

What if we lived up to 150 years?

Life expectancy has been projected to continue to rise in industrialised countries, including in Europe, mostly due to increases in people reaching the age of 65 years and older. What if life expectancy in Europe rose further and reached 150 years? This publication approaches the concept of increased life expectancy in terms of increased adult life years, and discusses some hypothetical impacts and anticipatory policy issues.

Social, technological and healthcare system improvements have contributed to considerable [longevity gains](#) in [Europe](#) over the last 100 years, for example, improved prognosis and treatment of cancer and cardiovascular diseases, lower infant mortality rates, [successful vaccination](#), and fewer deaths from infectious disease. A further [50 % increase](#) in our lifespan, as seen in the last century, is unlikely to occur due to the same continued advance, but instead through progress in slowing the [ageing](#) process, which remains one of the least understood aspects of life. Advances have mostly been made at the cellular and genomic level, and a 'cure for ageing' (the [debate](#) on which is a topic in itself), is a long way off. One component of ageing is that our human cells undergo a finite number of replications or have a limited 'lifespan', with programmed cell senescence and death. Manipulation of this process, through genetics or even diet (e.g. [caloric restriction](#)) may extend longevity. However, quality of life and the extension of healthy life years are critically important, as opposed to simply extending life per se. Environmental improvements may also more immediately contribute to added life and healthy life years. Globally, [6.5 million](#) deaths a year are attributed to air pollution alone, for example. [Reducing car traffic](#) or making cars more environmentally friendly (e.g. electric or hydrogen-fuelled cars) considerably improves air quality and can therefore extend life expectancy.



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Potential impacts and developments

What if life expectancy in Europe reached 150 years? Coupled with a [declining fertility rate](#), this would lead to a drastic change in demographics, with a considerable shift in balance towards an elderly population. Our social and physical environments would be significantly altered from a wide range of perspectives, resulting in major shifts in our framing of the education–work–retirement cycle; our household make-up; and our healthcare system, including the role of [assistive technologies](#), for example. In this scenario, we consider an increasing elderly population on the assumption that overall population growth slows, and the impacts and policy considerations discussed below are therefore primarily focused on increasing population age, as opposed to an increasing population in number, which could also be a consequence of increased longevity. A declining birth rate in Europe, due in part to better family planning, education, and the [increasing average age of women when having their first child](#), is one factor in a changing working-age population. Fewer children per woman can be considered a positive in terms of environmental impact, and can lead to more women working, boosting the working-age population (a factor also determined by mortality and migration). However, an increasingly older population could nevertheless help preserve a working age population of the necessary size in the face of declining birth rates, on the premise that healthy life years, and retirement ages, are equally significantly prolonged. Maintaining a productive working population is essential to defer potential [economic losses](#) predicted from a declining birth rate and an older population. Society-wide attitudes to the education-work-retirement pattern would also need to be challenged to more adaptive thinking, including for example: gradual or 'part-time' retirement, career breaks, continuous

upskilling and re-education, reconstruction of traditional 'single' path careers, and perhaps increased emphasis on voluntary and mentoring activities.

Younger generations are essential actors in the emergence of newer technologies, attitudes, and ideologies that can benefit the planet and society, with [youth climate activists](#) today providing a good example. Shifts towards continued education and methods to increase innovation, acceptance and open-mindedness may be necessary in a mainly older population. On the other hand, older people possess a valuable wealth of experience, knowledge and wisdom they can pass to subsequent generations in an educative, leadership or mentoring capacity. Social norms and age prejudice would, however, need to be tackled proactively, allowing a flow of dynamic intergenerational interaction.

The alternative scenario, where fertility rates do not decrease in line with extended life expectancy, and the global population continues to rise, would see detrimental consequences. The global burden on resources such as land, materials, energy, food and water, would be unsustainable at the current rate of consumption. Lifestyle ideologies and core values in high-income countries would need to be greatly reprogrammed to move away from materialistic preferences and to reduce consumption, waste and carbon footprints.

Diabetes, cancer and cardiovascular diseases are some of the [leading causes of death worldwide](#), with [overweight and obesity](#) being considerable underlying factors, associated with heavy comorbidity and an economic burden. Age itself is a major risk factor for various diseases, particularly cancer and neurodegenerative diseases. If the average life expectancy were extended to 150 years, this might sharply increase the prevalence of age-related disease and disability. Frailty, bone fractures and sleep disturbance are also more common in older adults. In addition to physical health, mental health must also be taken into account in considerations of quality of life.

If the European population were to live to 150 years on average, living conditions will have to be rethought, with residential and working locations in question. Sustainably developed housing and communities would also be required, to encourage diversity, inclusion and social wellbeing for all age groups.

Anticipatory policy-making

Policies to promote healthy ageing are vital to populations that live better for longer. These could include: sustained funding for research into healthy ageing, disease prevention, and therapeutics; adaptation of the built environment and transportation systems; and assistive technologies to promote independence. Healthcare systems, including insurance and delivery of care, may need to be reimagined, with a higher emphasis perhaps placed on community settings and at-home care to relieve over-subscribed hospitals, institutions and medical staff. Increased use of volunteers and robots could help relieve or replace staff.

Continued and more drastic approaches would be needed to promote renewable energy, reduce single-use plastics and pollution, and increase incentives for a zero-waste culture and sustainable living.

The importance of mental health is not only relevant to the elderly population but throughout all stages of life, particularly as the working age range widens, with citizens potentially working for many more years. Future policies may promote a broader appreciation of the benefits of meditation and other mind-body techniques, such as [yoga](#) and [tai chi](#), as well as of the role of [healthy eating](#) and nutrition. Linked to this is the need for sustainable food.

Another area that deserves more attention is the consideration of euthanasia and access to assisted dying. Such policies have triggered considerable ethical and legal debate and have major implications for policy.

Important policy considerations in both scenarios chiefly centre around extending healthy lifespan, shifting the education–work–retirement pattern and advancing eco-conscious lifestyles. Promotion of mental wellbeing, and research into all biological and societal aspects of healthy ageing are paramount. Finally, access to the means to live better for longer will not be sustainable unless it is equally attainable by persons from all socio-demographic groups, and must not be determined by education level, wealth, race, beliefs, gender or other prejudices. European Union legislation supporting equal access to [healthcare](#), [pensions](#), [employment](#), [education](#), and [end-of-life decisions](#) must therefore be reviewed in the light of this expected demographic change.