

Citation: Keeping an eye on the entire ageing process (2018, February 15) retrieved 27 April 2024 from <https://medicalxpress.com/news/2018-02-eye-entire-ageing.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.